

***Course Catalogue for incoming students 2024/2025***

**Universidad Europea de Madrid**



## Considerations about the present course catalogue

Please read carefully the following IMPORTANT remarks about the Course catalogue.

- Use this document as an orientative guide. This compilation of the courses offered at Universidad Europea de Madrid (UEM) is tentative and subject to change at any time. Availability of places is limited and, although rare, you might be asked to swap a selected course. Having a course on your Learning Agreement does not guarantee you a spot in the course.
- The course contents (course code, course name, credits, semesters, teaching language, contents, competencies etc.) defined in this course catalogue may have non updated information. The official and updated information must be checked by the student at the official Course Learning Guide, posted in the Virtual campus and web and the student official transcript of records/enrollment.
- The course codes and Teaching Language in RED means course **in Spanish**. The course codes and Teaching Language in BLUE means course **in English**.
- UEM makes available to exchange students a wide range of courses. As of now, your choice is limited only to the range of courses offered within your School, regardless the Degree a course belong to. At the moment UEM consist of 4 Schools
  - Faculty of Social Sciences and Communication
  - Faculty of Physical Activity and Sport Sciences
  - School of Architecture, Engineering, and Design
  - Faculty of Biomedicine and Health Sciences
- Incoming students must choose courses taught in the language they prove to be solvent. A mix of courses taught in English and Spanish is allowed. UEM encourage to take courses taught in Spanish, not only because the offer is wider but as something central to your learning experience in Spain.
- The choice of courses is limited to those included in this Catalog.
- Incoming students can study Spanish as a Foreign Language. The study of other languages is not allowed.
- Incoming exchange students can complete a maximum of 30 ECTS per semester. As the offer is extent, we strongly suggest that you identify one alternative courses that you could join if changes to your Learning Agreement are required at some point.
- Timetables are released over the summer months. You will be required to select . Orientatively timetables can be consulted here:
  - [GENERAL TIMETABLE LINK:](#)
- As information regarding availability of courses and its nature might change, incoming exchange students are ultimately responsible to ensure that their final enroled courses matches their expectations in terms of contents, ECTS, and timetables when their studies at UEM begin.
- Instructions about UEM's Application and Enrolement process are provided separately to students nominated by their home institutions.

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## SPANISH AS A FOREIGN LANGUAGE

Year: 1st	Course code: <b>P230001109</b>	Course: <b>Foreign Language A I (Spanish)</b> Group: M13	Program: <b>Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish A1</b>	Cr: <b>6 ECTS</b>
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**Note:** this course is **opened to any incoming student from any School/Faculty**. Language level of the course is **SPANISH A1**

**Course contents/Units:**

- Unit 1. Lexical content: alphabet/characters; colours; numbers; weather; time; seasons; materials; descriptive adjectives; family; common professions; common objects and places in a familiar context; parts of the human body; health leisure activities.
- Unit 2. Grammatical content: articles; personal, interrogative, demonstrative and possessive pronouns; conjugation; modal verbs; basic tenses – present, preterit y present perfect; sentence structure of basic statements and questions; prepositional and adverbial phrases of time and place; imperative, basic comparatives.
- Unit 3. The foundations of the phonological system of the foreign language selected.

**Specific competencies:**

- SC5: Ability to communicate effectively in two languages, at a general level and specifically in the professional field of International Business.

Year: 2nd	Course code: <b>P230001209</b>	Course: <b>Foreign Language A II (Spanish)</b> Group: M23	Program: <b>Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish A2</b>	Cr: <b>6 ECTS</b>
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**Note:** this course is **opened to any incoming student from any School/Faculty**. Language level of the course is **SPANISH A2**

**Course contents/Units:**

- Unit 1. Lexical content: family; activities and events; furniture; nature; food and packaging; tourism and leisure; sport; common diseases; body parts; working life; useful objects; media; Internet; education and training; Means of transport.
- Unit 2. Grammatical content: verb tenses – past tense, past perfect, imperfect and future; cases and declension; compound words; conjugation; modal and reflexive verbs; Adverbs Temporary; demonstrative, interrogative and relative pronouns; sentence structure with subordinate sentences; conjunction; temporary prepositions and 129 place; imperative, voice passive in present tense, indirect questions, subjunctive in present tense, conditional in present tense.
- Unit 3. Phonetic system of the foreign language.

**Specific competencies:**

- SC5: Ability to communicate effectively in two languages, at a general level and specifically in the professional field of International Business.

Year: 3rd	Course code: <b>P230001309</b>	Course: <b>Foreign Language A III (Spanish)</b> Group: M33	Program: <b>Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish B1</b>	Cr: <b>6 ECTS</b>
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**Note:** this course is **opened to any incoming student from any School/Faculty**. Language level of the course is **SPANISH B1**

**Course contents/Units:**

- Unit 1. Lexical content: personality traits; world of work; housing; customer service; Media of communication; animals; advice; strengths and weaknesses; Bless you; sport and food; gastronomy; emotions; activities and events in the company; formation; Requests; relations; culture; politics and society; natural landscapes; environment; New technologies
- Unit 2. Grammatical content: verb tenses – past tense, past perfect, plusquamperfect, imperfect and future; verbal periphrasis; subjunctive; structure and use of gerunds; Adverbs cause and consequence; cases and declination; Conditional; relative pronouns; Adjectives substantives; subordinate sentences; Conjunctions; infinitive sentences; passive voice past tense, past perfect and with modal verbs; indirect speech.
- Unit 3. Phonetic system of the foreign language.

**Specific competencies:**

- SC5: Ability to communicate effectively in two languages, at a general level and specifically in the professional field of International Business.

# BACHELOR'S DEGREES IN ENGLISH AND BILINGUAL (ENGLISH+SPANISH)

School of Architecture, Engineering and Design

Bachelor's Degree in Aerospace Engineering (English)

1	9966002101	Calculation I	Semestre 1 / Fall Term (Sept – Jan)	English	6
1	9966002102	Physical Foundations of Engineering I	Semestre 1 / Fall Term (Sept – Jan)	English	6
1	9966002103	Computer Science for Engineering	Semestre 1 / Fall Term (Sept – Jan)	English	6
1	9966002104	Graphic Expression	Semestre 2 / Spring Term (Jan – Jun)	English	6
1	9966002105	Chemistry for Engineering	Semestre 1 / Fall Term (Sept – Jan)	English	6
1	9966002106	Algebra	Semestre 2 / Spring Term (Jan – Jun)	English	6
1	9966002107	Aerospace Technology	Semestre 1 / Fall Term (Sept – Jan)	English	6
1	9966002108	Organization and Management of Aerospace Companies	Semestre 2 / Spring Term (Jan – Jun)	English	6
1	9966002109	Calculation II	Semestre 2 / Spring Term (Jan – Jun)	English	6
1	9966002110	Physical Foundation of Engineering II	Semestre 2 / Spring Term (Jan – Jun)	English	6

Year: <b>2nd</b>	Course code: <b>9966002201</b>	Course: <b>Thermodynamics and heat transfer</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Principles of thermodynamics and its application to control volume.</li> <li>• Unit 2. Behavior and analysis of the gas volumes. Thermodynamic potentials. General thermodynamic relationships.</li> <li>• Unit 3. Equilibrium systems. Transitions of phase.</li> <li>• Unit 4. Maintenance and selection of power plants.</li> <li>• Unit 5. Introduction to combustion process.</li> <li>• Unit 6. Introduction to heat transfer mechanism, conduction, convection and radiation.</li> <li>• Unit 7. Application to the design of satellites (thermal Control and heat transfer)</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC8: To understand thermodynamics cycles for mechanic power generation and thrust</li> <li>• SC19: Applied knowledge of: the science and technology of materials, mechanics and thermodynamics, fluid mechanics, aerodynamics and flight mechanics, navigation and air traffic, aerospace technology, theory of structures, air transport, economy and production projects; impact on environment</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9966002202</b>	Course: <b>Mechanics</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1: Statics 1.1. Introduction: Postulates and Statics of a Point Particle 1.2. Equivalent Systems of Forces 1.3. Equilibrium of Rigid Solids: reactions at connections and supports
- Unit 2: Dynamics 2.1. Kinematics of a Point Particle 2.2. Kinetics of a Point Particle 2.3. Plane Kinematics of Solids 2.4. Plane Kinetics of Solids
- Unit 3: Applications 3.1. Lagrangian dynamics 3.2. Distributed Forces 3.3. Introduction to Orbital Mechanics 3.4. Mechanical Vibrations

**Specific competencies:**

- SC15: Adequate knowledge and applied to engineering: The principles of continuum medium mechanics and techniques for calculating its response.
- SC19: Applied knowledge of: the science and technology of materials, mechanics and thermodynamics, fluid mechanics, aerodynamics and flight mechanics, navigation and air traffic, aerospace technology, theory of structures, air transport, economy and production projects; impact on environment.

Year: <b>2nd</b>	Course code: <b>9966002203</b>	Course: <b>Materials Science</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Mechanical properties</li> <li>• Unit 2. Polymers</li> <li>• Unit 3. Adhesives</li> <li>• Unit 4. Crystal structure and geometry</li> <li>• Unit 5. Phase diagrams</li> <li>• Unit 6. Ceramics</li> <li>• Unit 7. Application to Satellite Design (Carbon Fiber and Aluminum Alloys)</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC15: Adequate knowledge and applied to engineering: The principles of continuum medium mechanics and technics for calculating its response</li> <li>• SC18: Appropriate knowledge applied to engineering of: basics of fluid mechanics; basic principles of flight control and automation; main characteristics and physical and mechanical properties of materials.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9966002205</b>	Course: <b>Navigation systems I</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction to Circuit Analysis</li> <li>• Unit 2. AC Waveforms, Phasors and Impedances</li> <li>• Unit 3. Introduction to AC Power and AC Power Circuits</li> <li>• Unit 4. Complementary Material. Electrical Systems of Aircraft</li> <li>• Unit 5. Introduction to Electronics. Diodes</li> <li>• Unit 6. Introduction to Transistors</li> <li>• Unit 7. Introduction to Power Electronics</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC17. Adequate knowledge and application to the engineering of the fundamental elements of the various types of aircraft; the functional elements of the air navigation system and associated electrical and electronic installations; the fundamentals of the design and construction of airports and their various elements.</li> <li>• SC19. Applied knowledge of: the science and technology of materials; mechanics and thermodynamics; fluid mechanics; aerodynamics and flight mechanics; navigation and air circulation systems; aerospace technology; structure theory; air transport; economy and production; projects; environmental impact.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9966002206</b>	Course: <b>Fluid Mechanics I</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction to the mechanics of fluids.</li> <li>• Unit 2. Kinematics</li> <li>• Unit 3. Governing equations of fluid mechanics</li> <li>• Unit 4. Fluid static</li> </ul>						

- Unit 5. Flow through turbomachinery
- Unit 6. Discontinuity surfaces
- Unit 7. Introduction to the turbulent motion
- Unit 8. Introduction to aerospace propulsion systems.

**Specific competencies:**

- SC16: Appropriate knowledge applied to engineering of: concepts and laws that manage the processes of energy transfer, the movement of fluids, the mechanisms of heat transfer and mass exchange, and their influence on main systems of aerospace propulsion
- SC18: Appropriate knowledge applied to engineering of: basics of fluid mechanics; basic principles of flight control and automatization; main characteristics and physical and mechanical properties of materials.

Year: <b>2nd</b>	Course code: <b>9966002207</b>	Course: <b>Statistics</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Descriptive Statistics
- Unit 2. Probability.
- Unit 3. Random variables and introduction to stochastic processes
- Unit 4. Probability models.
- Unit 5. Statistical inference.

**Specific competencies:**

- SC1: Ability to solve mathematical problems arising in engineering. Ability to apply knowledge of linear algebra; geometry; differential geometry; differential and integral calculus; differential equations; numerical methods; numeric algorithm; statistics and optimization

Year: <b>2nd</b>	Course code: <b>9966002208</b>	Course: <b>Material Strength and Elasticity</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Introduction to the mechanics of continuous media
- Unit 2. Introduction to elasticity
- Unit 3. Material resistance (bending, tension, torsion, deformation)
- Unit 4. Calculation of structures

**Specific competencies:**

- SC7: Understanding of the behavior of structures under stress in service conditions and limit situations.
- SC11: Understanding of technological performance, optimization techniques of materials and material properties change by treatments.
- SC18: Appropriate knowledge applied to engineering of: basics of fluid mechanics; basic principles of flight control and automation; main characteristics and physical and mechanical properties of materials.

Year: <b>2nd</b>	Course code: <b>9966002209</b>	Course: <b>Navigation Systems II</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Introduction to Digital Circuits
- Unit 2. Combinational Circuits
- Unit 3. Sequential Circuits
- Unit 4. Introduction to Digital Systems
- Unit 5. Introduction to Control Theory
- Unit 6. Introduction to Flight Management and Guidance Systems
- Unit 7. Introduction to Radio and its use in Aviation
- Unit 8. Introduction to Aeronautical Navigation Systems

**Specific competencies:**

- SC17: Adequate knowledge and applied to the engineering of: the fundamental elements of the various types of aircraft; the functional elements of the air navigation system and associated electrical and electronic installations; the fundamentals of the design and construction of airports and its various elements.



- SC18. Adequate knowledge and application to the Engineering of the fundamentals of fluid mechanics; the basic principles of flight control and automation; the main characteristics and physical and mechanical properties of the materials.
- SC19. Applied knowledge of: the science and technology of materials; mechanics and thermodynamics; fluid mechanics; aerodynamics and flight mechanics; navigation and air circulation systems; aerospace techno

Year: <b>2nd</b>	Course code: <b>9966002210</b>	Course: <b>History, Practice and Professional Ethics</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. History of Aerospace Engineering. 1.1 Early Aviation. 1.2 World War I. 1.3 Golden Age. 1.4 World War II. 1.5 Cold War and Space Race. 1.6 Current advances and future projects</li> <li>• Unit 2. Ways to practice the profession. 2.1 Job outlook and Career path. 2.2 Aerospace Engineering positions</li> <li>• Unit 3. Engineering Ethics and Deontology. 3.1 Responsibility and engineers. 3.2 Organization and structure of companies from an ethical point of view. 3.3 Deontology of engineering</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC30: Knowing the history of engineering, in its field.</li> <li>• SC31: Knowing the fundamentals of business ethics and corporate social and corporate responsibility</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9966002301</b>	Course: <b>Entrepreneurial Leadership</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Leadership with emotional intelligence</li> <li>• Unit 2. Management of effective teams: organization, motivation and development</li> <li>• Unit 3. Management of offshoring teams: multiculturalism and teleworking</li> <li>• Unit 4. Introduction to selection by competences</li> <li>• Unit 5. Basic negotiation techniques</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC32. Ability for cross-disciplinary work.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9966002302</b>	Course: <b>Aerospace Production and Projects</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Manufacturing processes</li> <li>• Unit 2. Production systems</li> <li>• Unit 3. Metrology</li> <li>• Unit 4. Production management and economy. Quality</li> <li>• Unit 5. Aerospace projects: types and their management</li> <li>• Unit 6. Application to Satellite Design (Carbon fiber manufacturing processes)</li> <li>• Unit 7. Application to Satellite Design (Project Control)</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC12: To understand the manufacturing processes.</li> <li>• SC19: Applied knowledge of: the science and technology of materials, mechanics and thermodynamics, fluid mechanics, aerodynamics and flight mechanics, navigation and air traffic, aerospace technology, theory</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9966002303</b>	Course: <b>Fluid Mechanics II</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Fluid-dynamic lubrication</li> <li>• Unit 2. Introduction to the fluids in porous media</li> <li>• Unit 3. Gas dynamics</li> <li>• Unit 4. liquids in ducts</li> <li>• Unit 5. laminar and turbulent boundary layer</li> <li>• Unit 6. application for the distribution of pressures and forces on the aircraft</li> </ul>						

- Unit 7. computational fluid dynamics. practice advanced on fluid dynamics simulators

**Specific competencies:**

- SC22: Adequate and applied knowledge to engineering field: Fluid mechanics fundamentals that describe the flow in all regimes to determine the pressure and force distributions on aircraft.

Year: <b>3rd</b>	Course code: <b>9966002304</b>	Course: <b>Mechanical and Graphic Design</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Graphic design. Advanced graphic computing. Curves and design surfaces</li> <li>• Unit 2. Mechanical design. Design methods Thermal-structural analysis.</li> <li>• Unit 3. Applications in the field of aeronautical design. Optimization of weight and volume</li> <li>• Unit 4. Application to Satellite Design (Satellite mechanical design)</li> <li>• Unit 5. Fundamentals of ME</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC26: Applied knowledge of: aerodynamics, mechanics, and thermodynamics, flight mechanics, engineering of aircrafts (fixed and rotatory wings), and theory of structures.</li> <li>• SC25: Adequate knowledge and applied to Engineering of: Calculation methods Design and Program Management of aircraft; the use of experimental aerodynamics and the most significant parameters in the theoretical application; the management of experimental techniques, equipment and measuring instruments discipline; the simulation, design, analysis and interpretation of experimental and flight operations; the maintenance systems and certifications of aircraft.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9966002305</b>	Course: <b>Aeronautical Structures</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction to Solid Mechanics and Structures</li> <li>• Unit 2. Beams and frames under Bending and Torsion.</li> <li>• Unit 3. Truss Structures</li> <li>• Unit 4. Thin Wall Structures</li> <li>• Unit 5. Introduction to analysis of details, vibrations and Composite structures analysis</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC20. Adequate and practical knowledge of the fracture mechanics applied to Fracture Mechanics of the Continuum Media, and Dynamic applications, structural stability and aeroelasticity.</li> <li>• SC26. Applied knowledge of aerodynamics, Mechanics, Thermodynamics, Flight Mechanics, Aircraft Engineering (fixed and rotatory wing), structures theory.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9966002306</b>	Course: <b>Air transport</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Institutional framework of civil aviation.</li> <li>• Unit 2. Evaluation and operation of transport aircraft</li> <li>• Unit 3. Operation of Air transport</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC9: To understand the air navigation system as a whole and the complexity of the air traffic</li> <li>• SC13: To understand the uniqueness of infrastructure, building and operation of airports.</li> <li>• SC14: To understand the air transportsystem and its coordination with other modes of transport</li> <li>• SC19: Applied knowledge of: the science and technology of materials, mechanics and thermodynamics, fluid mechanics, aerodynamics and flight mechanics, navigation and air traffic, aerospace technology, theory of structures, air transport, economy and production projects; impact on environment.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9966002307</b>	Course: <b>Flight Mechanics</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1: Revision of Aerodynamics</li> </ul>						

- Unit 3: Dynamic stability and control. Handling Qualities
- Unit 4: Revision of Propulsion
- Unit 5: Aircraft performance
- Unit 6: Flight simulation

**Specific competencies:**

- SC23: Adequate knowledge and applied to Engineering of: Flight physical phenomena, flight characteristics and control, aerodynamics forces, propulsive forces, performances, and stability.
- SC24: Adequate knowledge and applied to Engineering of: aircraft systems, and automatic flight control systems of aerospace vehicles.
- SC25: Adequate knowledge and applied to Engineering of: Calculation methods Design and Program Management of aircraft; the use of experimental aerodynamics and the most significant parameters in the theoretical application; the management of experimental techniques, equipment and measuring instruments discipline; the simulation, design, analysis and interpretation of experimental and flight operations; the maintenance systems and certifications of aircraft.
- SC26: Applied knowledge of: aerodynamics, mechanics, and thermodynamics, flight mechanics, engineering of aircrafts (fixed and rotatory wings), and theory of structures

Year: <b>3rd</b>	Course code: <b>9966002308</b>	Course: <b>Space Vehicles and Miissiles</b>	Program: <b>Bachelor´s Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Introduction to space vehicles
- Unit 2. Mission Analysis
- Unit 3. Space environment
- Unit 4. Astrodynamics
- Unit 5. Spacecraft systems engineering
- Unit 6. Launch Vehicles and Missiles

**Specific competencies:**

- SC24: Adequate knowledge and applied to Engineering of: aircraft systems, and automatic flight control systems of aerospace vehicles.
- SC25: Adequate knowledge and applied to Engineering of: Calculation methods Design and Program Management of aircraft; the use of experimental aerodynamics and the most significant parameters in the theoretical application; the management of experimental techniques, equipment and measuring instruments discipline; the simulation, design, analysis and interpretation of experimental and flight operations; the maintenance systems and certifications of aircraft.

Year: <b>3rd</b>	Course code: <b>9966002309</b>	Course: <b>Maintenance and Certification of Aerospace Vehicles</b>	Program: <b>Bachelor´s Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Commissioning of aircraft
- Unit 2. Certification of airworthiness
- Unit 3. Software certification of vehicle systems
- Unit 4. Maintenance of aerospace vehicles
- Unit 5. Fatigue and tolerance to failure

**Specific competencies:**

- SC21: Adequate and applied knowledge to engineering field: Fundamentals of sustainability, maintainability, and operability of aerospace vehicles.
- SC25: Adequate knowledge and applied to Engineering of: Calculation methods Design and Program Management of aircraft; the use of experimental aerodynamics and the most significant parameters in the theoretical application; the management of experimental techniques, equipment and measuring instruments discipline; the simulation, design, analysis and interpretation of experimental and flight operations; the maintenance systems and certifications of aircraft

Year: <b>3rd</b>	Course code: <b>9966002310</b>	Course: <b>Aerodynamics</b>	Program: <b>Bachelor´s Degree in Aerospace Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Aerodynamics Forces and Moments
- Unit 2. Velocity field, lift and drag
- Unit 3. Fundamentals of Computational Fluid Dynamics

**Specific competencies:**

- SC22: Adequate and applied knowledge to engineering field: Fluid mechanics fundamentals that describe the flow in all regimes to determine the pressure and force distributions on aircraft.
- SC25: Adequate knowledge and applied to Engineering of: Calculation methods Design and Program Management of aircraft; the use of experimental aerodynamics and the most significant parameters in the theoretical application; the management of experimental techniques, equipment and measuring instruments discipline; the simulation, design, analysis and interpretation of experimental and flight operations; the maintenance systems and certifications of aircraft.
- SC26: Applied knowledge of: aerodynamics, mechanics, and thermodynamics, flight mechanics, engineering of aircrafts (fixed and rotatory wings), and theory of structures.

Year: <b>4th</b>	Course code: <b>9966002401</b>	Course: <b>Aeroelasticity and Vibrations</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Vibrations
- Unit 2. Static aeroelasticity
- Unit 3. Dynamic aeroelasticity

**Specific competencies:**

- SC20: Adequate and practical knowledge of the fracture mechanics applied to Fracture Mechanics of the Continuum Media, and Dynamic applications, structural stability and aeroelasticity.
- SC22: Adequate and applied knowledge to engineering field: Fluid mechanics fundamentals that describe the flow in all regimes to determine the pressure and force distributions on aircraft.
- SC25: Adequate knowledge and applied to Engineering of: Calculation methods Design and Program Management of aircraft; the use of experimental aerodynamics and the most significant parameters in the theoretical application; the management of experimental techniques, equipment and measuring instruments discipline; the simulation, design, analysis and interpretation of experimental and flight operations; the maintenance systems and certifications of aircraft.
- SC26: Applied knowledge of: aerodynamics, mechanics, and thermodynamics, flight mechanics, engineering of aircrafts (fixed and rotatory wings), and theory of structures.

Year: <b>4th</b>	Course code: <b>9966002402</b>	Course: <b>Propulsion Systems</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Generalities. Shock waves. Nozzles.
- Unit 2. Thrust generation
- Unit 3. Introduction to alternative engines
- Unit 4. Introduction to jet engines. aeronautics and gas turbine design basics
- Unit 5. Resolution of problems of use, selection and performance of components.
- Unit 6. Introduction to rocket engines. Fundamentals of rocket engines and micro-rocket engines.

**Specific competencies:**

- SC8: To understand thermodynamics cycles for mechanic power generation and thrust.
- SC16: Appropriate knowledge applied to engineering of: concepts and laws that manage the processes of energy transfer, the movement of fluids, the mechanisms of heat transfer and mass exchange, and their influence on main systems of aerospace propulsion.
- SC18: Appropriate knowledge applied to engineering of: basics of fluid mechanics; basic principles of flight control and automatitation; main characteristics and phisical and mechanical properties of materials.
- SC19: Applied knowledge of: the science and technology of materials, mechanics and thermodynamics, fluid mechanics, aerodynamics and flight mechanics, navigation and air traffic, aerospace technology, theory of structures, air transport, economy and production projects; impact on environment.

Year: <b>4th</b>	Course code: <b>9966002403</b>	Course: <b>Aircraft Design</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 0; Geometric Design of aircraft
- Unit 1 Transport and protection of the payload function
- Unit 2 Lift generation function
- Unit 3 Ground interface function
- Unit 4 Stability and control function of the aircraft
- Unit 5 Propulsive function
- Unit 6 Distribution of energy and fluids function
- Unit 7 Synthesis of aircraft configuration
- Unit 8 Helicopters and unmanned aircraft. Autonomous aircraft

**Specific competencies:**

- SC24: Adequate knowledge and applied to Engineering of: aircraft systems, and automatic flight control systems of aerospace vehicles.
- SC25: Adequate knowledge and applied to Engineering of: Calculation methods Design and Program Management of aircraft; the use of experimental aerodynamics and the most significant parameters in the theoretical application; the management of experimental techniques, equipment and measuring instruments discipline; the simulation, design, analysis and interpretation of experimental and flight operations; the maintenance systems and certifications of aircraft.
- SC26: Applied knowledge of: aerodynamics, mechanics, and thermodynamics, flight mechanics, engineering of aircrafts (fixed and rotatory wings), and theory of structures.

Year: <b>4th</b>	Course code: <b>9966002404</b>	Course: <b>Satellite Design</b>	Program: <b>Bachelor's Degree in Aerospace Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Types of satellite</li> <li>• Unit 2. Materials and Structures</li> <li>• Unit 3. Thermal Control</li> <li>• Unit 4. Mechanisms</li> <li>• Unit 5. Control</li> <li>• Unit 6. Propulsion in space</li> <li>• Unit 7. Power subsystems</li> <li>• Unit 8. Communications (antennas)</li> <li>• Unit 9. Tests</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC27: Ability to design satellites</li> </ul>						

<b>4</b>	<b>9966002803</b>	<b>Aerospace Production Systems</b>	<b>Semestre 1 / Fall Term (Sept - Jan)</b>		<b>English</b>	<b>6</b>
<b>4</b>	<b>9966002809</b>	<b>Multidisciplinarity II</b>	<b>Annual / Full year</b>		<b>English</b>	<b>6</b>

## Bachelor's Degree in Fundamentals of Architecture (English+Spanish)

Year: <b>1st</b>	Course code: <b>9956001101</b>	Course: <b>Applied Mathematics</b> ( <i>Matemáticas aplicadas</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P652001101</b>	Course: <b>Applied Mathematics</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Systems of equations, matrices and determinants. 1.1: Matrices and determinants. 1.2: System of LE and their applications. 1.3: Linear applications.
- Unit 2. Geometry of the plane and space. 2.1: Geometry of the plane and space. 2.2: Conics.
- Unit 3. Fundamentals of differential calculus in one and several variables. 3.1: Function of a real variable. 3.2: Functions of two or more variables. 3.3: Derivatives and concept of differentials. Optimization. 3.4: Partial derivatives. Gradient vector. Directional derivative. Plane tangent and normal straight.
- Unit 4. Fundamentals of integral calculus in several variables. 4.1: Integration methods. 4.2: Integration applications. 4.3: Calculation of multiple integrals. Coordinate systems (cartesian, cylindrical, spherical). 4.4: Applications of multiple integrals.
- Unit 5. Elements of discrete mathematics, descriptive statistics, linear programming. 5.1: Elements of discrete mathematics. 5.2: Introduction to descriptive statistics. 5.3: Optimization with linear programming

**Specific competencies:**

- SC11: Applied knowledge of numerical calculus, analytic and differential geometry, and algebraic methods.

Year: <b>1st</b>	Course code: <b>9956001102</b>	Course: <b>Communication skills</b> ( <i>Habilidades comunicativas</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P652001102</b>	Course: <b>Communication skills</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Communication in Architecture. 1.1/Introduction to basic concepts. Architecture essays/critical texts. 1.2. Verbal Communication Oral: public presentations; visual communication, how to use images in architectural communication. 1.3. The experience of architecture: The trip, perceptive and material values
- Unit 2. Communication and creativity. 2.1. Creative techniques in communication. 2.2. Research and creative development in competitions, role games...etc

**Specific competencies:**

- SC4. Communicative skills in native language (either by oral or written means) and in English, according to the ideology of the European University of Madrid, any concept or specification proper to the development of the regulated profession of Architect. This will include learning the specific vocabulary of the degree. This includes the ability to manage information.

Year: <b>1st</b>	Course code: <b>9956001103</b>	Course: <b>Introduction to contemporary Architecture and Art</b> ( <i>Introducción al arte y la arquitectura contemporánea</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P652001103</b>	Course: <b>Introduction to contemporary Architecture and Art</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Nature and Technology in Contemporary Architecture. 1.1. Introduction to general concepts: Nature, Technology, Materiality . 1.2. The relation between Architecture and Nature. 1.3. The relation between Architecture and Technology</li> <li>Unit 2. Symbolism, Function and Time in Contemporary Architecture . 2.1. The relation between Architecture and Symbolism . 2.2. The relation between Architecture and Functionality. 2.3. The relation between Architecture and Time (pavilions, temporary structures...)</li> <li>Unit 3. Contemporary Art. 3.1. Space and Territory. Art and Architecture. 3.2. Art, and Activism / Gender, Body and Sexuality . 3.4. Cultural Industry and moving image</li> </ul>						
<b>Specific competences:</b>						
<ul style="list-style-type: none"> <li>SC48: Adequate knowledge of the general theories of form, composition and architectural types.</li> <li>SC54: Adequate knowledge of aesthetics and theory and history of fine arts and applied arts.</li> </ul>						

Year: <b>1st</b>	Course code: <b>9956001104</b>	Course: <b>Architectural Drawing (<i>Dibujo arquitectónico</i>)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P652001104</b>	Course: <b>Architectural Drawing</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 0: Introduction to architectural drawing: language and representation systems. The student is immersed in a specific graphic world. It recognizes the representation systems, makes its own the graphic elements that make the drawing understandable (dimensions, scale, graphic scale, etc.). Directed research on authors and ways of representing is proposed.</li> <li>Unit 1: CAD: basic coordinate layouts. 1.1: CAD: basic coordinate layouts.. 1.2: CAD: Basics edition operations. 1.3: CAD: Basics edition operations in architectural drawing</li> <li>Unit 2: Architecture Drawing I. - Drawing of the building: site-urban, Plan-elevation, Section. 2.1: Plans in architecture drawing. 2.1: Section in architecture drawing. 2.3: Stairs section. 2.4: Layout / layers</li> <li>Unit 3: Architecture Drawing II. - Integration of architectural representation techniques. Graphic narration of the project. 3.1: Basic housing / site-urban. 3.2: Basic housing / floors and elevations. 3.3: Basic housing / sections</li> <li>Unit 4: Architecture Drawing III. - Integration of architectural representation techniques. Graphic narration of the project. 4.1: Housing / plans. 4.2: Housing / site-urban. 4.3: Housing / sections-elevations</li> <li>Unit 5: Portfolio. - Layout: image, color and typography</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC01 Ability to apply graphic procedures to the representation of spaces and objects</li> </ul>						

Year: <b>1st</b>	Course code: <b>9956001105</b>	Course: <b>Integrated Drawing Workshop (<i>Taller de dibujo integrado</i>)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P652001105</b>	Course: <b>Integrated Drawing Workshop</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Analysis and theory of form, color and light. The unit has an initiatory but relevant character. The analysis of the environment and its understanding is proposed, through the decomposition of its complexity. It is approached through techniques of drawing, color, collage, and others of an immediate nature and strong expressiveness</li> </ul>						

- Unit 2. Image: composition, transformation, treatment and retouching. The application and understanding of the basic principles of visual, graphic and compositional language is worked on morphology, basic figures, structures, balance, proportion, harmony, typography, composition, transformation, color, image treatment, photography, retouching.
- Unit 3. The vector drawing: illustration. This unit addresses the transition from expressive sketch to graphic production. Always starting from mixed techniques, graphic production for the web and print is approached. Concepts related to color, texture, typography, etc ... are related.
- Unit 4-Graphic narration and composition: integration of techniques and concepts / layout. The work in units 1 to 3, even though it is not isolated, is integrated to give meaning to the graphic project. The use of all the acquired resources is proposed, deepening their knowledge and integrating them in the layout.
- Unit 5. Document / portfolio integration. The course closes with the preparation of a portfolio with the course activities. The material is readjusted to give the document graphic unity. The student is introduced to the concept of portfolio as a reflection of his background and trajectory.

**Specific competencies:**

- SC2: Ability to conceive and represent visual attributes to objects and master proportions and drawing techniques, including computer drawing applications.
- SC4: Knowledge of the analysis and theory of forms and laws of visual perception adapted and applied to architecture and urbanism.

Year: <b>1st</b>	Course code: <b>9956001106</b>	Course: <b>Process Physics</b> ( <i>Física de los procesos</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P652001106</b>	Course: <b>Process Physics</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Introduction. 1.1. Introduction to Physics. 1.2. Experimental physics and error calculation
- Unit 2. Kinematics and Dynamics. 2.1. Kinematics and Dynamics. 2.2. Work, Energy and Power. 2.3. Fluid statics. 2.4. Fluid Dynamics. Application in pipelines.
- Unit 3. Waves. 3.1. Oscillations and Waves: definition and properties. 3.2. Sound and Acoustics
- Unit 4. Thermodynamics. 4.1. Temperature and heat. Thermal and elastic properties of matter. 4.2. Heat transfer. 4.3. Thermal machines. (Refrigerators and heat pumps)
- Unit 5. Electricity and Magnetism. 5.1. Principles of electromagnetism

**Specific competencies:**

- SC7: Adequate knowledge and applied to architecture and urbanism of the principles of general mechanics, statics, mass geometry, and vector and tensor fields.
- SC8: Adequate knowledge applied to architecture and urbanism of the principles of thermodynamics, acoustics and optics.
- SC9: Adequate knowledge applied to architecture and urban planning of the principles of Fluid mechanics, hydraulics, electricity and electromagnetism

Year: <b>1st</b>	Course code: <b>9956001107</b>	Course: <b>Construction I: Systems</b> ( <i>Construcción I. Sistemas</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P652001107</b>	Course: <b>Construction I: Systems</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. 1.1. Introduction to building. Elements, systems and functions. 1.2. Building and construction systems determinants. 1.3 Materials and construction process. 1.4. Modulation. 1.5. Prefabrication
- Unit 2. 2.1. Foundations. 2.2. Structures. 2.3. Envelopes. 2.4. Roofs. 2.5. MEP. 2.6. Interior spaces

**Specific competencies:**

- SC12: Ability to conceive, calculate, design, integrate buildings and urban units and execute building foundations.



- SC18: Ability to conceive, calculate, design, integrate in buildings and urban units and execute interior partition walls, carpentry, stairs and other finished work.
- SC19: Ability to conceive, calculate, design, integrate in buildings and urban units and execute exterior walls and cladding, roofing and other structural work.
- SC25: Knowledge of conventional building systems and their pathologies.
- SC28: Knowledge of the code of ethics, the structure of the profession, the organisation of the professional association, and civic responsibility.

Year: <b>1st</b>	Course code: <b>9956001108</b>	Course: <b>Urban Development Basics</b> ( <i>Bases de la urbanística</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>1st</b>	Course code: <b>P652001108</b>	Course: <b>Urban Development Basics</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Content/Units:**

- Unit 1. City history. 1.1. Urban processes: time and place. 1.2. Evolutionary concepts: the urban pre-history, the adjustment to the context and other training parameters, Extension vs. Urban reform, Utopia and Planning. The consolidated urban fabrics. 1.3. Planned intervention models: the understanding of the contemporary urban fact.
- Unit 2. Urban developments basics. 2.1. Knowledge and interpretation of the physical environment (biotic and abiotic). 2.2. Knowledge and interpretation of the human environment, sociology and urban economy. 2.3. Use, construction and transformation of the city and the urban space: groups and social relations. 2.4. Ecology (physical geography): the ecological sense of the form and situation of cities. 2.5. City, parts, public space: the scales of the phenomenon and urban planning. 2.6. Urban morphology: forms of growth, elements and urban parameters. Urban uses and functions: analysis and understanding.

**Specific competencies:**

- SC10. Knowledge of basic topography, hypsometry, mapping and earthmoving techniques, adapted and applied to architecture and urbanism.
- SC51. Adequate knowledge of the methods for studying social needs, quality of life, habitability and basic housing programmes.
- SC52. Adequate knowledge of ecology, sustainability and the principles of conservation of energy and environmental resources.
- SC53. Adequate knowledge of the architectural, urban and landscaping traditions of western culture, as well as their technical, climatic, economic, social and ideological foundations.
- SC57. Adequate knowledge of urban sociology, theory, economics and history

Year: <b>1st</b>	Course code: <b>9956001109</b>	Course: <b>Architectural Geometry</b> ( <i>Geometría arquitectónica</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>1st</b>	Course code: <b>P652001109</b>	Course: <b>Architectural Geometry</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Content/Units:**

- Unit 1: CAD drawing with Rhinoceros. Interface and basic tools. Delineated small models. Scale control and printing.. 1.1 CAD of simple models. Workshop format, presentation and public-collective correction.
- Unit 2: Architectural geometric analysis. Operations in 2 and 3 dimensions and its projection on the plane. Analysis of geometric concepts in buildings. Integration of architectural representation techniques. Graphic narration of the project.
- Unit 3: Architectural geometric analysis with parametric systems. Operations in 2 and 3 dimensions of parametric form and its projection on the plane. Analysis of geometric concepts in buildings. Integration of architectural representation techniques. Graphic narration of the project.
- Unit 4: Integration of the knowledge acquired in a project. Operations in 2 and 3 dimensions of parametric form and its projection on the plane. Analysis of geometric concepts in buildings. Integration of architectural representation

techniques. Graphic narration of the project. Integrates knowledge of physical modeling and digital manufacturing through CNC cutting to an architectural graphic model using the same language

- Unit 5: Portfolio. - Layout: image, color and typography

**Specific competencies:**

- SC01 Ability to apply graphic procedures to the representation of spaces and objects.
- SC05 Knowledge of metric and projective geometry adapted and applied to architecture and urbanism.

Year: <b>1st</b>	Course code: <b>9956001110</b>	Course: <b>Integrated Drawing Workshop II</b> ( <i>Taller de dibujo integrado II</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>1st</b>	Course code: <b>P652001110</b>	Course: <b>Integrated Drawing Workshop II</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Content/Units:**

- Unit 1: Analysis and representation of the Project. 1.1. Analysis. Sketch, sketch and concept mockup. 1.2. Architectural definition. 2D. 1.3. Architectural definition. 3D. 1.4. Construction Analysis. 2D-3D . 1.5. Model construction 3D. 1.6. Preparation of the synthesis document. Layout
- Unit 2: Proposal and representation of the idea. Graphic and technical development.. 2.1. Analysis. Proposal. References, sketch and concept mockup.. 2.2. Proposal. Technical definition. 2D CAD. 2.3. Proposal. Technical definition. 3D CAD. 2.4. Proposal. Model construction 3D. 2.5 Proposal. Study of constructive development. Materials. 2D-3D
- Unit 3: Portfolio. - Layout: image, color and typography. 3.1. Preparation of a graphic and audiovisual portfolio with the course exercises. Workshop format, presentation and public-collective correction.

**Specific competencies:**

- SC01. Ability to conceive and represent visual attributes of objects and master proportions and drawing techniques, including computer drawing applications.
- SC03. Knowledge of spatial representation systems adapted and applied to architecture and urbanism.
- SC04. Knowledge of the analysis and theory of forms and laws of visual perception adapted and applied to architecture and urbanism.

Year: <b>2nd</b>	Course code: <b>9956001201</b>	Course: <b>Construction II: Materials</b> ( <i>Construcción II. Materiales</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>2nd</b>	Course code: <b>P652001201</b>	Course: <b>Construction II: Materials</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Content/Units:**

- Unit 1: Theory of materials. Lectures. 1.1. Introduction: history and concept of building materials. 1.2. Families of materials. Properties of materials. 1.3. Lesson 3: Stone I: Properties and types; Wood II: Formats; Wood III: Finishes. 1.4. Wood I: Species and II: Shapes and Finishes. 1.5: Ceramics I. Properties and types II. Formats. 1.6: Metals I: Properties. Metals II: Steel Metals III: Aluminum. Metals IV: Formats. 1.7: Binders. Cements, Limes and Plasters. 1.8: Concrete I: Composition and properties. Concrete II: Types and textures. 1.9: Glass. 1.10: Synthetic materials. 1.11: Insulating Materials. Paints, adhesives, sealants and bituminous materials. 1.12: Other materials, fibers, composites and new materials.
- Unit 2: Laboratory Tests. 2.1. Laboratory session group 1: ceramic-based materials.. 2.2. Laboratory session group 2: metal-based materials. 2.3. Laboratory session group: polymeric-based materials
- Unit 3: Research Project. 3.1. Project 01: Applied materials. 3.2. Project 02: Creation of a hybrid or composite material.

**Specific competencies:**

- SC24: Adequate knowledge of solid, continuum and soil mechanics, as well as plastic and elastic qualities and strength of materials in heavy construction.
- SC26: Adequate knowledge of the physical and chemical characteristics, production procedures, pathology and use of building materials.

Year: <b>2nd</b>	Course code: <b>9956001202</b>	Course: <b>Structural Mechanics</b> ( <i>Mecánica de estructuras</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P652001202</b>	Course: <b>Structural Mechanics</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Note:** course recommended **only for Civil Engineering students**

**Content/Units:**

- Unit 1- Structural concept. 1.1. What is structures and structural requirements.. 1.2. Forces and moments. Centroids. Resultant-Reaction.
- Unit 2- Equilibrium and stability. 2.1: Equilibrium of rigid solid. Reactions. Supports. Stability: overturning, subsidence, sliding and lifting. 2.2: Structure composed by bars. Joints. Determinancy. 2.3: Archs and cables. Funiculars and force poligons.
- Unit 3- Internal forces. 3.1: Truss, Triangulated structures. Internal forces. 3.2: Internal forces on beams, uneven beams and frames.
- Unit 4- Dimensioning/Design of sections. 4.1: Introduction to transversal section behaviour. Materials. Stresses.
- Unit 5- Structure models. 5.1: Geometric and analytical model. 5.2: Loads and loads distribution.

**Specific competencies:**

- SC7: Knowledge of the principles of general mechanics, statics, mass geometry, vector and tensor fields, all adapted and applied to architecture and urbanism.
- SC24: Knowledge of solid, continuum and soil mechanics, as well as plastic and elastic qualities and strength of materials in heavy construction.

Year: <b>2nd</b>	Course code: <b>9956001203</b>	Course: <b>Architecture and Art of the 20th and 21st Centuries</b> ( <i>Arquitectura y arte siglos XX y XXI</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P652001203</b>	Course: <b>Architecture and Art of the 20th and 21st Centuries</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. The avant-garde and Masters of the architecture of the s. XX. Mechanicism and Organicism. 1.1. The Architecture of Steel and the Chicago School. 1.2. Frank Lloyd Wright. 1.3. Adolf Loos. 1.4. Architectural avant-garde movements (Futurism, expressionism, Neoplasticism and Constructivism)
- Unit 2. Project strategies in Architecture from 1919 to 2021. 2.1. The Bauhaus. 2.2. Le Corbusier. 2.3. Mies Van Der Rohe. 2.4. Alvar Aalto, Louis Kahn. 2.5. Radical Architecture and Rem Koolhaas
- Unit 3. The main artistic movements of the 20th and 21st Centuries in connection with architecture. 3.1. The Avant Garde Movements. Abstraction, Revolution and Utopía. 3.2. From Modernity to Postmodernity. 3.3. Postmodernity and turn of the century. From "multiculturalism" to Diversity. The contemporary Scene

**Specific competences:**

- SC48: Adequate knowledge of the general theories of form, composition and architectural types.
- SC49: Adequate knowledge of the general history of architecture.
- SC53: Adequate knowledge of the architectural, urban and landscape traditions of Western culture, as well as its technical, climatic, economic, social and ideological foundations.
- SC54: Adequate knowledge of aesthetics and theory and history of fine arts and applied arts.
- SC57: Adequate knowledge of urban sociology, theory, economics and history

Year: <b>2nd</b>	Course code: <b>9956001204</b>	Course: <b>Integrated Drawing Workshop III</b> ( <i>Taller de dibujo integrado III</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P652001204</b>	Course: <b>Integrated Drawing Workshop III</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1: Mapping project: Analysis of the city
- Unit 2: Mapping project: Creative observation of Site
- Unit 3: Design project: From Ideas fo Models
- Unit 4: Preparation of course portfolio

**Specific competencies:**

- SC2: Ability to conceive and represent the visual attributes of objects and master proportions and techniques of drawing, including computer graphics applications.
- SC3: Knowledge of spatial representation systems adapted and applied to architecture and urbanism.
- SC4: Knowledge of the analysis and theory of forms and laws of visual perception adapted and applied to architecture and urbanism.
- SC6: Knowledge of graphic surveying techniques at all stages, from sketches to scientific restoration, adapted and applied to architecture and urbanism.
- SC10: Knowledge of basic topography, hysometry, mapping and earthmoving techniques

Year: <b>2nd</b>	Course code: <b>9956001205</b>	Course: <b>Design Workshop G1 (Taller de proyectos G1)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P652001205</b>	Course: <b>Design Workshop G1</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Understanding the concepts related to an architectural project and its elaboration process.
- Unit 2. Critically analysing case studies and examples.
- Unit 3. Being able to build a discourse around their project.
- Unit 4. Integrating coherent graphic and theoretical content.
- Unit 5. Creating an architectural project based on a reality as well as received concepts.
- Unit 6. Handling graphic and theoretical tools to express architectural ideas.
- Unit 7. Understanding the implications of an architectural project, combining experiment and commitment.
- Unit 8. Creating a global document of the Project

**Specific competencies:**

- SC50: Adequate knowledge of the methods of study of symbolization processes, practical functions and ergonomics.
- SC55: Adequate knowledge of the relationship between cultural patterns and the social responsibilities of the architect.

Year: <b>2nd</b>	Course code: <b>9956001206</b>	Course: <b>Conditioning Techniques (Técnicas de acondicionamiento)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P652001206</b>	Course: <b>Conditioning Techniques</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Psychrometry
- Unit 2. Building insulation
- Unit 3. Ventilation
- Unit 4. Limiting energy demand and consumption
- Unit 5. Heating and cooling calculation
- Unit 6. Heating, cooling, air conditioning
- Unit 7. Insulation and acoustic conditioning

- Unit 8. Natural and artificial lighting

**Specific competencies:**

- SC8: Adequate knowledge of thermodynamics, acoustics and optics applied to architecture and Urbanism
- SC22: Be able to design electrical construction and urban services, audiovisual communication, artificial lighting installations and acoustic systems.
- SC35: Be able to solve passive thermal conditioning, including insulation Thermal and acoustic, climate control, energy efficiency and natural lighting

Year: <b>2nd</b>	Course code: <b>9956001207</b>	Course: <b>Structural Analysis</b> ( <i>Análisis de estructuras</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>2nd</b>	Course code: <b>P652001207</b>	Course: <b>Structural Analysis</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Note:** course recommended only for Civil Engineering students

**Content/Units:**

- Unit 1: Sizing by Resistance
- Unit 2: Sizing by Rigidity
- Unit 3: Hyperstatic structures, Elastic analysis methods
- Unit 4: Hyperstatic structures, Plastic analysis methods
- Unit 5: Structural regulations. Loads, Safety Coefficients and Materials. Models of one way/two way structures. Vertical and horizontal loads
- UA6: Large span structures. Shape. Great heights
- Unit 7. Examples of Works

**Specific competencies:**

- SC13: Ability to apply technical and construction standards and regulations.
- SC17: Ability to conceive, calculate, design, integrate buildings and urban units and execute building structures.
- SC24: Adequate knowledge of solid, continuum and soil mechanics, as well as plastic and elastic qualities and strength of materials in heavy construction.

Year: <b>2nd</b>	Course code: <b>9956001208</b>	Course: <b>Urban Areas and Sustainable Design</b> ( <i>Áreas urbanas y diseño sostenible</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>2nd</b>	Course code: <b>P652001208</b>	Course: <b>Urban Areas and Sustainable Design</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Content/Units:**

- Unit 1. Decoding the neighborhoods. 1.1. Buildings and plots. 1.2. Plots and apples. 1.3. Apples and streets.
- Unit 2. Neighborhood with Leitmotif. 2.1. Analysis of Eco-neighborhoods. 2.2. Free spaces: complexity and urban meaning.. 2.3. Geometry of the street system. Types of public space networks. Relationship with the building. 2.4. Proximity mobility. Rationalize the use of private vehicles. 2.5. Residence + uses with centrality. Relationship with pedestrian and cycling routes
- Unit 3. Sustainable Urban Regeneration II. The built space. 3.1. Superblocks and building types. 3.2. The space between buildings (public and private). Relations between buildings and ground floor. Spaces for social cohesion. 3.3. Sustainable urban design strategies on the superblock scale. 3.4. Co-design and social participation in urban regeneration. 3.5. Evaluation of sustainability indicators for the improvement of urban metabolism and social cohesion.
- Unit 4. Public + sustainable space. Society / environment / economy / Governance. 4.1. Stay situations and diversity. 4.2. Elements to generate habitability conditions. 4.3. Improvement proposals

**Specific competencies:**

- CE35. Ability to solve passive environmental conditioning, including thermal and acoustic insulation, climate control, energy efficiency and natural lighting.
- CE38. Ability to design, put into practice and develop urban projects.

- CE40. Ability to develop functional programs for buildings and urban spaces
- CE42. Ability to exercise architectural criticism.
- CE46. Ability to apply urban planning regulations and ordinances.
- CE47. Ability to carry out environmental, landscaping and environmental impact correction studies.

Year: <b>2nd</b>	Course code: <b>9956001209</b>	Course: <b>Integrated Drawing Workshop IV</b> <i>(Taller de dibujo integrado IV)</i>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P652001209</b>	Course: <b>Integrated Drawing Workshop IV</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Artificial Intelligence
- Unit 2. Volumetries, textures, backgrounds
- Unit 3. Architectural programs
- Unit 4. Postproduction and document development

**Specific competencies:**

- CE2: Ability to conceive and represent the visual attributes of objects and master proportions and techniques of drawing, including computer graphics applications.
- CE3: Knowledge of spatial representation systems adapted and applied to architecture and urbanism.
- CE4: Knowledge of the analysis and theory of forms and laws of visual perception adapted and applied to architecture and urbanism.
- CE6: Knowledge of graphic surveying techniques at all stages, from sketches to scientific restoration, adapted and applied to architecture and urbanism.
- CE10: Knowledge of basic topography, hysometry, mapping and earthmoving techniques

Year: <b>2nd</b>	Course code: <b>9956001210</b>	Course: <b>Design Workshop G2</b> <i>(Taller de proyectos G2)</i>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P652001210</b>	Course: <b>Design Workshop G2</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Mapping and Ideas development
- Unit 2. Project. 2.1. Concept model and sketch. 2.2. Final model and proposal development. 2.3. Final drawings
- Unit 3. Portfolio

**Specific competencies:**

- CE37: Capacity for the conception, practice and development of projects basic and execution, sketches and preliminary projects.
- CE38: Capacity for the conception, practice and development of Urban projects Urban.
- CE40: Capacity to develop functional programmes for buildings and Urban spaces Urban.
- CE42: Capacity to practice architectural criticism
- CE48: Adequate knowledge of general theories of form, composition and architectural types.
- CE51: Adequate knowledge of needs assessment methods social, quality of life, livability and basic programmes of housing

Year: <b>3rd</b>	Course code: <b>9956001301</b>	Course: <b>Building Facilities</b> <i>(Instalaciones en la edificación)</i>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P652001301</b>	Course: <b>Building Facilities</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Introduction to building services
- Unit 2. Cold water supply systems
- Unit 3. Hot water supply systems and solar panels
- Unit 4. Drain-waste-ventilation systems
- Unit 5. Fire security – life safety
- Unit 6. Electrical supply systems

**Specific Competencies:**

- CE9. Appropriate knowledge applied to the architecture and urbanism of the principles of fluid mechanics, hydraulic, electricity and electromagnetism.
- CE13. Aptitude to apply the technical and structural regulations.
- CE20. Capacity to conceive, calculate, design and integrate in buildings and urban compounds and undertake the installations for supply, treatment and evacuation of water, heating and airconditioning.
- CE23. Capacity to preserve installations.
- CE31. Knowledge of measurement, assessment and valuation methods.
- CE37. Capacity to conceive, perform and develop basic and performance projects, sketches and drafts.
- CE52. Adequate knowledge of ecology, sustainability and preservation of energetic and environmental resources

Year: <b>3rd</b>	Course code: <b>P652001302</b>	Course: <b>Business Management (<i>Gestión empresarial</i>)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1 Marketing. 1.1. Marketing. Strategic Planning I. 1.2. Strategic Planning II. Positioning and segmentation. 1.3. Competitive advantage. 1.4. Entrepreneur and personal Brand
- Unit 2 Operations. 2.1. The company. Organization. 2.2. Human capital. Management and decision-making. 2.3. Leadership and motivation
- Unit 3. Introduction to Finance. 3.1. The financial objective of the company. 3.2. Economic and financial analysis of the company. 3.3. Budget planning. 3.4. Project evaluation.
- Unit 4. Introduction to the legal framework. 4.1. The company. Legal forms. 4.2. Introduction to the real estate legal framework. 4.3. Public tenders process

**Specific Competencies:**

- CE 28: Knowledge of ethics, collegial organisation, professional structure and liability.
- CE 29: Knowledge of administrative and management procedures and professional processing.
- EC 30: Knowledge of the organisation of professional offices.
- CE 33: Knowledge of real estate management and management.
- CE 55: Adequate knowledge of the relationship between cultural patterns and responsibilities social of the architect.
- CE 59: Knowledge of civil, administrative, urban, building and industry related to professional performance.

Year: <b>3rd</b>	Course code: <b>9956001303</b>	Course: <b>Urban Planning (<i>Ordenación de la ciudad</i>)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P652001303</b>	Course: <b>Urban Planning</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1.- Introduction to planning at a neighborhood scale. 1.1. The base plan as an introduction to planning. 1.2- Concepts of urban planning at the neighborhood scale.
- Unit 2.- Introduction to city planning (municipality). 2.1. Basic concepts of general planning of a municipality. The Land Law as an instrument.

**Specific competencies:**

- CE38. Ability to design, put into practice and develop urban projects.
- CE40. Ability to develop functional programs for buildings and urban spaces
- CE45. Ability to design and execute urban layouts and town planning, gardening and landscape projects.
- CE46. Ability to apply urban planning regulations and ordinances.
- CE55. Adequate knowledge of the relationship between cultural patterns and the social responsibilities of the architect.
- CE57. Adequate knowledge of urban sociology, theory, economics and history.
- CE58. Adequate knowledge of the methodological foundations of territorial, metropolitan and town planning.
- CE62. Knowledge of the mechanisms of drafting and managing urban planning on any scale

Year: <b>3rd</b>	Course code: <b>P652001304</b>	Course: <b>Integration Workshop I (Taller de integración I)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	6
<p><b>Note:</b> eventhough the language of instruction of the workshop is Spanish, some teachers may attend in English the non spanish speakers</p> <p><b>Content/Units:</b></p> <p>The subject, coordinated and integrated with Design Workshop G3, is taught in the workshop mode in which students rehearse and exercise one of the basic and fundamental aspects of the architectural profession: the integration of architectural design with the different areas of knowledge such as structures, construction, building facilities and urban space.</p> <ul style="list-style-type: none"> <li>• Unit 1. The Program</li> <li>• Unit 2. The place</li> <li>• Unit 3. Urban/social integration</li> <li>• Unit 4. Materiality, spatiality, light.</li> <li>• Unit 5. Structural systems and installations.</li> <li>• Unit 6. Expressiveness and Design.</li> <li>• Unit 7. The Work.</li> <li>• Unit 8. Exhibition</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>• CE34: Ability to remove architectural barriers.</li> <li>• CE35: Ability to resolve passive environmental conditioning, including thermal and acoustic insulation, climate control, energy performance and natural lighting.</li> <li>• CE37: Capacity for the conception, practice and development of basic and execution projects, sketches and preliminary projects.</li> <li>• CE38: Capacity for the conception, practice and development of urban projects.</li> <li>• CE40: Ability to develop functional programs for buildings and urban spaces.</li> <li>• CE44: Ability to draft civil works projects.</li> <li>• CE60: Knowledge of feasibility analysis and supervision and coordination of integrated projects</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9956001305</b>	Course: <b>Design Workshop G3 (Taller de proyectos G3)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3rd</b>	Course code: <b>P652001305</b>	Course: <b>Design Workshop G3</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<p><b>Content/Units:</b></p> <ul style="list-style-type: none"> <li>• Unit 1. Readings. Incorporation of concepts and theories especially relevant to understand the different aspects of living</li> <li>• Unit 2. Case analysis. Graphic and conceptual study of different housing references - Projects. Making proposals that respond to different conditions: program, place, context</li> <li>• Unit 3. Critical sessions. Presentation of work done and monographic topics that involve a dialectic between students and between teachers and students</li> <li>• Unit 4. Portfolio. Oriented selection of the most representative Works</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>• CE48. Adequate knowledge of general theories of shape, composition and architectural types.</li> <li>• CE50. Adequate knowledge of the methods of studying the processes of symbolisation, practical functions and ergonomics.</li> </ul>						



- CE51. Adequate knowledge of the methods for studying social needs, quality of life, habitability and basic housing programmes.
- CE55. Adequate knowledge of the relationship between cultural patterns and the social responsibilities of the architect

Year: <b>3rd</b>	Course code: <b>9956001306</b>	Course: <b>Construction III: Structures</b> ( <i>Construcción III. Estructuras</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P652001306</b>	Course: <b>Construction III: Structures</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Frames. 1.1 Frames. General Design. Concepts. Linear Elements. . 1.2 Frames. Details. Steel. Concrete. Sections. Joints.
- Unit 2. Blocks. 3.1 Residential and office blocks. Structural types. Global Stability, Foundations.
- Unit 3. Slabs. 3.1 Slabs. General Design. Concept . 3.2 Slabs. Details Steel. Timber. Concrete. Types. Details.

**Specific competencies:**

- CE12: Ability to conceive, calculate, design, integrate buildings and urban units and execute building foundations.
- CE13: Ability to apply technical and construction standards and regulations
- CE16: Ability to evaluate construction works.
- CE17: Ability to conceive, calculate, design, integrate buildings and urban units and execute building structures

Year: <b>3rd</b>	Course code: <b>9956001307</b>	Course: <b>Structural Dimensioning</b> ( <i>Dimensionado de estructuras</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P652001307</b>	Course: <b>Structural Dimensioning</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Note:** course recommended **only for Civil Engineering students**

**Content/Units:**

- Unit 1. Steel Structures. 1.1: Steel, material, general aspects. 1.2. Bearing and shear design. Deflection. 1.3. Compression sizing. Buckling. 1.4. Design and sizing of joints.
- Unit 2. Timber and masonry structures. 2.1. Timber, material and general aspects. Bearing, shear and axial sizing. Buckling. 2.2. Design and sizing of joints. 2.3. Design and sizing of masonry walls.
- Unit 3. Reinforced concrete structures. 3.1: Concrete, material, general aspects. 3.2: Bending reinforcement.3.3: Shear reinforcement. 3.4: Concrete beams. Curtailment. 3.5: Centred and skewed compression reinforcement.
- Unit 4. Structural floors. 4.1: Structural floor, types and constructive approach. 4.2: Concrete structural floors, uni and bidirectional. 4.3: Steel and timber structural floor.

**Specific competences:**

- CE13: Aptitude to apply the technical and constructive norms.
- CE17: Ability to conceive, calculate, design, integrate into buildings and urban complexes and execute building structures.
- CE24: Adequate knowledge of the mechanics of solids, continuous media and soil, as well as the plastic, elastic and resistance qualities of heavy-duty materials.

Year: <b>3rd</b>	Course code: <b>9956001308</b>	Course: <b>History of Art and Architecture I</b> ( <i>Historia del arte y la arquitectura I</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P652001308</b>	Course: <b>History of Art and Architecture I</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Origins of Art and Architecture .1.1: Basic Concepts on Art. 1.2: Prehistoric Art. 1.3: Egypt and Mesopotamia
- Unit 2. Classic World. 2.1: Greece. 2.2: Rome. 2.3. Other Cultures
- Unit 3. Middle Ages Art and Architecture. 3.1. Early Christians + Byzantium. 3.2. Islam. 3.3: Romanesque Style
- Unit 4. Lower Middle Ages. 4.1: Gothic Style
- Unit 5. Integration of Arts during Renaissance. 5.1: Renaissance

**Specific competencies:**

- CE48: Adequate knowledge of the general theories of form, composition and architectural types.
- CE49: Adequate knowledge of the general history of architecture.
- CE53: Adequate knowledge of the architectural, urban and landscape traditions of Western culture, as well as its technical, climatic, economic, social and ideological foundations.
- CE54: Adequate knowledge of aesthetics and the theory and history of fine arts and applied arts.
- CE57: Adequate knowledge of urban sociology, theory, economics and history.

Year: <b>3rd</b>	Course code: <b>9956001310</b>	Course: <b>Design Workshop G4 (Taller de proyectos G4)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P652001310</b>	Course: <b>Design Workshop G4</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Readings. Incorporation of concepts and theories especially relevant to understand the different aspects of living
- Unit 2. Case analysis. Graphic and conceptual study of different housing references - Projects. Making proposals that respond to different conditions: program, place, context
- Unit 3. Critical sessions. Presentation of work done and monographic topics that involve a dialectic between students and between teachers and students
- Unit 4. Portfolio. Oriented selection of the most representative Works

**Specific competencies:**

- CE37: Capacity for the conception, practice and development of basic and execution projects, sketches and blueprints.
- CE38: Capacity for the conception, practice and development of urban projects.
- CE40: Capacity to develop functional programs for buildings and urban spaces.
- CE42: Capacity to exercise architectural criticism
- CE48: Adequate knowledge of general theories of shape, composition and architectural types.
- CE51: Adequate knowledge of the methods for studying social needs, quality of life, habitability and basic housing programmes.

Year: <b>4th</b>	Course code: <b>P652001401</b>	Course: <b>General English (Inglés General)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1: Vocabulary related to topics of general interest or current affairs
- Unit 2: Practice listening to content presented live or recorded
- Unit 3: Active participation in dialogues and debates on topics of general interest
- Unit 4: Read and comment on journalistic texts or articles written in English that deal with general or current affairs
- Unit 5: The basic keys to a good multimedia presentation in English
- Unit 6: Internet searches and citations run

These units are developed in specific Architecture topics such as: History of Architecture and Design. Achievements; Qualities of an Architect/ Designer. Careers; Description of buildings; Sustainability; Entrepreneurship

**Cross Curricular competence:**

- CCC4: Communicative skills in native language (either orally or in writing) and in English, in accordance with the ideology of the European University of Madrid, any concept or specification specific to the development of the regulated profession of Architecture. This will include learning the specific vocabulary of the degree. This skill includes the ability to manage information.

Year: <b>4th</b>	Course code: <b>9956001402</b>	Course: <b>Construction IV: Envelopes</b> ( <i>Construcción IV. Envolventes</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>4th</b>	Course code: <b>P652001402</b>	Course: <b>Construction IV: Envelopes</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Introduction to building envelope systems .1.1. Envelope functions and performances.1.2. Façades and roofs. Concepts. 1.3. Ground contact. Basement walls and floors
- Unit 2. Heavyweight solutions. 2.1. Heavy Roofs. 2.2. Façades 1. Heavy façades made in situ. 2.3. Openings. Windows. 2.4. Heavy façades. Precast and in situ.
- Unit 3 . Light solutions. 3.1. Light Roofs . Pitched roof. Flat roof decks. Waterproof deck, metal cladding, tiles, and artificial materials. 3.2. Lightweight façades. Light timber frames. Light steel frames. Sheet metal panels. 3.3. Openings in light solutions. Window frames. 3.4. Curtain walls.

**Specific competencies:**

- CE13: Ability to apply technical and construction standards and regulations.
- CE15: Ability to maintain finished work.
- CE16: Ability to evaluate construction works.
- CE19: Ability to conceive, calculate, design, integrate in buildings and urban units and execute exterior walls and cladding, roofing and other structural work.
- CE31: Knowledge of measurement, assessment and survey methods.
- CE32: Knowledge of the on-site health and safety plan.
- CE39: Ability to design, put into practice and develop site management

Year: <b>4th</b>	Course code: <b>P652001404</b>	Course: <b>Project Workshop: City</b> ( <i>Taller de proyecto ciudad</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** eventhough the language of instruction of the workshop is Spanish, some teachers may attend in English the non spanish speakers

**Content/Units:**

- Unit 1. Diagnosis, Objectives, Project Basis and Structure. 1.1: Initial knowledge test. 1.2. Choice of diagnostic pieces. Field work and project objectives. The city project: strategy and structure. Development of interventions.
- Unit 2. Strategic Intervention Consolidated City - Advance. Instruments, Effects, Feasibility, Development. 2.1.: Development of urban interventions. 2.2: Evaluation of proposals, participation and urban indicators. 3.3: Elaboration of the course portfolio

**Specific competencies:**

- CE34 Ability to remove architectural barriers.
- CE35 Ability to solve passive environmental conditioning, including thermal and acoustic insulation, climate control, energy efficiency and natural lighting.
- CE46 Ability to apply urban planning regulations and ordinances.
- CE47 Ability to carry out environmental, landscaping and environmental impact correction studies.
- CE51 Adequate knowledge of the methods for studying social needs, quality of life, habitability and basic housing programmes.
- CE60 Knowledge of feasibility analysis and the supervision and coordination of integrated projects
- CE62 Knowledge of the mechanisms for drafting and managing urban development plans at any scale

Year: <b>4th</b>	Course code: <b>9956001405</b>	Course: <b>Projects Workshop G5</b> ( <i>Taller de proyectos G5</i> )	Program:	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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			<b>Bachelor's Degree in Fundamentals of the Architecture</b>			
Year: <b>4th</b>	Course code: <b>P652001405</b>	Course: <b>Projects Workshop G5</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Mapping and Ideas development</li> <li>Unit 2. Project.</li> <li>Unit 3. Portfolio</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>CE37: Ability to design Basic and Execution projects</li> <li>CE38: Ability to design urban masterplanning.</li> <li>CE40: Ability to produce functional programs of buildings and urban spaces.</li> <li>CE42: Ability to practice criticism of architecture</li> <li>CE48: knowledge of general theories of form, composition and architectural types.</li> <li>CE51: Adequate knowledge of methods of study of social necessities, wellbeing and basic functional arrangements of dwellings.</li> </ul>						

<b>4</b>	<b>P652001406</b>	<b>Technical Systems</b>	<b>Semestre 2 / Spring Term (Jan–Jun)</b>	<b>English</b>	<b>6</b>
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Year: <b>4th</b>	Course code: <b>9956001407</b>	Course: <b>Structural and Foundation Design</b> <i>(Diseño de estructuras y cimentaciones)</i>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>4th</b>	Course code: <b>P652001407</b>	Course: <b>Structural and Foundation Design</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Note:** course recommended only for Civil Engineering students

**Content/Units:**

- Unit 1-Soils. 1.1: Ordering a soil report. 1.2: Soil report
- Unit 2- Foundation and Retaining Design. 2.1: Foundation design. 2.2: Retaining design
- Unit 3- Foundation and Retaining Dimensioning. 3.1: Stresses on soils. 3.2: Retaining and foundation stability and dimensioning. 3.3: Reinforcing of foundation and retaining elements.
- Unit 4- Structural Design and Project. 4.1: Structural Design. 4.2: Structural Projects. 4.3: Structural problems in old buildings (rehabilitation)

**Specific competencies:**

- CE12: Ability to conceive, calculate, design, integrate buildings and urban units and execute building foundations.
- CE13: Ability to apply technical and constructive standards and regulations.
- CE14: Ability to maintain building structures, foundations and civil works.
- CE16: Ability to evaluate construction works.
- CE17: Ability to conceive, calculate, design, integrate buildings and urban complexes and execute building structures.
- CE31: Knowledge of measurement, assessment and survey methods.
- CE32: Knowledge of the on-site health and safety plan.
- CE39: Ability to design, put into practice, development site management.
- CE44: Ability to draft civil works projects.

Year: <b>4th</b>	Course code: <b>P652001408</b>	Course: <b>Deontology and values</b> ( <i>Deontología y valores</i> )	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b>						

- Unit 1. National and international real estate law and legislation (1)
- Unit 2. National and international real estate law and legislation (2)
- Unit 3. Basic Real Estate Valuation Techniques
- Unit 4. Organization and structure of studios and companies
- Unit 5. Legislation relating to professional practice
- Unit 6. Deontology in regulated professions and their control mechanisms. Ethics and responsibility in the Scope of the professional practice of architecture

**Specific competencies:**

- CE28: Knowledge of deontology, collegiate organisation, professional structure and Liability.
- CE29: Knowledge of administrative and professional management procedures and procedures.
- CE31: Knowledge of measurement, valuation and expert assessment methods.
- CE59: Knowledge of civil, administrative, urban planning, building and construction regulations industry related to professional performance.
- CE61: Knowledge of real estate appraisal

Year: <b>4th</b>	Course code: <b>9956001409</b>	Course: <b>G6 Project Workshop (Taller de proyectos G6)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>12 ECTS</b>
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Year: <b>4th</b>	Course code: <b>P652001409</b>	Course: <b>G6 Project Workshop</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>12 ECTS</b>
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**Content/Units:**

- Unit 1. Small scale architectural devices and objects
- Unit 2. Urban scale interventions
- Unit 3. Architecture project. Social architecture and human settlements

**Specific competencies:**

- CE35: Ability to solve passive environmental conditioning, including thermal and acoustic insulation, climate control, energy efficiency and natural lighting.
- CE37: Ability to design, prepare and develop basic projects for executions, sketches and draft projects.
- CE39: Ability to design, put into practice and develop site management.
- CE40: Ability to develop functional programs for buildings and urban spaces
- CE44: Ability to draft civil works projects.
- CE60: Knowledge of feasibility analysis and the supervision and coordination of integrated projects.

Year: <b>5th</b>	Course code: <b>P652001503</b>	Course: <b>Sustainability in the Built Environment (Sostenibilidad en el entorno construido)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Knowledge of the urban and territorial context, as well as its resources. 1.1 Society, economy, urban planning and sustainable architecture. 1.2 Natural spaces and biodiversity. Climate, topography, water resources, etc. Topic 3 In-depth knowledge and in all its dimensions of architectures linked to a settlement: Bioclimatic strategies in urban design. Eco-neighbourhoods. Building complexes in urban contexts considering sustainability.
- Unit 2. Passive design in buildings applications. 2.1. Environmental quality in construction. 2.2. Climatic design in architecture. 2.3. Energy efficiency. Form, geometry, envelope and insulation.
- Unit 3. Life cycle and circularity of resources. 3.1. The resources of the eco-sphere and the techno-sphere. 3.2. Building construction. Sustainable materials, products, elements and systems. 3.3. Circularity in construction: Designing for deconstruction and recycling of materials

**Specific competencies:**

- CE20 Ability to conceive, calculate, design, integrate in buildings and urban units and executesupply systems, water treatment and sewage, heating and air conditioning.
- CE22 Ability to project building and urban transformers and power supply systems, audiovisualcommunication, acoustics and artificial lighting.
- CE23 Ability to preserve installations.

- CE35 Ability to solve passive environmental conditioning, including thermal and acoustic insulation, climate control, energy efficiency and natural lighting.
- CE52 Adequate knowledge of ecology, sustainability and the principles of conservation of energy and environmental resources.
- CE53 Adequate knowledge of the architectural, urban and landscaping traditions of western culture, as well as their technical, climatic, economic, social and ideological foundations

5	Course code: <b>P652001504</b>	Course: <b>G7 Project Workshop (Taller de proyectos G7)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>12 ECTS</b>
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**Content/Units:**

- Unit 1: Spatializations. 1.1: Spatialization 01. 1.2: Spatialization 02. 1.3: Spatialization 03.
- Unit 2: Basic project. 2.1: Basic Project 01. 2.2: Basic Project 02.
- Unit 3: Urban scale. 3.1: Urban Scale 01. 3.2: Urban Scale 02.
- Unit 4: Socialization. 4.1: Socialization 01. 4.2: Socialization 02.
- The subject will be developed in coordination with the Technology Projects Workshop, both in content, such as in shared milestones

**Specific competencies:**

- CE35: Ability to solve passive environmental conditioning, including thermal and acoustic insulation, climate control, energy efficiency and natural lighting.
- CE36: Ability to catalogue built and urban heritage and plan its protection.
- CE38: Capacity for the conception, practice and development of urban projects.
- CE40: Ability to develop functional programs for buildings and urban spaces
- CE41: Ability to intervene in and conserve, restore and rehabilitate built heritage.
- CE52: Adequate knowledge of the ecology, sustainability and conservation principles of energy and environmental resources.
- CE53: Adequate knowledge of the architectural, urban and landscape traditions of the Western culture, as well as its technical, climatic, economic, social and cultural foundations. Ideological

Year: <b>5th</b>	Course code: <b>9956001505</b>	Course: <b>Graphic Expression R&amp;D (Expresión gráfica I&amp;D)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>5th</b>	Course code: <b>P652001505</b>	Course: <b>Graphic Expression R&amp;D</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1: Develop a bio-inspired digital construction system project for a creative analysis and observation through a 3D drawing and prototype.
- Unit 2: Design Project, development of a construction system and architectural application.

**Specific competencies:**

- CE02 Ability to conceive and represent visual attributes to objects and master proportions and drawing techniques, including computer drawing applications.
- CE42 Ability to exercise architectural criticism.

Year: <b>5th</b>	Course code: <b>9956001507</b>	Course: <b>Territorial and Landscape Project (Proyecto territorial y paisaje)</b>	Program: <b>Bachelor's Degree in Fundamentals of the Architecture</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>5th</b>	Course code: <b>P652001507</b>	Course: <b>Territorial and Landscape Project</b>	Program:	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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			<b>Bachelor's Degree in Fundamentals of the Architecture 85% English</b>			
<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Organic structure of the landscape and territory.</li> <li>• Unit 2. Figures and instruments: landscape and territory management.</li> <li>• Unit 3. Methodology of the landscape and territory Project</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CE45: Capacity to design and execute urban layouts and urbanization projects, gardening and landscape.</li> <li>• CE47: Capacity to prepare environmental, landscape and correction studies Environmental impacts.</li> <li>• CE52: Adequate knowledge of ecology, sustainability and conservation principles of energy and environmental resources.</li> <li>• CE53: Adequate knowledge of the architectural, urban and landscape traditions of Western culture, as well as its technical, climatic, economic, social and social foundations Ideological</li> <li>• CE58: Adequate knowledge of the methodological foundations of urban planning and territorial and metropolitan planning.</li> <li>• CE62: Knowledge of the mechanisms for drafting and managing urban plans any scale.</li> </ul>						

## School of Social Sciences and Communication

### Bachelor's degree in Business Administration (English + Spanish)

1	P564001101	Economic and Social Thought	Semestre 1 / Fall Term (Sept–Jan)	English	3
1	P564001102	Business Fundamentals	Semestre 1 / Fall Term (Sept–Jan)	English	6

Year: 1st	Course code: <b>9836001103</b>	Course: <b>Microeconomics I</b> ( <i>Microeconomía I</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: 1st	Course code: <b>P564001103</b>	Course: <b>Microeconomics I</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Introduction
- Unit 2. Determinants of consumer choice
- Unit 3. Optimal choice and consumer demand
- Unit 4. Optimal choice of the firm and production theory
- Unit 5. How markets work
- Unit 6. Competitive and monopolistic markets

**Specific competencies:**

- CE1. Ability to know and understand the concept of enterprise and entrepreneur and their role in a market economy.
- CE5. Ability to analyze and evaluate a company's competitive environment, pay special attention to the market and integrate this analysis when undertaking new challenges.
- CE16. Ability to understand and analyze consumer behavior: assess and predict behaviors and trends in the different audiences into which consumers are classified in relation to a certain product or service, both geographically and culturally or in terms of population segments.
- CE21. Ability to use the mathematical tools necessary for solving economic problems and basic methods of calculus, algebra and programming.

Year: 1st	Course code: <b>9836001104</b>	Course: <b>Macroeconomics</b> ( <i>Macroeconomía</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: 1st	Course code: <b>P564001104</b>	Course: <b>Macroeconomics</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Objectives and instruments of Macroeconomics I
- Unit 2. Main variables in the economic activity.
- Unit 3. Prices and labour market.
- Unit 4. The Public Sector.
- Unit 5. Other variables in the economy: the foreign sector and socioeconomic development.

**Specific competencies:**

- CE5. Ability to analyze and evaluate a company's competitive environment, pay special attention to the market and integrate this analysis when undertaking new challenges.
- CE12. Ability to analyze, integrate and evaluate the economic information necessary for decision making.

Year: 1st	Course code: <b>9836001105</b>	Course: <b>Finance I</b> ( <i>Finanzas I</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P564001105</b>	Course: <b>Finance I</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to financial management.</li> <li>Unit 2. Interest rates.</li> <li>Unit 3. The value of money over time.</li> <li>Unit 4. Types of loans and amortization.</li> <li>Unit 5. Valuation of financial assets.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>CE3. Ability to understand and analyze financial markets, their structure, agents and products.</li> <li>CE21. Ability to use the mathematical tools necessary for the solution of economic problems and the use of basic methods of calculation, algebra and programming.</li> </ul>						

Year: <b>1st</b>	Course code: <b>9836001106</b>	Course: <b>Financial Accounting</b> <i>(Contabilidad financiera)</i>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P564001106</b>	Course: <b>Financial Accounting</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Conceptual framework of accounting</li> <li>Unit 2. Concept of equity, assets and liabilities: the balance sheet</li> <li>Unit 3. The account</li> <li>Unit 4. Recording transactions: the double entry system</li> <li>Unit 5. The accounting cycle</li> <li>Unit 6. The income statement</li> <li>Unit 7. Merchandises</li> <li>Unit 8. Accounting of VAT</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>CE6: Ability to identify and understand the area of accounting in the company and apply the different tools available for the management of the same, as well as knowing the main ones Relations with other departments.</li> <li>CE27: Ability to solve accounting problems and understand the valuation criteria of the patrimonial elements.</li> </ul>						

<b>1</b>	<b>P564001107</b>	<b>Business Maths</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>	<b>English</b>	<b>6</b>
<b>1</b>	<b>P564001108</b>	<b>Marketing</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>	<b>English</b>	<b>6</b>
<b>1</b>	<b>P564001109</b>	<b>Business Law</b>	<b>Semestre 2 / Spring Term (Jan–Jun)</b>	<b>English</b>	<b>6</b>
<b>1</b>	<b>P564001110</b>	<b>Management Technologies</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>	<b>English</b>	<b>3</b>
<b>1</b>	<b>P564001111</b>	<b>Professional and Personal Efficiency</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>	<b>English</b>	<b>6</b>

Year: <b>2nd</b>	Course code: <b>9836001201</b>	Course: <b>Microeconomics II</b> <i>(Microeconomía II)</i>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P564001201</b>	Course: <b>Microeconomics II</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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<b>Content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Competitive Markets</li> <li>Unit 2. Price fixing and discriminatory pricing policies</li> <li>Unit 3. Oligopoly strategic behaviors</li> <li>Unit 4. Product and quality competition</li> <li>Unit 5. Alliances and collusive movements</li> </ul>						

**Specific competencies:**

- CE5. Ability to analyze and evaluate a company's competitive environment, pay special attention to the market and integrate this analysis when undertaking new challenges.
- CE16. Ability to understand and analyze consumer behavior: assess and predict behaviors and trends in the different audiences into which consumers are classified in relation to a certain product or service, both geographically and culturally or in terms of population segments.
- CE21. Ability to use the mathematical tools necessary for solving economic problems and basic methods of calculus, algebra and programming

Year: <b>2nd</b>	Course code: <b>9836001202</b>	Course: <b>Macroeconomics II</b> <i>(Macroeconomía II)</i>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P564001202</b>	Course: <b>Macroeconomics II</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Content/Units:**

- Unit 1. Long-term economic growth
- Unit 2. The income-expenditure model
- Unit 3. The IS-LM model
- Unit 4. Fiscal and monetary policy

**Specific Competences:**

- CE01. Analyze and evaluate the competitive environment of the company, pay special attention to the market and integrate this analysis when undertaking new challenges.
- CE04. Analyze, integrate and evaluate information from the legal, socio-cultural and economic environment, necessary for decision making.

Year: <b>2nd</b>	Course code: <b>9836001203</b>	Course: <b>Taxation systems</b> ( <i>Sistemas impositivos</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P564001203</b>	Course: <b>Taxation systems</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Public revenues and taxes
- Unit 2. Taxing personal income: design and economic valuation
- Unit 3. Taxing corporate income: design and economic valuation
- Unit 4. Taxing consumption: design and economic valuation
- Unit 5. Tax planning tools and methodology

**Specific competences:**

- CE12. Ability to analyze, integrate and evaluate the economic information necessary for decisionmaking.
- CE20. Ability to select the best financial and tax planning alternative to be applied in the markets and companies where the activity is carried out, as well as to use the different tools available for managing it.

Year: <b>2nd</b>	Course code: <b>9836001204</b>	Course: <b>Finance II</b> ( <i>Finanzas II</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P564001204</b>	Course: <b>Finance II</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Objectives of Financial Management
- Unit 2. Calculation of cash flows
- Unit 3. Project valuation in a context of uncertainty
- Unit 4. The financial system

- Unit 5. Credit institutions. Bank entities.
- Unit 6. Other entities and financial markets. Insurance activity

**Specific competences:**

- CE3: Capacity to understand and analyse financial markets, their structure, agents and products
- CE20: Ability to select the best alternative for financial and tax planning to be applied in the markets and companies in which the activity is carried out, as well as applying the different tools available for its management

2	P564001205	Statistics I	Semestre 2 / Spring Term (Jan–Jun)	English	6
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Year: 2nd	Course code: <b>9836001206</b>	Course: <b>Financial Accounting II</b> (Contabilidad financiera II)	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: 2nd	Course code: <b>P564001206</b>	Course: <b>Financial Accounting II</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Stocks.
- Unit 2. Fixed assets: depreciation.
- Unit 3. Collection rights.
- Unit 4. Personnel costs.
- Unit 5. Periodification.
- Unit 6. Financial instruments.
- Unit 7. Accounting reflection of other operations.
- Unit 8. Introduction to the analysis of financial statements

**Specific competences:**

- CE03. Identify and understand the area of accounting, human resources, marketing, commercial, and Production in the company applying the different tools available for its management.

Year: 2nd	Course code: <b>9836001207</b>	Course: <b>Strategic Management I</b> (Dirección estratégica I)	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: 2nd	Course code: <b>P564001207</b>	Course: <b>Strategic Management I</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 Introduction to strategic management.
- Unit 2 The orientation of the company.
- Unit 3 Analysis of the general environment.
- Unit 4 Analysis of the specific environment.
- Unit 5 Internal analysis and strategic matrices

**Specific competences:**

- CE3. Apply practical and consulting actions in different areas of business management that are reflected in the real world of companies.
- CE5. Analyze information to build and implement a Strategic Plan: External and internal strategic analysis; formulation, choice and implementation of corporate and competitive strategies and strategic control.

Year: 2nd	Course code: <b>9836001208</b>	Course: <b>Business Management</b> (Gestión empresarial)	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: 2nd	Course code: <b>P564001208</b>	Course: <b>Business Management</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to business administration
- Unit 2. Decision making
- Unit 3. From strategic planning to strategic management
- Unit 4. Organizational design and structures
- Unit 5. The management function
- Unit 6. The control function.

**Specific competencies:**

- CE1. Ability to know and understand the concept of enterprise and entrepreneur and their role in a market economy.
- CE2. Ability to gather and interpret information in order to prepare and implement a strategic plan: external and internal strategic analysis; formulating, choosing and implementing corporate and competitive strategies and strategic control.
- CE4. Ability to define, apply and explain the general management process and identify its different phases: planning, organization, management and control.

Year: <b>2nd</b>	Course code: <b>9836001210</b>	Course: <b>Influence and Personal Impact</b> ( <i>Influencia e impacto personal</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P564001210</b>	Course: <b>Influence and Personal Impact</b>	Program: <b>Bachelor's Degree in Business Administration 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Communication in public
- Unit 2. Techniques to impact
- Unit 3. Techniques to be highly effective
- Unit 4. Habits to influence

**Specific competencies:**

- CE11. Ability to analyze, integrate and evaluate information from the sociocultural environment, necessary for decision making.
- CE14. Ability to communicate and negotiate effectively in the professional field of Business Administration.
- CE22. Ability to evaluate ethical behaviors and decisions in business respecting human rights and the impact of productive activities on the environment in the country of origin as in the different markets in which it operates.

Year: <b>3rd</b>	Course code: <b>9836001301</b>	Course: <b>Strategic Management II</b> ( <i>Dirección Estratégica II</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 Competitive Strategies. 1.1. The strategic process. 1.2. Advantage and competitive strategy. 1.3. Generic competitive strategies. 1.4. Hybrid strategies and business models.
- Unit 2 The expansion strategy. 2.1. Corporate strategies. 2.2. The expansion of activities. 2.3. Product development and innovation. 2.4. The internationalization of the company.
- Unit 3 The diversification strategy. 3.1. Diversification of activities. 3.2. Vertical integration. 3.3. The problem of the diversified company. 3.4. Entrepreneurship as a business strategy.
- Unit 4 Strategic Development Methods. 4.1. Internal development and external development. 4.2. Business cooperation. 4.3. Types of cooperation agreements. 4.4. Franchises
- Unit 5 Evaluation, implementation and strategic control. 5.1. The evaluation of strategies. 5.2. The implementation of the strategy and its control. 5.3. Change management for the implementation of the strategy
- Unit 6 Description of teamwork. 6.1. Development of a scientific investigation on strategic direction.

Year: <b>3rd</b>	Course code: <b>9836001302</b>	Course: <b>Production and operations</b> ( <i>Producción y Operaciones</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Introduction to Production Systems

- Unit 2. Production process design and programming
- Unit 3. Supply Chain
- Unit 4. Quality Management
- Unit 5. Quality Certifications
- Unit 6. Group work

3	9836001303	Estadística II	Semestre 1 / Fall Term (Sept-Jan)	Español	6
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Year: <b>3rd</b>	Course code: <b>9836001304</b>	Course: <b>Econometry (Econometría)</b>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Presentation of applied economic analysis: what is the purpose of Econometrics?
- Unit 2. The Basic Linear Regression Model (MBRL). 2.1. Specification of the basic linear regression model (MBRL). 2.2. Estimation by the ordinary least squares (OLS) method. 2.3. Normality, inference, and goodness of fit. 2.4. Full Estimation and Inference Example
- Unit 3. Sampling Problems in Econometric Analysis. 3.1. Multicollinearity: concept, causes, consequences and corrective measures. 3.2. Complete example of multicollinearity analysis. 3.3. Qualitative explanatory variables. ANOVA & ANCOVA Models. 3.4. Complete example of qualitative variable analysis.
- Unit 4. The Effects of Diversity and Time: Diagnosis on Estimated MBRL Residues. 4.1. The Effect of Diversity: Heteroscedasticity. 4.2. Full example of heteroscedasticity. 4.3. The Effect of Time: Autocorrelation. 4.4. Full example of autocorrelation.
- Unit 5. Prediction and Other Uses of Econometric Models. 5.1. Prediction with the basic linear regression model and the effect of multicollinearity. 5.2. Full example on prediction. 5.3. Prediction with heteroscedasticity and autocorrelation. 5.4. Full example on heteroscedasticity and autocorrelation
- Unit 6. Team final work

Year: <b>3rd</b>	Course code: <b>9836001305</b>	Course: <b>Cost contability (Contabilidad de Costes)</b>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Study of cost classification and inventory management.
- Unit 2. Inventory management analysis.
- Unit 3. Calculation of the cost of production sold.
- Unit 4. Study of in-progress and semi-finished products.
- Unit 5. Different costing methods.
- Unit 6. Analysis and interpretation of results.

Year: <b>3rd</b>	Course code: <b>9836001306</b>	Course: <b>Financial Management (Gestión Financiera)</b>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Funding Decisions
- Unit 2. Optimal financial structure:
- Unit 3. Liability instruments
- Unit 4. Return, risk and diversification. Cost of capital.
- Unit 5. Dividend policy. PAYOUT.
- Unit 6. Financial ratios.

Year: <b>3rd</b>	Course code: <b>9836001307</b>	Course: <b>Commercial Management (Dirección Comercial)</b>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The Role of Business Management
- Unit 2. Characteristics and types of sales channels
- Unit 3. Marketing Decisions
- Unit 4. Organization of the sales team
- Unit 5. Management of the sales team: control, recruitment, selection, motivation, and remuneration.
- Unit 6. Preparation of the sales plan

Year: <b>3rd</b>	Course code: <b>9836001308</b>	Course: <b>Human Resources Management</b> <i>(Gestión de Recursos Humanos)</i>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. The human resources department. 1.1. Introduction to human resources management. 1.2. Diversity & Inclusion Management. 1.3. Quality of life at work. 1.4. Social responsibility.
- Unit 2. Design and organization of work. 2.1. Information systems and planning process. 2.2. Analysis and description of jobs. 2.3. Internal communication and conflict management. 2.4. Corporate culture.
- Unit 3. Strategic human resources planning. 3.1. The impact of technologies on recruitment processes. 3.2. The recruitment process. 3.3. The selection process. 3.4. The welcome.
- Unit 4. The process of professional development and training of human resources. 4.1. Training for employment. 4.2. Training programs. 4.3. Performance appraisal. 4.4. Career management.
- Unit 5. Compensation and benefits systems. 5.1. The concept of remuneration. 5.2. Accruals and discounts. 5.3. Variable remuneration. 5.4. Salary calculation.
- Unit 6. The process of disengagement. 6.1. Causes and effects of the suspension of the contract. 6.2. Leave of absence. 6.3. Termination of the contract and collective dismissal. 6.4. Objective dismissal and disciplinary dismissal.

Year: <b>3rd</b>	Course code: <b>9836001309</b>	Course: <b>Creativity and Innovation</b> <i>(Creatividad e Innovación)</i>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1: Introduction
- Unit 2: Culture of Innovation
- Unit 3: International Cultural Models
- Unit 4: Design Thinking
- Unit 5: Functionalism
- Unit 6: New Lines of Business Innovation

Year: <b>3rd</b>	Course code: <b>9836001310</b>	Course: <b>Entrepreneur Leadership</b> <i>(Liderazgo Emprendedor)</i>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Keys to leadership. 1.1. Introduction to the concept. 1.2. Fundamentals of leadership. 1.3. Types of leadership. 1.4. Leadership models. 1.5. Leadership styles. 1.6. Communication from the leader.
- Unit 2. Proactive thinking and entrepreneurial spirit. 2.1. Personal branding. 2.2. Laws of the entrepreneur. 2.3. Proactivity in entrepreneurship. 2.4. Entrepreneurial ideas and leaders.
- Unit 3. Complex Organizations: Balance Between the Domestic and the Global. 3.1. Diversity management. 3.2. Knowledge management. 3.3. Conflict management and negotiation. 3.4. Global complexity in organizations.

Year: <b>4th</b>	Course code: <b>9836001801</b>	Course: <b>Innovation Management</b> <i>(Gestión de la Innovación)</i>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Introduction to innovation. Innovation strategies.
- Unit 2: Trademarks and Community Trademarks.
- Unit 3: Patents and Utility Models.

- Unit 4: Copyright and Software.
- Unit 5: Innovation in the European Union. The digital transformation of companies.
- Unit 6: Future of innovation management. Industry 4.0

Year: <b>4th</b>	Course code: <b>9836001802</b>	Course: <b>Project Management</b> ( <i>Gestión de Proyectos</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Projects and their environment. 1.1. What is a project? 1.2. Stakeholders. 1.3. The role of the project manager and leadership. 1.4. The project management process and international framework. and. Project selection. 1.5. Success factors.
- Unit 2. Phases in project management according to the Project Management Institute (PMI). 2.1. Initiation. 2.2. Planning. 2.3. Enforcement. 2.4. Monitoring and control. 2.5. Closing
- Unit 3. Main metrics, KPIs and scorecard for effective project management.
- Unit 4. Tools and techniques used in the various areas of knowledge, groups of processes and Project Management processes (Estimating, Project Management software, methods quantitative and analytical, etc.).
- Unit 5. Introduction to Six Sigma Methodology

Year: <b>4th</b>	Course code: <b>9836001803</b>	Course: <b>Marketing Strategy</b> ( <i>Estrategia de Marketing</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Consumer behavior.
- Unit 2. The process of delivering value.
- Unit 3. Product strategy.
- Unit 4. Pricing strategy.
- Unit 5. Distribution strategy.
- Unit 6. Communication strategy.

Year: <b>4th</b>	Course code: <b>9836001806</b>	Course: <b>Business Management</b> ( <i>Taller de Negocios</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Structure and preparation of the work and consulting report.
- Unit 2. Analysis of data and sources of information.
- Unit 3. Tools for reference management.
- Unit 4. Written and oral communication skills.
- Unit 5. Completion of the work.

Year: <b>4th</b>	Course code: <b>9836001807</b>	Course: <b>Financial forecasting and planning</b> ( <i>Análisis y Planificación Financiera</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Financial forecasting and planning.
- Unit 2. Investment policy: CAPEX and NOF.
- Unit 3. Design of a financial plan.

Year: <b>4th</b>	Course code: <b>9836001808</b>	Course: <b>Analysis and risk Management</b> ( <i>Análisis y Gestión de Riesgos</i> )	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Identification and analysis of the different types of business risk.

- Unit 2. Financial risk control and management.
- Unit 3. Derivative products. 3.1. Futures contracts. 3.2. Financial options. 3.3. SWAPS and other derivative products.
- Unit 4. Hedging strategies.

Year: <b>4th</b>	Course code: <b>9836001820</b>	Course: <b>Entrepreneurship Workshop</b> <i>(Taller de Emprendimiento)</i>	Program: <b>Bachelor's Degree in Business Administration</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Entrepreneurship. 1.1 Traits of the entrepreneur. 1.2 Inspirational Cases: Great Entrepreneurs.
- Unit 2. The entrepreneurial itinerary. 2.1 The entrepreneurial journey. 2.2 Ideation of the business model. 2.3 Selection of the best project. 2.4 The generation of business models.
- Unit 3. The Business Plan. 3.0 Plan structure. 3.1 Team structure. 3.2 Disruptive design. 3.3 Business idea. 3.4 Inspiration company. 3.5 Company Name. 3.6 Executive Committee. 3.7 Market and business analysis. 3.8 Marketing Plan. 3.9 Operations Plan. 3.10 Human Resources Plan. 3.11 Financial Plan. 3.12 Contingency Plan. 3.13 Business Model Canvas. 3.14 Strategic plan
- Unit 4. Submit your business plan. 4.1 Written presentation structure. 4.2 Structure of the oral presentation. 4.3 Elevator speech. 4.4 Entrepreneurship as transformation.
- Unit 5. Finance and launch your project. 5.1 How to approach a funding round. 5.2 Legal and tax aspects of setting up a company

## Global Bachelor's Degree In International Business (English)

<b>1</b>	<b>P230001101</b>	<b>Economic Environment</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>	<b>English</b>	<b>6</b>
<b>1</b>	<b>P230001102</b>	<b>Fundamentals of International Business</b>	<b>Semestre 2 / Spring Term (Jan–Jun)</b>	<b>English</b>	<b>6</b>

Year: <b>1st</b>	Course code: <b>P230001103</b>	Course: <b>Communication Skills</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Basic Concepts
- Unit 2. Social Skills
- Unit 3. Oral Skills
- Unit 4. Rhetoric and Fallacies
- Unit 5. Written Skills
- Unit 6. Presentation Skill

**Specific competencies:**

- CE2: Capacity to define, design, explain and apply the international business process and the different phases that comprise it: planning, organization, management and control.
- CE5: Ability to communicate effectively in two languages, at a general level and specifically in the professional field of business in international forums.
- CE19: Ability to understand and integrate oneself professionally in the different economic, organizational and hierarchical structures of multinational companies, knowing the relevant positions and the functions of each director and department.

<b>1</b>	<b>P230001104</b>	<b>Mathematics</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>	<b>English</b>	<b>6</b>
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Year: <b>1st</b>	Course code: <b>P230001105</b>	Course: <b>Environments: Cultural, Political and Legal</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**



- Unit 1. Conceptual approach to political, cultural and legal environments
- Unit 2. Main issues in politics and culture.
- Unit 3. Global legal challenges.
- Unit 4. Dynamics between political, cultural and legal environments.

**Specific competencies:**

- CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.
- CE6: Ability to assimilate and take into account in decision-making the socio-economic reality of the different geopolitical, geo-economic and socio-cultural issues, as well as their particularities.
- CE11: Ability to analyze and evaluate macroeconomic information in new competitive environments when making strategic business decisions.
- CE12: Ability to understand and evaluate the legal framework when making strategic business decisions in new competitive environments
- CE13: Ability to analyze and evaluate, in international social environments, the new competitive markets when making strategic business decisions.
- CE23: Ethical behavior in business respecting human rights and the impact of productive activities on the environment both in the country of origin and in the different markets in which it operates.

Year: <b>1st</b>	Course code: <b>P230001106</b>	Course: <b>Geopolitics of Today's World</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Geography, geopolitics and geostrategy
- Unit 2. Power in international relations: hard power and soft power
- Unit 3. Evolution of geopolitical thinking from classical authors to the cold war
- Unit 4. Evolution of geopolitical thinking: contemporary geopolitics.
- Unit 5. Analysis of the current geopolitical scenario: superpowers, great Powers and regional Powers.

**Specific competencies:**

- CE.3.- Ability to analyse the role of international organisations today as well as the role and scope of the influence of international cooperation agencies and organisations.
- CE.4. Ability to identify and analyse the economic aspects of globalisation linked to: internationalisation of companies, foreign trade and global economy.
- CE.6. Ability to assimilate and take into account in the decision-making process the socioeconomic reality of the different geopolitical, geoeconomic and sociocultural areas, as well as their particularities.
- CE. 14. Ability to adapt to new trends and business practices including the application of corporate social responsibility policies in the international arena

<b>1</b>	<b>P230001107</b>	<b>Principles of Business Management</b>	<b>Semestre 1 / Fall Term (Sept—Jan)</b>	<b>English</b>	<b>6</b>
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Year: <b>1st</b>	Course code: <b>P230001108</b>	Course: <b>Financial and Accounting Analysis</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Financial accounting as an information system.
- Unit 2. Conceptual framework and accounting standards set in IFRS.
- Unit 3. Accounts and accounting registration system.
- Unit 4. Recording of basic commercial transactions: Journal book and General ledger.
- Unit 5. Accounting Cycle.
- Unit 6. Annual accounts in International companies

**Specific competencies:**

- CE8: Capacity to use the management tools available in the area of administration and finance, in the context of international business.
- CE19: Ability to understand and integrate oneself professionally in the different economic, organizational and hierarchical structures of multinational companies, knowing the relevant positions and the functions of each director and department.

- CE21: Ability to interpret accounting and financial information prepared in different countries, taking into account the adjustments and economic impacts of different accounting methods, as well as the adjustments required to obtain information according to international financial reporting standards.

Year: <b>1st</b>	Course code: <b>P230001110</b>	Course: <b>Introduction To Marketing</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction to Marketing</li> <li>• Unit 2. Marketing Planning</li> <li>• Unit 3. The Marketing environment</li> <li>• Unit 4. Consumer's buying behavior</li> <li>• Unit 5. The importance of the Marketing mix</li> <li>• Unit 6. Market Segmentation</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• CE7: Ability to use the management tools available in the area of marketing and commercial management, in the context of international business.</li> <li>• CE 11: Ability to analyze and evaluate macroeconomic information in new competitive environments when making strategic business decisions.</li> <li>• CE13: Ability to analyze and evaluate, in international social environments, the new competitive markets when making strategic business decisions.</li> <li>• CE15: Ability to perform market analysis prior to making decisions on international expansion and business growth.</li> <li>• CE16: Ability to select the best strategic planning, marketing and commercial alternatives, which are then implemented in the markets and companies in which the business activity takes place, in a context of globalized and interdependent environments</li> </ul>						

Year: <b>2nd</b>	Course code: <b>P230001201</b>	Course: <b>Competitive Market Analysis</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Market definition and firms' competitiveness</li> <li>• Unit 2. Perfect Competition</li> <li>• Unit 4. Game theory and firms' strategic behaviour</li> <li>• Unit 5. Oligopoly</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• CE1: Capacity for evaluation and critical analysis of phenomena and agents that affect the social and political environment in different international scenarios.</li> <li>• CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.</li> <li>• CE6: Ability to assimilate and take into account in decision-making the socio-economic reality of the different geopolitical, geo-economic and socio-cultural issues, as well as their particularities.</li> <li>• CE15: Ability to perform market analysis prior to making decisions on international expansion and business growth.</li> <li>• CE22: Ability to integrate oneself into different international environments, adapting successfully the business model to other geopolitical and cultural contexts.</li> <li>• CE27: Ability to use the tools and criteria for the selection of suppliers and supply countries for the company.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>P230001202</b>	Course: <b>International Finance Accounting</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. The specific international financial reporting standards related to assets, liabilities and equity</li> <li>• Unit 2. The specific international financial reporting standards related to expenses and revenues</li> <li>• Unit 3. Specific accounting and valuation standards according to IFRS</li> <li>• Unit 4. Analysis of financial information of international companies</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• CE8: Capacity to use the management tools available in the area of administration and finance, in the context of international business.</li> </ul>						

- CE19: Ability to understand and integrate oneself professionally in the different economic, organizational and hierarchical structures of multinational companies, knowing the relevant positions and the functions of each director and department.
- CE21: Ability to interpret accounting and financial information prepared in different countries, taking into account the adjustments and economic impacts of different accounting methods, as well as the adjustments required to obtain information according to international financial reporting standards.

Year: <b>2nd</b>	Course code: <b>P230001203</b>	Course: <b>Financial Economics</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to financial management.</li> <li>• Unit 2. Interest rates.</li> <li>• Unit 3. The value of money over time.</li> <li>• Unit 4. Types of loans and amortization.</li> <li>• Unit 5. Valuation of financial assets.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CE3. Ability to understand and analyze financial markets, their structure, agents and products.</li> <li>• CE21. Ability to use the mathematical tools necessary for the solution of economic problems and the use of basic methods of calculation, algebra and programming</li> </ul>						

Year: <b>2nd</b>	Course code: <b>P230001204</b>	Course: <b>International Marketing</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. – Introduction to International Marketing and Business Internationalization</li> <li>• Unit 2.- International Marketing Plan. Marketing Project focused in an international company</li> <li>• Unit 3.- Analysis and Diagnosis of the international company</li> <li>• Unit 4.- Research and election of foreign markets. International branding</li> <li>• Unit 5. - Forms of foreign markets. International cultural management</li> <li>• Unit 6.- International Marketing Strategies (I): segmentation and positioning</li> <li>• Unit 7- International Marketing Strategies (II): Marketing Mix (product, price, distribution and communication)</li> <li>• Unit 8.- Online marketing for the internationalization of the company</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CE 1. Capacity for evaluation and critical analysis of phenomena and agents that affect the social and political environment in different international scenarios.</li> <li>• CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.</li> <li>• CE7: Ability to use the management tools available in the area of marketing and commercial management, in the context of international business.</li> <li>• CE15: Ability to perform market analysis prior to making decisions on international expansion and business growth.</li> <li>• CE16: Ability to select the best strategic planning, marketing and commercial alternatives, which are then implemented in the markets and companies in which the business activity takes place, in a context of globalized and interdependent environments.</li> <li>• CE23: Ethical behavior in business respecting human rights and the impact of productive activities on the e</li> </ul>						

Year: <b>2nd</b>	Course code: <b>P230001205</b>	Course: <b>World Economics</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction. Economic systems. Productive restructuring and implications of socio-political environments.</li> <li>• Unit 2. World trade, major players, the role of international cooperation agencies.</li> <li>• Unit 3. Global economy; advantages and disadvantages, impact of the crisis on global economic development.</li> <li>• Unit 4. Major economic challenges in global environments. Analysis of poverty and inequality, energy challenges, environmental impact and demographics.</li> <li>• Unit 5. International Trade. regulatory institutions and policy areas.</li> <li>• Unit 6. Monetary systems. regulatory institutions and policy areas.</li> <li>• Unit 7. Assessment of global companies in the world</li> </ul>						

**Specific competencies:**

- CE 1. Capacity for evaluation and critical analysis of phenomena and agents that affect the social and political environment in different international scenarios.
- CE3: Ability to analyze the role of international organizations today as well as the role and scope of the influence of international cooperation agencies and organizations.
- CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.
- CE6: Ability to assimilate and take into account in decision-making the socio-economic reality of the different geopolitical, geo-economic and socio-cultural issues, as well as their particularities.
- CE14: Capacity to adapt to new trends and business practices including the application of corporate social responsibility policies, in the context of international business.

2	P230001206	Statistics	Semestre 2 / Spring Term (Jan – Jun)	English	6
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Year: 2nd	Course code: P230001207	Course: International Taxation	Program: Global Bachelor's Degree in International Business	Term: Semester 2	Teaching Language: English	Cr: 6 ECTS
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**Course content/Units:**

- Unit 1 Principles of international taxation;
- Unit 2 Tax jurisdiction: the right to tax resident and non-resident;
- Unit 3 Unilateral measures and Double tax treaty to reduce double taxation;
- Unit 4 Taxing the foreign persons both juridical and natural;
- Unit 5 The Spanish Tax Law
- Unit 6 The BEPS project:
- Unit 7 The EU: tax directive and VAT
- Unit 8 Tax Havens

**Specific competencies:**

- CE2: Capacity to define, design, explain and apply the international business process and the different phases that comprise it: planning, organization, management and control.
- CE8: Capacity to use the management tools available in the area of administration and finance, in the context of international business.
- CE12: Ability to understand and evaluate the legal framework when making strategic business decisions in new competitive environments.
- CE17: Ability to select the best financial planning and operational options, which are then implemented in the markets and companies in which the business activity takes place, in the context of globalized and interdependent environments

Year: 2nd	Course code: P230001208	Course: Sources of International Financing	Program: Global Bachelor's Degree in International Business	Term: Semester 2	Teaching Language: English	Cr: 6 ECTS
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**Course content/Units:**

- Unit 1: Introduction to International Finance
- Unit 2: The Corporation in International Finance
- Unit 3: Stocks and Bonds
- Unit 4: International Financial Markets
- Unit 5: The International Financial System
- Unit 6: Debt vs. Equity Financing
- Unit 7: The Weighted Average Cost of Capital

**Specific competencies:**

- CE8: Capacity to use the management tools available in administration and finance, in international business.
- CE15: Ability to perform market analysis prior to making decisions on international expansion and business growth.
- CE17: Ability to select the best financial planning and operational options, which are then implemented in the markets and companies in which the business activity takes place, in the context of globalized and interdependent environments.
- CE21: Ability to interpret accounting and financial information prepared in different countries, taking into account the adjustments and economic impacts of different accounting methods, as well as the adjustments required to obtain information according to international financial reporting standards

Year: <b>2nd</b>	Course code: <b>P230001210</b>	Course: <b>Business Intelligence</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Introduction to Business Intelligence
- Unit 2: Information sources and data typification
- Unit 3: Tools and organizational innovation
- Unit 4: Information systems and organizational change
- Unit 5: Developing information systems
- Unit 6: Database design
- Unit 7: Project Management and Corporate Innovation
- Unit 8: Business Intelligence - Strategic Decision-making

**Specific competencies:**

- CE8: Capacity to use the management tools available in the area of administration and finance, in the context of international business.
- CE19: Ability to understand and integrate oneself professionally in the different economic, organizational and hierarchical structures of multinational companies, knowing the relevant positions and the functions of each director and department.
- CE21: Ability to interpret accounting and financial information prepared in different countries, taking into account the adjustments and economic impacts of different accounting methods, as well as the adjustments required to obtain information according to international financial reporting standards

Year: <b>3rd</b>	Course code: <b>P230001301</b>	Course: <b>International Strategic Management</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 - Basic concepts
- Unit 2 - Macro environment
- Unit 3 - The sector
- Unit 4 - The competitors
- Unit 5 - The company: skills and resources
- Unit 6 - Competitive advantage
- Unit 7 - Strategic alliances: compete, ally or collaborate
- Unit 8 - Diversification & portfolio

**Specific competencies:**

- CE 1: Capacity for evaluation and critical analysis of phenomena and agents that affect the social and political environment in different international scenarios.
- CE6: Ability to assimilate and take into account in decision-making the socio-economic reality of the different geopolitical, geo-economic and socio-cultural issues, as well as their particularities.
- CE6: Ability to select the best strategic planning, marketing and commercial alternatives, which are then implemented in the markets and companies in which the business activity takes place, in a context of globalized and interdependent environments.
- CE17: Ability to select the best financial planning and operational options, which are then implemented in the markets and companies in which the business activity takes place, in the context of globalized and interdependent environments.
- CE18: Ability to select the best human resource planning and people management option, which are then implemented in each market and company, in an environment of increasing interconnection and dependence between countries.
- CE22: Ability to integrate oneself into different international environments, adapting successfully the business model to other geopolitical and cultural contexts.
- CE24: Ability to recognize technology and innovation strategies, as well as technological analysis tools and technological capabilities of the company

Year: <b>3rd</b>	Course code: <b>P230001302</b>	Course: <b>Human Resources Management</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Human Resources in a Global World. 1.1. Strategic management of HR. Competitive environment analysis. 1.2. Organizational structures of multinationals. Ethnocentric, polycentric and geocentric approaches in the international politics of Human Resources. 1.3. Contemporary management. Leadership and Diversity.
- Unit 2. Human Resources Management. 1.1. Resourcing and Recruitment. 1.2. Professional development. 1.3. Training in multicultural environment. 1.4. Mobility and remuneration policies. 1.5. Performance appraisal systems. 1.6. Expatriate management policies. 1.7. Employer Branding and Employee Experience. 1.8. HR Analytics

**Specific competencies:**

- CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.
- CE9: Ability to use human resources management tools, in the context of international business.
- CE14: Capacity to adapt to new trends and business practices including the application of corporate social responsibility policies, in the context of international business.
- CE18: Ability to select the best human resource planning and people management option, which are then implemented in each market and company, in an environment of increasing interconnection and dependence between countries.
- CE19: Ability to understand and integrate oneself professionally in the different economic, organizational and hierarchical structures of multinational companies, knowing the relevant positions and the functions of each director and department.

Year: <b>3rd</b>	Course code: <b>P230001303</b>	Course: <b>Managerial and Negotiation Skills</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Management and leadership
- Unit 2. Communication and interpersonal skills
- Unit 3. Teamwork and diversity
- Unit 4. Motivation and emotional intelligence
- Unit 5. Conflict resolution and negotiation
- Unit 6. Decision making, change and time management. Importance of ethics.

**Specific competencies:**

- CE1. Capacity for evaluation and critical analysis of phenomena and agents that affect the social and political environment in different international scenarios.
- CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.
- CE19: Ability to understand and integrate oneself professionally in the different economic, organizational and hierarchical structures of multinational companies, knowing the relevant positions and the functions of each director and department.

Year: <b>3rd</b>	Course code: <b>P230001304</b>	Course: <b>Commercial Research</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Definition and scope of market research
- Unit 2. Defining the research question
- Unit 3. Secondary sources: National and international sources
- Unit 4. Qualitative research techniques (applications, methods, internet, specific uses in the analysis of foreign markets)
- Unit 5. Quantitative research techniques (applications, types, ques-onnaires, sampling, use of the internet)
- Unit 6. Other research techniques (observa-on, the Delphi method, experimentation)
- Unit 7. Ethical and legal aspects of market research

**Specific competencies:**

- CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.
- CE7: Ability to use the management tools available in the area of marketing and commercial management, in the context of international business.
- CE13: Ability to analyze and evaluate, in international social environments, the new competitive markets when making strategic business decisions.
- CE15: Ability to perform market analysis prior to making decisions on interna-onal expansion and business growth.

- CE16: Ability to select the best strategic planning, marketing and commercial alternatives, which are then implemented in the markets and companies in which the business activity takes place, in a context of globalized and interdependent environments.
- CE24: Ability to recognize technology and innovation strategies, as well as technological analysis tools and technological capabilities of the company

Year: 3rd	Course code: P230001305	Course: International Trade	Program: Global Bachelor's Degree in International Business	Term: Semester 2	Teaching Language: English	Cr: 6 ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to international trade. Tools, free trade and protectionism.</li> <li>• Unit 2. Regulatory bodies and normative applying accordingly to different geopolitical contexts.</li> <li>• Unit 3. Foreign trade analysis in Spain.</li> <li>• Unit 4. Exports, international contracts. International borders.</li> <li>• Unit 5. Operations, logistics and transportation.</li> <li>• Unit 6. International contracting. Negotiation and agreements.</li> <li>• Unit 7. Economic integration, economies of scale and commercial integration.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CE3: Analyze the current role of the international organizations, as well as the scope and the influence of international cooperation agencies.</li> <li>• CE4: Identify and analyze economic aspects of globalization process related to firm internalization, trade and global economy.</li> <li>• CE6: Assimilate and take into account the socioeconomic characteristics of the different geopolitical, economic and cultural areas in the decision making process, as well as their particularities.</li> <li>• CE12: Understand and evaluate the legal framework in the strategic decision making process in new competitive environments.</li> <li>• CE27: Use tools and criteria to select the suppliers and partner countries for the firm.</li> </ul>						

Year: 3rd	Course code: P230001306	Course: Law and International Contracts	Program: Global Bachelor's Degree in International Business	Term: Semester 1	Teaching Language: English	Cr: 6 ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Law and international business</li> <li>• Unit 2. Competition law and intellectual property</li> <li>• Unit 3. International contracting</li> <li>• Unit 4. Cross-border litigation proceedings</li> <li>• Unit 5. International arbitration</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CE3: Ability to analyse the role of international organizations today as well as the role and scope of the influence of international cooperation agencies and organizations.</li> <li>• CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.</li> <li>• CE12: Ability to understand and evaluate the legal framework when making strategic business decisions in new competitive environments.</li> <li>• CE14: Capacity to adapt to new trends and business practices including the application of corporate social responsibility policies, in the context of international business.</li> </ul>						

Year: 3rd	Course code: P230001307	Course: International Finance	Program: Global Bachelor's Degree in International Business	Term: Semester 2	Teaching Language: English	Cr: 6 ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: International Financial System. International monetary system. Foreign Direct Investment. International Trade and Political risk. Current global challenges.</li> <li>• Unit 2: Foreign exchange market and exchange rates. Purchasing Power Parity. Foreign Exchange Risk.</li> <li>• Unit 3: International Financial Assets and Markets.</li> <li>• Unit 4: International stock exchange markets.</li> <li>• Unit 5: Hedging and Risk Management.</li> <li>• Unit 6: Derivatives. Financial options and futures.</li> </ul>						

- Unit 7: Portfolio Management. International investment decisions.

**Specific competencies:**

- CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.
- CE6: Ability to assimilate and take into account in decision-making the socio-economic reality of the different geopolitical, geo-economic and socio-cultural issues, as well as their particularities.
- CE12: Ability to understand and evaluate the legal framework when making strategic business decisions in new competitive environments.
- CE15: Ability to perform market analysis prior to making decisions on international expansion and business growth.
- CE17: Ability to select the best financial planning and operational options, which are then implemented in the markets and companies in which the business activity takes place, in the context of globalized and interdependent environments.

Year: <b>3rd</b>	Course code: <b>P230001308</b>	Course: <b>Internationalization Strategies</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 - The Multinational Company: Internationalization
- Unit 2 - Business Environment
- Unit 3 - The Strategy of the Multinational Company
- Unit 4 - Management of Multinational Companies
- Unit 5 - Cultural Issues in Global Management

**Specific competencies:**

- CE1. Capacity for evaluation and critical analysis of phenomena and agents that affect the social and political environment in different international scenarios.
- CE2: Capacity to define, design, explain, and apply the international business process and the different phases that comprise it: planning, organization, management and control. CE6: Ability to assimilate and take into account in decision-making the socio-economic reality of the different geopolitical, geo-economic and socio-cultural issues, as well as their particularities.
- CE7: Ability to use the management tools available in the area of marketing and commercial management, in the context of international business.
- CE8: Capacity to use the management tools available in the area of administration and finance, in the context of international business.

Year: <b>3rd</b>	Course code: <b>P230001310</b>	Course: <b>International Production and Operations Management</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 - Basic concepts
- Unit 2 - The production strategy
- Unit 3 - Project planning and forecast
- Unit 4 - Design of goods and services
- Unit 5 - Process design
- Unit 6 - Capacity and capacity planning
- Unit 7 - Location alternatives and inventory management
- Unit 8 - JIT and quality management.

**Specific competencies:**

- CE2: Capacity to define, design, explain and apply the international business process and the different phases that comprise it: planning, organization, management and control.
- CE10: Ability to use the tools available in the area of production management including planning, sales forecasting, inventory management and quality control of the production process.
- CE15: Ability to perform market analysis prior to making decisions on international expansion and business growth.

Year: <b>4th</b>	Course code: <b>P230001401</b>	Course: <b>Logistical Distribution</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**



- Unit 1- Business logistics: Functions, activities y and networks.
- Unit 2- Demand management: Forecasting. Definition, needs, design and implementation in international contexts.
- Unit 3- Supply. Strategies. Suppliers and procurement processes, international agreements and contracts.
- Unit 4- Goods. Handling, internal transport, receipt and dispatch, legal framework.
- Unit 5- Warehouse management. Needs, warehouse design, types of inventory, storage, inventory management.
- Unit 6- Supply chain

**Specific competencies:**

- CE1: Capacity for evaluation and critical analysis of phenomena and agents that affect the social and political environment in different international scenarios.
- CE5: Ability to communicate effectively in two languages, at a general level and specifically in the professional field of business in international forums.
- CE10: Ability to use the tools available in the area of production management including planning, sales forecasting, inventory management and quality control of the production process.
- CE17: Ability to select the best financial planning and operational options, which are then implemented in the markets and companies in which the business activity takes place, in the context of globalized and interdependent environments.

Year: <b>4th</b>	Course code: <b>P230001402</b>	Course: <b>Ethics in International Business</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Ethics. Fundamentals of anthropology and ethics.
- Unit 2. Historic evolution of Ethics in western countries through approaches to ethical decision-making.
- Unit 3. Ethics applied to international economic activity and international businesses.
- Unit 4. Corporate Social Responsibility. New approaches to CSR on globalized economy. Present questions

**Specific competencies:**

- CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.
- CE13: Ability to analyze and evaluate, in international social environments, the new competitive markets when making strategic business decisions.
- CE14: Capacity to adapt to new trends and business practices including the application of corporate social responsibility policies, in the context of international business.
- CE19: Ability to understand and integrate oneself professionally in the different economic, organizational and hierarchical structures of multinational companies, knowing the relevant positions and the functions of each director and department. CE23: Ethical behavior in business respecting human rights and the impact of productive activities on the environment both in the country of origin and in the different markets in which it operates

Year: <b>4th</b>	Course code: <b>P230001403</b>	Course: <b>Project Management</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Definition of the key elements of a project: stakeholders, scope, needs, goals, objectives, time horizon, quality and costs.
- Unit 2. Main management metrics and indicators (KPIs).
- Unit 3. Types of organizational charts, definition of responsibilities and roles.
- Unit 4. The Deming cycle (PDCA).
- Unit 5. Common mistakes in project management.
- Unit 6. Techniques to study the economic viability: NPV, IRR, Payback ...
- Unit 7. Diagrams of Gantt, PERT, decision trees ...
- Unit 8. Introduction to the Six Sigma methodology and continuous improvement (Kaizen).
- Unit 9. Basic concepts of Statistics, Ishikawa diagrams and flow diagrams.

**Specific competencies:**

- CE2. Ability to define, design, explain and apply the international business process and the different phases that compose it: planning, organization, management and control.
- CE4. Ability to identify and analyze the economic aspects of globalization linked to: internationalization of companies, foreign trade and global economy.
- CE6. Ability to assimilate and take into account in decision-making the socioeconomic reality of the different geopolitical, geoeconomic and sociocultural areas, as well as their particularities.

- CE10. Ability to use the tools available in the area of production management including planning, sales forecasting, inventory management and quality control of the production process.
- CE15. Ability to perform market analysis prior to international expansion decisions and business growth. CE26. Ability to integrate the different budgets of the company and relate it to the technical and economic standard costs and analysis of deviations

Year: <b>4th</b>	Course code: <b>P230001803</b>	Course: <b>International Business and Diplomacy</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Study of national foreign-service bodies and the development of their political action within the framework of the rule of law.</li> <li>• Unit 2. Structuring of diplomatic corps and diplomatic missions, and the legal and political tools available to international subjects abroad.</li> <li>• Unit 3. Theoretical and practical analysis of activities projecting the image of Spain and of a company, and of public communication strategies for developing and maintaining a position of influence in international relations in the global era.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CE.1: Ability to evaluate and critically analyse phenomena and agents affecting the social and political environment in different international scenarios.</li> <li>• CE.3: Ability to analyse the role of international organisations today as well as the function and scope of influence of international cooperation agencies and organisations.</li> <li>• CE.4: Ability to identify and analyse the economic aspects of globalisation linked to: internationalisation of companies, foreign trade, and global economy.</li> <li>• CE.19: Ability to understand and integrate professionally in the different economic, organisational and hierarchical structures of multinational companies, knowing their positions and the functions of each manager and department.</li> <li>• CE.23: Ethical business behaviour respecting human rights and the impact of production activities</li> </ul>						

Year: <b>4th</b>	Course code: <b>P230001804</b>	Course: <b>Emerging Powers and Markets</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Foreign trade and economic development. Role of international cooperation organizations.</li> <li>• Unit 2. Emerging markets: BRIC's countries &amp; EAGLEs.</li> <li>• Unit 3. Emerging markets and developing countries.</li> <li>• Unit 4. Emerging markets, global companies and the global economy.</li> <li>• Unit 5. Global economic growth and policies. Impact of global recessions.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CE.6.- Ability to assimilate and take into account in decision-making the socioeconomic reality of the different geopolitical, geo-economic and sociocultural areas, as well as their particularities.</li> <li>• CE.11.- Ability to analyze and evaluate macroeconomic information in new competitive environments for making strategic business decisions.</li> <li>• CE.12.- Ability to understand and evaluate the legal framework for making strategic business decisions in new competitive environments.</li> <li>• CE.13.- Ability to analyze and evaluate, in international social environments, the new competitive markets for making strategic business decisions.</li> <li>• CE. 14.- Ability to adapt to new trends and business practices, including the application of corporate social responsibility policies in the international arena.</li> <li>• CE. 22.- Ability to integrate into different international environments, adapting the business model to other geopolitical and cultural contexts.</li> </ul>						

Year: <b>4th</b>	Course code: <b>P230001805</b>	Course: <b>Environmental Impact Assessment</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to environmental issues and analysis of climate change concept.</li> <li>• Unit 2. Current environmental problems and future perspectives.</li> <li>• Unit 3. Environmental impact management and assessment from a legal-economic approach.</li> </ul>						

- Unit 4. Contents of the environmental impact studio: design of measures to prevent, solve and compensate the impact of the project.

**Specific competencies:**

- CE1: Ability to critically evaluate and analyse agents and events affecting the socio-political environment in international scenarios.
- CE3: Ability to analyse the role of international organizations today as well as the role and scope of the influence of international cooperation agencies and organizations.
- CE6: Ability to assimilate and consider in decision-making the socio-economic reality of the different geopolitical, geo-economic and socio-cultural issues, as well as their particularities.
- CE10: Ability to use the tools available in the area of production management including planning, sales forecasting, inventory management and quality control of the production process.
- CE14: Capacity to adapt to new trends and business practices including the application of corporate social responsibility policies, in the context of international business

Year: <b>4th</b>	Course code: <b>P230001806</b>	Course: <b>Innovation Management</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 - Basic concepts
- Unit 2 - The production strategy
- Unit 3 - Project planning and forecast
- Unit 4 - Design of goods and services
- Unit 5 - Process design
- Unit 6 - Capacity and capacity planning
- Unit 7 - Location alternatives and inventory management
- Unit 8 - JIT and quality management.

**Specific competencies:**

- CE2: Capacity to define, design, explain and apply the international business process and the different phases that comprise it: planning, organization, management and control.
- CE10: Ability to use the tools available in the area of production management including planning, sales forecasting, inventory management and quality control of the production process.
- CE15: Ability to perform market analysis prior to making decisions on international expansion and business growth.

Year: <b>4th</b>	Course code: <b>P230001808</b>	Course: <b>How To Do Business in America</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Globalization
- Unit 2. National Differences in Political, Economic, and Legal Systems
- Unit 3. National Differences in Economic Development
- Unit 4. Differences in Culture
- Unit 5. Ethics, Corporate Social Responsibility, and Sustainability
- Unit 6. International Trade Theory
- Unit 7. Government Policy and International Trade
- Unit 8. Foreign Direct Investment
- Unit 9. Regional Economic Integration
- Unit 10. The Foreign Exchange Market
- Unit 11. The International Monetary System
- Unit 12. The Strategy of International Business
- Unit 13. Entering Developed and Emerging Markets
- Unit 14. Exporting, Importing, and Countertrade
- Unit 15. Global Production and Supply Chain Management
- Unit 16. Global Marketing and Business Analytics
- Unit 17. Global Human Resource Management

**Specific competencies:**

- CE23 Ability to recognize technological and innovation strategies, as well as technical analysis tools and technological capabilities of the company as a means of growth development and improvement of its competitiveness

Year: <b>4th</b>	Course code: <b>P230001812</b>	Course: <b>Mergers and Acquisitions</b>	Program: <b>Global Bachelor's Degree in International Business</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction to the Mergers and Acquisitions.</li> <li>• Unit 2. Corporate restructuration forms.</li> <li>• Unit 3. Due Diligence.</li> <li>• Unit 4. The valuation of companies.</li> <li>• Unit 5. Methods of Valuation (I).</li> <li>• Unit 6. Methods of valuation (II).</li> <li>• Unit 7. Practical cases.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• CE2: Capacity to define, design, explain and apply the international business process and the different phases that comprise it: planning, organization, management and control.</li> <li>• CE4: Ability to identify and analyze the economic aspects of globalization linked to the internationalization of companies, foreign trade, and the global economy.</li> <li>• CE8: Capacity to use the management tools available in the area of administration and finance, in the context of international business.</li> <li>• CE15: Ability to perform market analysis prior to making decisions on international expansion and business growth.</li> <li>• CE21: Ability to interpret accounting and financial information prepared in different countries, taking into account the adjustments and economic impacts of different accounting methods, as well as the adjustments required to obtain information according to international financial reporting standards.</li> </ul>						

## Global Bachelor's Degree In International Relations (English + Spanish)

1	P434001101	History & Theory of International Relations	Semestre 1 / Fall Term (Sept—Jan)	English	6
1	P434001102	Concept of International Relations: Players & Factors	Semestre 1 / Fall Term (Sept—Jan)	English	6

Year: <b>1st</b>	Course code: <b>9978001103</b>	Course: <b>Communication for International Relations</b> ( <i>Comunicación para las relaciones internacionales</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P434001103</b>	Course: <b>Communication for International Relations</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Theories of communication in international society. Analysis of communication as a factor in international relations.</li> <li>• Unit 2. International journalism. Analysis of the international information system as the basic framework within which communication takes place.</li> <li>• Unit 3. International public opinion.</li> <li>• Unit 4. Communication from international actors: states, international organizations and lobbyists.</li> <li>• Unit 5. International communication and conflicts.</li> <li>• Unit 6. Communication and electoral processes. Study of political, electoral and media communication strategies with global impact.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• CE6: Ability to communicate effectively in two languages, generally and specifically in the professional field of international relations.</li> <li>• CE15: Ability to make use of different sources and channels of information.</li> </ul>						
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- CE24: Ability to develop a critical attitude for the analysis of the past and the present.
- CE28: Knowledge to inform, evaluate and assess current international facts and situations

1	P434001104	Human, Economic and Political Geography	Semestre 1 / Fall Term (Sept—Jan)	English	6
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1	P434001106	Documentary Sources	Semestre 1 / Fall Term (Sept—Jan)	English	6
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Year: 1st	Course code: <b>9978001107</b>	Course: <b>Foreign Policy &amp; Diplomacy</b> ( <i>Política exterior y diplomacia</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: 1st	Course code: <b>P434001107</b>	Course: <b>Foreign Policy &amp; Diplomacy</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Foreign policy in international relations.
- Unit 2. Foreign policy in history: diplomacy.
- Unit 3. Foreign policy today. Its development and control.
- Unit 4. Foreign policy in government. State instruments in foreign policy.
- Unit 5. Forms of diplomacy. Study of the nation state foreign service bodies and of the development of their political action within the framework of the rule of law.
- Unit 6. Structuring of diplomatic corps, diplomatic missions and legal and political tools for the foreign action of international subjects. The consular institution.

**Specific competencies:**

- CE15: Ability to make use of different sources and channels of information.
- CE22: Ability to take an active part in proposing solutions to specific problems and conflicts regardless of the geopolitical area. CE26: Ability to contribute through mediation to resolve conflicts in hostile environments.

Year: 1st	Course code: <b>9978001108</b>	Course: <b>Human Rights and Cooperation in Development</b> ( <i>Derechos humanos y cooperación al desarrollo</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: 1st	Course code: <b>P434001108</b>	Course: <b>Human Rights and Cooperation in Development</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Basic definitions and evolution of human rights.
- Unit 2. International regulation of human rights.
- Unit 3. National, regional and international human rights protection systems.
- Unit 4. International and regional human rights organizations.
- Unit 5. Analysis of the phenomenon of development cooperation: evolution and current situation, as well as the system of international cooperation.
- Unit 5. Institutionalized international cooperation.
- Unit 6. Millennium Development Goals.

**Specific competencies:**

- CE7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- CE9: Ability to recognize global, universal and cosmopolitan perspectives in the study of the actors, institutions, structures and transactions that constitute international relations.
- CE12: Ability to understand the human rights dimension as the inspiring values of international society and the legal framework on which it is based.
- CE21: Ability to contribute to the design of sustainable growth policies that promote equality, reduce poverty, promote citizen participation and enhance democratization processes

Year: <b>1st</b>	Course code: <b>9978001109</b>	Course: <b>Sociological Research Techniques</b> <i>(Técnicas de investigación sociológica)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P434001109</b>	Course: <b>Sociological Research Techniques</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The scientific process.
- Unit 2. The sociological analysis of social reality.
- Unit 3. The research project: question, objectives, theoretical framework, methodology, hypothesis, etc.
- Unit 4. Qualitative methods: interview, focus groups, ethnography, expert panel and content analysis.
- Unit 5. Quantitative methods: survey and statistics.
- Unit 6. Analysis, presentation and drafting of the final report

**Specific competencies:**

- CE3: Knowledge of how to make use of research techniques to identify problems.
- CE14: Ability to carry out research and studies on the international sphere and the areas that make it up: economic, social, political and cultural.
- CE15: Ability to make use of different sources and channels of information

Year: <b>1st</b>	Course code: <b>9978001110</b>	Course: <b>Current Affairs Observatory</b> <i>(Observatorio de la actualidad)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>P434001110</b>	Course: <b>Current Affairs Observatory</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Definition and concepts: What is an observatory? How to analyze the international news?
- Unit 2. Study and analysis of real situations.
- Unit 3. Historical perspective, political perspective, evolutionary development of the conflict and/or international event. Causes (geographical, demographic, economic factors, nationalism and national interests, terrorism and organized crime, religion and fundamentalism).
- Unit 4. Analysis of world news through articles in specialized magazines, television programs and other audiovisual media.
- Unit 5. Analysis of the effects of current international events (environmental disasters, poverty, economic and financial crises, new and emerging states, armed groups, war and religion).

**Specific competencies:**

- CE7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- CE9: Ability to recognize global, universal and cosmopolitan perspectives in the study of the actors, institutions, structures and transactions that constitute international relations.
- CE15: Ability to make use of different sources and channels of information.
- CE16: Ability to identify and analyze the different geopolitical, geoeconomic and sociocultural areas, as well as their particularities

Year: <b>2nd</b>	Course code: <b>9978001201</b>	Course: <b>Theory of the State &amp; Political System</b> <i>(Teoría del estado y sistemas políticos)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P434001201</b>	Course: <b>Theory of the State &amp; Political System</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Concept of the modern state and elements of the state.</li> <li>Unit 2. Study of the structures and institutions of the state and of the different juridical-political systems that coexist in international society.</li> <li>Unit 3. Analysis of the processes of construction and formation of modern and contemporary states.</li> <li>Unit 4. Type of states. Forms of government. Political systems.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>CE8: Ability to recognize and explain general theories of international relations.</li> <li>CE11: Understanding of the functioning of mainly international legal institutions.</li> <li>CE19: Ability to interpret and analyze legal texts.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9978001202</b>	Course: <b>Public International Law (<i>Derecho internacional público</i>)</b>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>P434001202</b>	Course: <b>Public International Law</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Concept, nature and evolution of public international law: International norms.</li> <li>Unit 2. Subjects of public international law.</li> <li>Unit 3. Sources of public international law.</li> <li>Unit 4. International legal liability.</li> <li>Unit 5. Analysis of the fundamental principles governing peaceful coexistence and cooperation among states and among other international actors.</li> <li>Unit 6. Main functions of public international law I.</li> <li>Unit 7. Main functions of public international law II.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>CE1: Capacity to integrate the normative, doctrinal and jurisprudential framework of public and private legal relations.</li> <li>CE2: Knowledge of the international legal framework and its regulation through treaties, conventions, agreements and resolutions.</li> <li>CE4: Knowledge and understanding of the role of international organizations today – their functions, objectives and internal organization.</li> <li>CE10: Understanding of the basic concepts of international law.</li> <li>CE11: Understanding of the functioning of mainly international legal institutions</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9978001203</b>	Course: <b>Global Economy &amp; Foreign Trade (<i>Economía global y comercio exterior</i>)</b>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>P434001203</b>	Course: <b>Global Economy &amp; Foreign Trade</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Study of the techniques for obtaining, integrating and representing, and analyzing information of a politico-economic nature.</li> <li>Unit 2. The global economy: General approaches to international economic dynamics and economic sectors.</li> <li>Unit 3. Study of the main instruments and policies of foreign trade, and national, regional and global trade, as the main economic action in international relations.</li> <li>Unit 4. Global trends and issues.</li> </ul> <b>Specific competencies:</b>						

- CE5: Ability to know and understand the economic aspects of globalization related to: business internationalization, foreign trade and global economy.
- CE6: Ability to communicate effectively in two languages, generally and specifically in the professional field of international relations.
- CE9: Ability to recognize global, universal and cosmopolitan perspectives in the study of the actors, institutions, structures and transactions that constitute international relations.
- CE12: Ability to understand the human rights dimension as the inspiring values of international society and the legal framework on which it is based.
- CE16: Ability to identify and analyze the different geopolitical, geoeconomic and sociocultural areas, as well as their particularities.

Year: <b>2nd</b>	Course code: <b>9978001204</b>	Course: <b>Cultural Differences &amp; Interculturality</b> ( <i>Diferencias culturales e interculturalidad</i> )	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P434001204</b>	Course: <b>Cultural Differences &amp; Interculturality</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The Concept of culture and its dimensions. 1.1. Definition of culture: Culture and civilization; culture and group; components of culture. 1.2. Dimensions of culture: Geert Hofstede™ Cultural Dimensions Model; Hall Model; Trompenaars Model.
- Unit 2. Integration models. 2.1. The French assimilationist model. 2.2. The multicultural model (United States, Canada).
- Interculturalism.
- 3. Cultural conflicts. 3.1. Comparative description of the main cultures of today's world, their differences, similarities, opportunities for collaboration. 3.2. Cultural conflicts: Stereotypes and prejudices; discrimination, racism and xenophobia. 3.3. Prevention of cultural conflicts.

**Specific competencies:**

- CE3: Knowledge of how to make use of research techniques to identify problems.
- CE6: Ability to communicate effectively in two languages, generally and specifically in the professional field of international relations.
- CE7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- CE9: Ability to recognize global, universal and cosmopolitan perspectives in the study of the actors, institutions, structures and transactions that constitute international relations.
- CE17: Knowledge of how to establish analogies and differences between the different actors present in the international arena

Year: <b>2nd</b>	Course code: <b>9978001206</b>	Course: <b>Foreign Policy of Spain</b> ( <i>Política exterior de España</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P434001206</b>	Course: <b>Foreign Policy of Spain</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Evolution and analysis of the main objectives, principles and strategies of Spanish foreign policy and its short and medium-term perspectives.
- Unit 2. Spain as a small power in the Europe of congresses.
- Unit 3. From internal security to international prestige as objectives of Spanish action.
- Unit 4. The politics of 'recogimiento' (isolationism) in the area of realpolitik.
- Unit 5. Neutrality, Africanism and openness to Ibero-America.
- Unit 6. The idealistic paradigm of the second republic and the internationalization of the Spanish civil war.
- Unit 7. Survival and acceptance of the Franco dictatorship and the Cold War.
- Unit 8. The democratization of foreign policy.



- Unit 9. Europeanism, Atlanticism, Ibero-Americanism and cooperation as axes of foreign policy.
- Unit 10. Determination of the political and economic areas of interest

**Specific competencies:**

- CE11: Understanding of the functioning of mainly international legal institutions.
- CE15: Ability to make use of different sources and channels of information.
- CE17: Knowledge of how to establish analogies and differences between the different actors present in the international arena. CE22: Ability to take an active part in proposing solutions to specific problems and conflicts regardless of the geopolitical area. CE24: Ability to develop a critical attitude for the analysis of the past and the present.
- CE28: Knowledge to inform, evaluate and assess current international facts and situations

Year: <b>2nd</b>	Course code: <b>9978001207</b>	Course: <b>Comparing Legal Systems</b> <i>(Sistemas jurídicos comparados)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>2nd</b>	Course code: <b>P434001207</b>	Course: <b>Comparing Legal Systems</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Comparative law.
- Unit 2. Comparative method.
- Unit 3. Classification of the world's legal families.
- Unit 4. Legal families in Western Europe.
- Unit 5. Common Law family.
- Unit 6. Religious legal systems.
- Unit 7. Eastern law systems.

**Specific competencies:**

- CE11: Understanding of the functioning of mainly international legal institutions.
- CE15: Ability to make use of different sources and channels of information.
- CE19: Ability to interpret and analyze legal texts.
- CE22: Ability to take an active part in proposing solutions to specific problems and conflicts regardless of the geopolitical area.

Year: <b>2nd</b>	Course code: <b>9978001208</b>	Course: <b>Organization of the United Nations</b> <i>(La organización de las Naciones Unidas)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>2nd</b>	Course code: <b>P434001208</b>	Course: <b>Organization of the United Nations</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. International organizations as subjects of Public International Law.
- Unit 2. Background, creation and development of the United Nations in the second half of the twentieth century.
- Unit 4. Structure of the United Nations (I) and (II): Study of its bodies and functioning.
- Unit 5. Main objectives of the United Nations as an international organization.
- Unit 6. Simulation exercise of the Security Council decision-making process through practical case studies

**Specific competencies:**

- CE1: Knowledge and understanding of the historical evolution of international society.
- CE2: Knowledge of the international legal framework and its regulation through treaties, conventions, agreements and resolutions.
- CE4: Knowledge and understanding of the role of international organizations today – their functions, objectives and internal organization.
- CE7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- CE19: Ability to interpret and analyze legal texts.

Year: <b>2nd</b>	Course code: <b>9978001209</b>	Course: <b>Theory &amp; Analysis of International Conflicts</b> ( <i>Teoría y análisis de los conflictos internacionales</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P434001209</b>	Course: <b>Theory &amp; Analysis of International Conflicts</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to international conflicts.
- Unit 2. Study of war as a focus of international relations and of policies and instruments for its prevention.
- Unit 3. Analysis of non-armed conflicts.
- Unit 4. Historical and strategic perspectives of armed conflicts.
- Unit 5. Mechanisms for conflict prevention.

**Specific competencies:**

- CE2: Knowledge of the international legal framework and its regulation through treaties, conventions, agreements and resolutions.
- CE7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- CE22: Ability to take an active part in proposing solutions to specific problems and conflicts regardless of the geopolitical area.
- CE27: Ability to identify and interact with different international actors.

Year: <b>2nd</b>	Course code: <b>9978001210</b>	Course: <b>Management of Multinational Companies</b> ( <i>Gestión de empresas multinacionales</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P434001210</b>	Course: <b>Management of Multinational Companies</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Overview of internationalization.
- Unit 2 The multinational company as an actor with capacity for action in international society: structures and overall management of the company.
- Unit 3. Main economic sectors of activity of multinationals.
- Unit 4. Strategy in an international context.
- Unit 5. Development in an international firm.
- Unit 6 Economic culture in an international context.
- Unit 7. The environment of international businesses.

**Specific competencies:**

- CE5: Ability to know and understand the economic aspects of globalization related to: business internationalization, foreign trade and global economy.
- CE11: Understanding of the functioning of mainly international legal institutions.
- CE14: Ability to carry out research and studies on the international sphere and the areas that make it up: economic, social, political and cultural.
- CE16: Ability to identify and analyze the different geopolitical, geoeconomic and sociocultural areas, as well as their particularities.

Year: <b>3rd</b>	Course code: <b>9978001301</b>	Course: <b>Security &amp; Defense Alliances</b> ( <i>Alianzas de seguridad y defensa</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P434001301</b>	Course: <b>Security &amp; Defense Alliances</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The conceptual framework of security and defense. The concept of collective security, the concept of cooperative security. Human security.
- Unit 2. Study of the main organizations focusing on security and collective defense (Atlantic Alliance, European Union, Transatlantic Relations, OSCE, European Security Alliance).
- Unit 3. Command structure, functions and evolution of objectives and operational strategies.
- Unit 4. Spanish security and defense policy.
- Unit 5. Internal security and cooperation with intelligence services.

**Specific competencies:**

- SC1: Knowledge and understanding of the historical evolution of international society.
- SC4: Knowledge and understanding of the role of international organizations today their functions, objectives and internal organization.
- SC7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- SC9: Ability to recognize global, universal and cosmopolitan perspectives in the study of the actors, institutions, structures and transactions that constitute international relations.
- SC23: Ability to contribute to the promotion of peace policies and proposals for peaceful solutions to conflicts.

Year: <b>3rd</b>	Course code: <b>9978001302</b>	Course: <b>International Economic &amp; Financial Organizations</b> <i>(Organizaciones económicas y financieras internacionales)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P434001302</b>	Course: <b>International Economic &amp; Financial Organizations</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Concept, theories and problems in the international economic-financial environment.
- Unit 2. Main organizations focusing on international economic activity: trade.
- Unit 3. Financing; cooperation and global monetary policy.
- Unit 4. Study of the main global and regional organizations: beyond the nation-state; theories and perspectives.
- Unit 5. Governance and economic globalization

**Specific competencies:**

- SC5: Ability to know and understand the economic aspects of globalization related to: business internationalization, foreign trade and global economy.
- SC16: Ability to identify and analyze the different geopolitical, geoeconomic and sociocultural areas, as well as their particularities.
- SC21: Ability to contribute to the design of sustainable growth policies that promote equality, reduce poverty, promote citizen participation and enhance democratization processes.

Year: <b>3rd</b>	Course code: <b>9978001303</b>	Course: <b>International Public Opinion</b> <i>(Opinión pública internacional)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P434001303</b>	Course: <b>International Public Opinion</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Concepts, topics and actions of public opinion. Public opinion according to sociodemographic characteristics.
- Unit 2. Public opinion as an international actor, debate and strengthening of arguments.
- Unit 3. Empirical research of international public opinion (sampling, questionnaire, interview).

- Unit 4. Opinion polls, surveys and studies.
- Unit 5. Public opinion and mass media.

**Specific competencies:**

- SC3: Knowledge of how to make use of research techniques to identify problems.
- SC6: Ability to communicate effectively in two languages, generally and specifically in the professional field of international relations.
- SC7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- SC9: Ability to recognize global, universal and cosmopolitan perspectives in the study of the actors, institutions, structures and transactions that constitute international relations.
- SC14: Ability to carry out research and studies on the international sphere and the areas that make it up: economic, social, political and cultural.
- SC15: Ability to make use of different sources and channels of information.
- SC17: Knowledge of how to establish analogies and differences between the different actors present in the international arena.
- SC28: Knowledge to inform, evaluate and assess current international facts and situations.

Year: <b>3rd</b>	Course code: <b>9978001304</b>	Course: <b>Foreign Image &amp; Public Diplomacy</b> <i>(Imagen exterior y diplomacia pública)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>3rd</b>	Course code: <b>P434001304</b>	Course: <b>Foreign Image &amp; Public Diplomacy</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Study of public communication strategies to develop and maintain a position of influence in international relations in the global era.
- Unit 2. The overseas image of the state.
- Unit 3. The overseas image of Spain: Spain's brand.
- Unit 4. Nation branding case studies: (Kosovo, South Africa, Australia, China, Russia).
- Unit 5. Image in international organizations (EU) and corporate diplomacy.
- Unit 6. Public diplomacy in the 21st century: United States.
- Unit 7. Diplomacy, culture and digital environments

**Specific competencies:**

- SC23: Ability to contribute to the promotion of peace policies and proposals for peaceful solutions to conflicts.
- SC25: Ability to carry out future forecasting of realities.
- SC26: Ability to contribute through mediation to resolve conflicts in hostile environments.

Year: <b>3rd</b>	Course code: <b>9978001306</b>	Course: <b>International Legal Conflicts</b> <i>(Conflictos internacionales de leyes)</i>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>3rd</b>	Course code: <b>P434001306</b>	Course: <b>International Legal Conflicts</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. The object and content of international conflict of laws: the fundamentals.
- Unit 2. Normative typology and types of international conflicts.
- Unit 3. Regulatory methods and regulatory techniques.
- Unit 4. Problems with the application of regulatory rules.
- Unit 5. International civil procedure law: Competence, process and execution.
- Unit 6. Law of person.
- Unit 7. Family and inheritance.
- Unit 8. Patrimonial law

**Specific competencies:**

- SC2: Knowledge of the international legal framework and its regulation through treaties, conventions, agreements and resolutions.
- SC10: Understanding of the basic concepts of international law.
- SC19: Ability to interpret and analyze legal texts.

Year: <b>3rd</b>	Course code: <b>9978001307</b>	Course: <b>Pressure Groups</b> ( <i>Grupos de presión</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>3rd</b>	Course code: <b>P434001307</b>	Course: <b>Pressure Groups</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Humanitarianism.
- Unit 2. Intelligence agencies.
- Unit 3. Technical vocabulary.
- Unit 4. Social networks and communication media.
- Unit 5. Social movements.

**Specific competencies:**

- SC1: Knowledge and understanding of the historical evolution of international society.
- SC3: Knowledge of how to make use of research techniques to identify problems.
- SC4: Knowledge and understanding of the role of international organizations today – their functions, objectives and internal organization.
- SC5: Ability to know and understand the economic aspects of globalization related to: business internationalization, foreign trade and global economy.
- SC6: Ability to communicate effectively in two languages, generally and specifically in the professional field of international relations.
- SC7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- SC9: Ability to recognize global, universal and cosmopolitan perspectives in the study of the actors, institutions, structures and transactions that constitute international relations

Year: <b>3rd</b>	Course code: <b>9978001308</b>	Course: <b>Diplomatic &amp; Consular Law</b> ( <i>Derecho diplomático y consular</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>3rd</b>	Course code: <b>P434001308</b>	Course: <b>Diplomatic &amp; Consular Law</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Diplomatic law in international relations.
- Unit 2. Historical developments in diplomatic and consular relations.
- Unit 3. Regulation of diplomatic and consular law.
- Unit 4. Diplomatic function.
- Unit 5. Consular function.
- Unit 6. Diplomatic and consular institutional protocol.

**Specific competencies:**

- SC2: Knowledge of the international legal framework and its regulation through treaties, conventions, agreements and resolutions.
- SC6: Ability to communicate effectively in two languages, generally and specifically in the professional field of international relations.
- SC22: Ability to take an active part in proposing solutions to specific problems and conflicts regardless of the geopolitical area. SC26: Ability to contribute through mediation to resolve conflicts in hostile environments.

Year: <b>4th</b>	Course code: <b>9978001401</b>	Course:	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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		<b>International Terrorism &amp; Organized Crime</b> ( <i>Terrorismo internacional y crimen organizado</i> )				
Year: <b>4th</b>	Course code: <b>P434001402</b>	Course: <b>International Terrorism &amp; Organized Crime</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Evolution of the concept of security in international society.</li> <li>Unit 2. Contemporary paradigms and theories of international relations from bipolarity to multipolarity.</li> <li>Unit 3. The origin and evolution of terrorism.</li> <li>Unit 4. The sociology of terrorism. Types of terrorist groups.</li> <li>Unit 5. Al Qaeda.</li> <li>Unit 6. Resources and tools in the fight against terrorism: military and police.</li> <li>Unit 7. Intelligence services as a preventive element.</li> <li>Unit 8. Concept and evolution of organized crime: national and transnational groups and links with terrorist groups (narcoterrorism).</li> <li>Unit 9. National agencies in the fight against organized crime: CICO, specialized FCSE and regional units.</li> <li>Unit 10. International organizations in the fight against organized crime.</li> <li>Unit 11. Protection and prevention of attacks against critical infrastructures.</li> <li>Unit 12. Technological tools and elements in the fight against organized crime and cybercrime.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC3: Knowledge of how to make use of research techniques to identify problems.</li> <li>SC4: Knowledge and understanding of the role of international organizations today – their functions, objectives and internal organization.</li> <li>SC15: Ability to make use of different sources and channels of information</li> </ul>						

Year: <b>4th</b>	Course code: <b>9978001403</b>	Course: <b>Professional Ethics in International Relations</b> ( <i>Ética profesional en las relaciones internacionales</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>4th</b>	Course code: <b>P434001403</b>	Course: <b>Professional Ethics in International Relations</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Ethics: analysis of the ethical approaches that the internationalist must observe in his or her different spheres of professional or diplomatic activity.</li> <li>Unit 2. Philosophical reflection on morality in international relations.</li> <li>Unit 3. The value of justice in international relations.</li> <li>Unit 4. Code of ethics for international relations.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC12: Ability to understand the human rights dimension as the inspiring values of international society and the legal framework on which it is based.</li> <li>SC13: Ability to define and implement development targets in international cooperation agencies and organizations.</li> <li>SC15: Ability to make use of different sources and channels of information.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9978001404</b>	Course: <b>International Negotiation Workshop</b> ( <i>Taller de negociación internacional</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>4th</b>	Course code: <b>P434001404</b>	Course: <b>International Negotiation Workshop</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Classification of negotiations. Definition of the problem and the objective of the negotiation.</li> </ul>						

- Unit 2. The process of international negotiation.
- Unit 3. Development of negotiation and crisis management skills; decision-making theory and analysis of legal and political instruments for mediation, arbitration, conciliation and conflict resolution.
- Unit 4. Method and real situations of international negotiation

**Specific competencies:**

- SC15: Ability to make use of different sources and channels of information.
- SC24: Ability to develop a critical attitude for the analysis of the past and the present.
- SC25: Ability to carry out future forecasting of realities

Year: <b>4th</b>	Course code: <b>9978001405</b>	Course: <b>Environmental Risks &amp; Climate Change</b> ( <i>Riesgos medioambientales y cambio climático</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>4th</b>	Course code: <b>P434001405</b>	Course: <b>Environmental Risks &amp; Climate Change</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to environmental issues and analysis of the concept of climate change.
- Unit 2. Environmental hazards and risks. Concepts and study methods. Importance of environmental risks.
- Unit 3. Situation in Spain and Europe.
- Unit 4. Risks and the context of global dynamics, energies and changes.
- Unit 5. Current environmental problems and future perspectives.
- Unit 6. Climate change: case studies

**Specific competencies:**

- SC12: Ability to understand the human rights dimension as the inspiring values of international society and the legal framework on which it is based.
- SC15: Ability to make use of different sources and channels of information.

Year: <b>4th</b>	Course code: <b>9978001407</b>	Course: <b>International Project Design &amp; Management</b> ( <i>Diseño y gestión de proyecto internacionales</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>4th</b>	Course code: <b>P434001407</b>	Course: <b>International Project Design &amp; Management</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. What is a project? Nature. Characteristics.
- Unit 2. Types of projects. In particular, international projects.
- Unit 3. Design and structure of the project: objectives, phases, allocation of resources.
- Unit 4. Project team, planning and coordination.
- Unit 5. Tools for managing projects.
- Unit 6. Training basis for completing the Final Degree Project.

**Specific competencies:**

- SC3: Knowledge of how to make use of research techniques to identify problems.
- SC7: Knowledge of how to relate and discuss the problematic origins of international instabilities: conflicts, inequalities, exclusion, environment, pressure groups and public opinion, among others.
- SC10: Understanding of the basic concepts of international law.
- SC14: Ability to carry out research and studies on the international sphere and the areas that make it up: economic, social, political and cultural.
- SC15: Ability to make use of different sources and channels of information.

Year: <b>4th</b>	Course code: <b>9978001801</b>	Course: <b>The European Union in the World</b> ( <i>La Unión Europea en el mundo</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>4th</b>	Course code: <b>P434001801</b>	Course: <b>The European Union in the World</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. The European Union as a subject of law. Its unique legal personality.</li> <li>Unit 2. Analysis of the interests and values of the European Union on an international scale.</li> <li>Unit 3. Foreign affairs and security policy. 3.1. Common foreign and security policy. 3.2. Common security and defense policy.</li> <li>Unit 4. Economic and trade affairs within the framework of the European Union.</li> <li>Unit 5. Study of the European Neighborhood Policy.</li> <li>Unit 6. Analysis of the European Union's development and cooperation policies</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC12: Ability to understand the human rights dimension as the inspiring values of international society and the legal framework on which it is based.</li> <li>SC23: Ability to contribute to the promotion of peace policies and proposals for peaceful solutions to conflicts.</li> <li>SC24: Ability to develop a critical attitude for the analysis of the past and the present.</li> <li>SC25: Ability to carry out future forecasting of realities.</li> <li>SC26: Ability to contribute through mediation to resolve conflicts in hostile environments.</li> <li>SC27: Ability to identify and interact with different international actors.</li> <li>SC28: Knowledge to inform, evaluate and assess current international facts and situations.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9978001802</b>	Course: <b>Foreign Policy of the United States of America (Política exterior en los Estados Unidos de América)</b>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>4th</b>	Course code: <b>P434001802</b>	Course: <b>Foreign Policy of the United States of America</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Evolution of the United States in the process of configuration as a global superpower.</li> <li>Unit 2. Analysis of the lines of external action and the doctrines that have developed this policy.</li> <li>Unit 3. Projection of US interests in the short and medium term.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC14: Ability to carry out research and studies on the international sphere and the areas that make it up: economic, social, political and cultural.</li> <li>SC15: Ability to make use of different sources and channels of information.</li> <li>SC17: Knowledge to establish analogies and differences between the different actors present in the international environment</li> </ul>						
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Year: <b>4th</b>	Course code: <b>9978001804</b>	Course: <b>Powers and Emerging Markets (Potencias y mercados emergentes)</b>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>4th</b>	Course code: <b>P434001804</b>	Course: <b>Powers and Emerging Markets</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Current situation and outlook for the world economy and emerging economies: main macroeconomic variables and socio-economic indicators.</li> <li>Unit 2. Internationalization strategies and sources of competition: Analysis of the development potential of certain areas and countries and of strategies to promote development and investment.</li> <li>Unit 3. Integration and influence of new powers.</li> </ul>						
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- Unit 4. Capital flows, external shocks and policy responses in emerging countries.

**Specific competencies:**

- SC14: Ability to carry out research and studies on the international sphere and the areas that make it up: economic, social, political and cultural.
- SC15: Ability to make use of different sources and channels of information.
- SC16: Ability to identify and analyze the different geopolitical, geoeconomic and sociocultural areas, as well as their particularities.
- SC17: Knowledge of how to establish analogies and differences between the different actors present in the international arena.

Year: <b>4th</b>	Course code: <b>9978001805</b>	Course: <b>Middle east and Maghreb</b> ( <i>Oriente medio y Maghreb</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>4th</b>	Course code: <b>P434001805</b>	Course: <b>Middle east and Maghreb</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Conceptual approach to the Middle East and the Maghreb: characteristics of the region and political structures.
- Unit 2. Main regional actors: domestic and international situation.
- Unit 3. Regional organizations and external international actors.
- Unit 4. Analysis of the Arab Spring: common and differentiating factors.
- Unit 5. Geopolitics and ways of resolving the main conflicts in the area in the Maghreb.
- Unit 6. Dynamics of cooperation between actors and study of the evolution of political systems and economic development

**Specific competencies:**

- SC15: Ability to make use of different sources and channels of information.
- SC16: Ability to identify and analyze the different geopolitical, geoeconomic and sociocultural areas, as well as their particularities.
- SC17: Knowledge of how to establish analogies and differences between the different actors present in the international arena.

Year: <b>3th</b>	Course code: <b>9978001806</b>	Course: <b>Global geopolitics</b> ( <i>Geopolítica global</i> )	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3th</b>	Course code: <b>P434001806</b>	Course: <b>Global geopolitics</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Overview of the geopolitical structure of states and areas of economic, political and cultural influence and relationship. Unit 2. Flows and exchanges between states, peoples and cultures.
- Unit 3. An approach to geopolitics through theoretical thought.
- Unit 4. Geopolitical elements and factors.
- Unit 5. The state as a material geopolitical actor: territories, spaces and borders.
- Unit 6. The state as a human actor: population, people, nation.
- Unit 6. Current geopolitical scenarios (i): the big ones.
- Unit 7. Current geopolitical scenarios (ii): the problematic ones.

**Specific competencies:**

- SC23: Ability to contribute to the promotion of peace policies and proposals for political solutions to conflicts.
- SC24: Ability to develop a critical attitude for the analysis of the past and the present.
- SC25: Ability to carry out future forecasting of realities.
- SC26: Ability to contribute through mediation to resolve conflicts in hostile environments.

Year: <b>3th</b>	Course code: <b>9978001808</b>	Course: <b>Community law (EU Law) (<i>Derecho comunitario</i>)</b>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3th</b>	Course code: <b>P434001808</b>	Course: <b>Community law (EU Law)</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Basic principles of the European Union: process of integration.</li> <li>Unit 2. Structure of the European Union and Member States.</li> <li>Unit 3. Community legal system and its guarantees: systems of rules and legislative acts; principles in their relationship with domestic law.</li> <li>Unit 4. Competence system in the European Union.</li> <li>Unit 5. European Union institutions.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC24: Ability to develop a critical attitude for the analysis of the past and the present.</li> <li>SC25: Ability to carry out future forecasting of realities.</li> <li>SC27: Ability to identify and interact with different international actors.</li> <li>SC28: Knowledge to inform, evaluate and assess current international facts and situations</li> </ul>						

Year: <b>3th</b>	Course code: <b>9978001815</b>	Course: <b>The individual and leadership (<i>Liderazgo e individuo</i>)</b>	Program: <b>Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3th</b>	Course code: <b>P434001815</b>	Course: <b>The individual and leadership</b>	Program: <b>Global Bachelor's Degree in International Relations</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. My leadership and the values of the individual.</li> <li>Unit 2. Foundations of leadership.</li> <li>Unit 3. Leadership models and styles.</li> <li>Unit 4. Emotional intelligence applied to the leader.</li> <li>Unit 5. The team and change management.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC25: Ability to carry out future forecasting of realities.</li> <li>SC26: Ability to contribute through mediation to resolve conflicts in hostile environments.</li> <li>SC27: Ability to identify and interact with different international actors.</li> <li>SC28: Knowledge to inform, evaluate and assess current international facts and situations.</li> </ul>						

## School of Sports Sciences

### Bachelor's Degree In Physical Activity And Sports Sciences (English + Spanish)

1	PAIG001101	Human Anatomy		Semestre 1/ Fall Term (Sept-Jan)	English	6
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Year: 1st	Course code: PAIG001102	Course: Systematics of the Movement	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: English	Cr: 6 ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Study of movement.</li> <li>Unit 2. Introduction to gymnastic skills.</li> <li>Unit 3. Health-oriented physical exercise.</li> <li>Unit 4. Introduction to current techniques and methods of physical exercise.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC1: Capacity to design, develop and evaluate teaching-learning processes related to physical activity and sport taking into account the individual and contextual characteristics of people and assuming the necessary educational, technical and curricular principles.</li> <li>SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.</li> <li>SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.</li> <li>SC6: Ability to assess the level of physical fitness and motor skills by prescribing and programming health-oriented physical exercises at different ages.</li> <li>SC7: Capacity to promote and evaluate lasting and autonomous habits of practicing physical activity and sport aimed at health.</li> </ul>						

1	PAIG001103	The Game: Theory and Practice		Semestre 1/ Fall Term (Sept-Jan)	English	4
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Year: 1st	Course code: PAIG001104	Course: Body Expression	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: English	Cr: 6 ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Expressive, creative and communicative capacity of students.</li> <li>Unit 2. Practical application of the contents worked.</li> <li>Unit 3. Analysis of practical and theoretical contents.</li> <li>Unit 4. Co-evaluations and self-evaluations on the contents of the subject.</li> <li>Unit 5. Group dynamics</li> <li>Unit 6. Relaxation- Breathing</li> <li>Unit 7. Evaluation of Body Expression</li> </ul>						

**Specific competencies:**

- SC1: Capacity to design, develop and evaluate teaching-learning processes related to physical activity and sport taking into account the individual and contextual characteristics of people and assuming the necessary educational, technical and curricular principles.
- SC2: Determination, based on specific practices, of the management of the contents of Body Expression.
- SC3: Elaboration and realization of creative movement.
- SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.
- SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.
- SC6: Ability to assess the level of physical fitness and motor skills by prescribing and programming health-oriented physical exercises at different ages.

Year: 1st	Course code: <b>PAIG001105</b>	Course: <b>Psychopedagogy of Physical Activity and Sport</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Psychopedagogy of Physical Activity and Sport
- Unit 2. Learning
- Unit 3. Development at different ages
- Unit 4. Motivation.
- Unit 5. Personality and attitudes
- Unit 6. Psychopedagogical model of Physical Activity and Sport

**Specific competencies:**

- SC1: Capacity to design, develop and evaluate teaching-learning processes related to physical activity and sport taking into account the individual and contextual characteristics of people and assuming the necessary educational, technical and curricular principles.
- SC2: Determination, based on specific practices, of the management of the contents of Body Expression.
- SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.
- SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.
- SC11: Capacity to intervene with their own criteria in society by expressing a theoretical, academic and professional discourse related to the sciences of physical activity and sport.

Year: 1st	Course code: <b>PAIG001106</b>	Course: <b>Theory and History of Physical Activity and Sport</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Knowledge of the genesis of the Sciences of Physical Activity and Sport
- Units 2 and 3. The practice of physical exercise, sport and the assessment of the body human beings in the various historical stages: Greece and Rome
- Units 4 and 5. The practice of physical exercise, sport and the assessment of the body human beings in the various historical stages: Middle and Modern Ages
- Units 6 and 7. The practice of physical exercise, sport and the assessment of the body human beings in the various historical stages: Contemporary Age
- Unit 8. Study of the origin, evolution and development of the Olympic movement
- Unit 9. History of Sport in Contemporary Spain

**Specific competencies:**

- SC2: Determination, based on specific practices, of the management of the contents of Body Expression.
- SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.
- SC11: Capacity to intervene with their own criteria in society by expressing a theoretical, academic and professional discourse related to the sciences of physical activity and sport.

±	PAIG001107	Sociology and Deontology of Physical Activity and Sport		Semestre 1/ Fall Term (Sept – Jan)	English	6
±	PAIG001108	Data Analysis		Semestre 1/ Fall Term (Sept – Jan)	English	4
Year: 1st	Course code: PAIG001109	Course: Basketball	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: English	Cr: 4 ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. - Familiarity with basketball practice</li> <li>Unit 2. - Management ball</li> <li>Unit 3. - Positions and basic movements</li> <li>Unit 4. - Passes and receptions</li> <li>Unit 5. - Dribbling</li> <li>Unit 6.-Throws</li> <li>Unit 7.-Fakes</li> <li>Unit 8.-Moves around the basket</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC01. Capacity to devise, develop and evaluate teaching-learning processes related to physical activity and sports, bearing in mind the characteristics and circumstances of each individual and assuming the necessary educational, technical and curricular principles.</li> <li>SC02. Capacity to transmit attitudes and values as a working professional in all fields of physical activity and sport, participating in the improvement of society.</li> <li>SC03. Capacity to plan, program, apply, control and evaluate training and competition processes at their different levels and for different age groups.</li> <li>SC04. Capacity to analyze and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.</li> <li>SC09. Capacity to promote and evaluate autonomous and lasting health-oriented habits based on physical activity and sports.</li> </ul>						

Year: 1st	Course code: PAIG001801	Course: Football	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: English	Cr: 4 ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. - Training methodology in formative football</li> <li>Unit 2. - Training teaching models of European football.</li> <li>Unit 3. - Programming and Content Planning in Grassroots Football</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC01. Capacity to devise, develop and evaluate teaching-learning processes related to physical activity and sports, bearing in mind the characteristics and circumstances of each individual and assuming the necessary educational, technical and curricular principles.</li> <li>SC03. Capacity to plan, program, apply, control and evaluate training and competition processes at their different levels and for different age groups.</li> <li>SC08: Capacity to design, plan, organise, execute and evaluate programmes of sports and recreational activities of a continuous and/or temporary nature, taking into account all those factors that condition their development in the different professional, social and economic contexts.</li> <li>SC09. Capacity to promote and evaluate autonomous and lasting health-oriented habits based on physical activity and sports.</li> </ul>						

Year: 1st	Course code: PAIG001802	Course: Athletics	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 1	Teaching Language: English	Cr: 4 ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Classification of the different athletic specialties.</li> </ul>						

- Unit 2. Historical evolution.
- Unit 3. Basic regulations.
- Unit 4. Methodology of the different athletic specialties.

**Specific competencies:**

- SC01. Capacity to devise, develop and evaluate teaching-learning processes related to physical activity and sports, bearing in mind the characteristics and circumstances of each individual and assuming the necessary educational, technical and curricular principles.
- SC02. Capacity to transmit attitudes and values as a working professional in all fields of physical activity and sport, participating in the improvement of society.
- SC03. Capacity to plan, program, apply, control and evaluate training and competition processes at their different levels and for different age groups.
- SC09. Capacity to promote and evaluate autonomous and lasting health-oriented habits based on physical activity and sports.

Year: <b>1st</b>	Course code: <b>PAIG001805</b>	Course: <b>Golf I</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>4 ECTS</b>
<p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>• Unit 1: Rules of courtesy.</li> <li>• Unit 2: Regulation.</li> <li>• Unit 3: Basic swing analysis. Unit 4: The Short Game.</li> <li>• Unit 5: The Long Game.</li> <li>• Unit 6: The golf putt.</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>• SC01. Capacity to devise, develop and evaluate teaching-learning processes related to physical activity and sports, bearing in mind the characteristics and circumstances of each individual and assuming the necessary educational, technical and curricular principles.</li> <li>• SC02. Capacity to transmit attitudes and values as a working professional in all fields of physical activity and sport, participating in the improvement of society.</li> <li>• SC03. Capacity to plan, program, apply, control and evaluate training and competition processes at their different levels and for different age groups.</li> <li>• SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.</li> <li>• SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.</li> <li>• SC6: Understanding of concepts related to the principles of golf, technical-tactical resources, regulations, physiological, biomechanical, psychological and social aspects of the different fields of physical activity, sport and recreation at this stage.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9995002201</b>	Course: <b>Human Motricity</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>PAIG001201</b>	Course: <b>Human Motricity</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>• Unit 1. Motor Control. 1.1. Physiological and cognitive bases of voluntary movement.</li> <li>• Unit 2. Motor Learning. 2.1. Theories of motor learning. 2.3. Analysis of motor skills. 2.4. Design of motor learning situations in different areas</li> <li>• Unit 3. Motor Development. 3.1. Human development.</li> </ul> <p><b>Specific competencies:</b></p>						

- SC1: Capacity to design, develop and evaluate teaching-learning processes related to physical activity and sport taking into account the individual and contextual characteristics of people and assuming the necessary educational, technical and curricular principles.
- SC6: Ability to assess the level of physical fitness and motor skills by prescribing and programming health-oriented physical exercises at different ages.
- SC7: Capacity to promote and evaluate lasting and autonomous habits of practicing physical activity and sport aimed at health.

Year: <b>2nd</b>	Course code: <b>9995002202</b>	Course: <b>Human Fisiology</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAIG001202</b>	Course: <b>Human Fisiology</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Conceptual Bases of Human Physiology
- Unit 2. Biochemistry
- Unit 3. General Physiology
- Unit 4. Neurophysiology
- Unit 5. Locomotor system
- Unit 6. Haematology
- Unit 7. Cardiovascular system
- Unit 8. Respiratory system
- Unit 9. Excretory system
- Unit 10. Digestive system
- Unit 11. Endocrinology

**Specific competencies:**

- SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.
- SC6: Ability to assess the level of physical fitness and motor skills by prescribing and programming health-oriented physical exercises at different ages.
- SC7: Capacity to promote and evaluate lasting and autonomous habits of practicing physical activity and sport aimed at health.
- SC11: Capacity to intervene with their own criteria in society by expressing a theoretical, academic and professional discourse related to the sciences of physical activity and sport.

Year: <b>2nd</b>	Course code: <b>9995002203</b>	Course: <b>Didactics</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAIG001203</b>	Course: <b>Didactics</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Basics
- Unit 2. Contexts
- Unit 3. Elements of Teaching and learning. The teacher
- Unit 4. Elements of Teaching and learning. The student
- Unit 5. Elements of Teaching and learning. Teacher-Student Interaction (communication, affective climate, Feedback, group management, ...)
- Unit 6. Elements of Teaching and learning. The tasks / progressions / strategies.
- Unit 7. Organizational Resources (HR) OO.)
- Unit 8. Teaching Styles (U.S.A.)

**Specific competencies:**

- SC02. Capacity to transmit attitudes and values as a working professional in all fields of physical activity and sport, participating in the improvement of society.
- SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.
- SC08: Capacity to design, plan, organise, execute and evaluate programmes of sports and recreational activities of a continuous and/or temporary nature, taking into account all those factors that condition their development in the different professional, social and economic contexts.
- SC09. Capacity to promote and evaluate autonomous and lasting health-oriented habits based on physical activity and sports.
- SC11: Capacity to intervene with their own criteria in society by expressing a theoretical, academic and professional discourse related to the sciences of physical activity and sport.

2	PAIG001204	Sportlaw		FBC	English	6
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Year: 2nd	Course code: 9995002205	Course: Sports biomechanics	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 1	Teaching Language: Spanish	Cr: 6 ECTS
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Year: 2nd	Course code: PAIG001205	Course: Sports biomechanics	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 1	Teaching Language: English	Cr: 6 ECTS
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**Course content/Units:**

- Unit 1: Bases and fundamentals of biomechanics.
- Unit 2: Applications of biomechanics to biological tissues
- Unit 3: Biomechanical Analysis of Sports Gestures

**Specific competencies:**

- SC03. Capacity to plan, program, apply, control and evaluate training and competition processes at their different levels and for different age groups.
- SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.
- SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.
- SC6: Understanding of concepts related to the principles of golf, technical-tactical resources, regulations, physiological, biomechanical, psychological and social aspects of the different fields of physical activity, sport and recreation at this stage.
- SC09. Capacity to promote and evaluate autonomous and lasting health-oriented habits based on physical activity and sports.

Year: 2nd	Course code: 9995002206	Course: Sports Psychology	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: Spanish	Cr: 6 ECTS
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Year: 2nd	Course code: PAIG001206	Course: Sports Psychology	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: English	Cr: 6 ECTS
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**Course content/Units:**

- Unit 1. Areas of application of Psychology in sport.
- Unit 2. Psychological variables involved in the functioning of technicians and athletes. 2.1. Motivation. 2.2. Confidence. 2.3. Activation level. 2.4. Stress. 2.5. Attention and Concentration.
- Unit 3. Psychological evaluation in sport



**Specific competencies:**

- SC02. Capacity to transmit attitudes and values as a working professional in all fields of physical activity and sport, participating in the improvement of society.
- SC4: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.
- SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.
- SC08: Capacity to design, plan, organise, execute and evaluate programmes of sports and recreational activities of a continuous and/or temporary nature, taking into account all those factors that condition their development in the different professional, social and economic contexts.

2	PAIG001208	Mid Degree Project		TBC	English	2
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Year: 2nd	Course code: 9995002806	Course: Cycling I	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: Spanish	Cr: 4ECTS
Year: 2nd	Course code: PAIG001806	Course: Cycling I	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: English	Cr: 4ECTS

**Course content/Units:**

- Unit 1 - History of the bicycle.
- Unit 2 - Basic cycling technique.
- Unit 3 - The bicycle and its components, basic mechanics.
- Unit 4 - Specific clothing of the cyclist.
- Unit 5 – Modalities of Cycling. Cycling-orientation.

**Specific competencies:**

- SC01. Capacity to devise, develop and evaluate teaching-learning processes related to physical activity and sports, bearing in mind the characteristics and circumstances of each individual and assuming the necessary educational, technical and curricular principles.
- SC02. Capacity to transmit attitudes and values as a working professional in all fields of physical activity and sport, participating in the improvement of society.
- SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.
- SC6: Understanding of concepts related to the principles of golf, technical-tactical resources, regulations, physiological, biomechanical, psychological and social aspects of the different fields of physical activity, sport and recreation at this stage.

Year: 2nd	Course code: 9995002807	Course: Swimming I	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: Spanish	Cr: 4ECTS
Year: 2nd	Course code: PAIG001807	Course: Swimming I	Program: Bachelor's Degree In Physical Activity And Sports Sciences	Term: Semester 2	Teaching Language: English	Cr: 4ECTS

**Course content/Units:**

- Unit 1: History of water activities and swimming.
- Unit 2: Objectives of aquatic activities.
- Unit 3: Utilitarian objective.
- Unit 4: Educational objective.
- Unit 5: Recreational objective.

- Unit 6: Water sports included in the RFEN: water polo, jumping, artistic swimming and swimming.

**Specific competencies:**

- SC1: Capacity to design, develop and evaluate teaching-learning processes related to physical activity and sport taking into account the individual and contextual characteristics of people and assuming the necessary educational, technical and curricular principles.
- SC6: Ability to assess the level of physical fitness and motor skills by prescribing and programming health-oriented physical exercises at different ages.
- SC08: Capacity to design, plan, organise, execute and evaluate programmes of sports and recreational activities of a continuous and/or temporary nature, taking into account all those factors that condition their development in the different professional, social and economic contexts.
- SC09: Capacity to promote and evaluate autonomous and lasting health-oriented habits based on physical activity and sports.

Year: <b>2nd</b>	Course code: <b>9995002809</b>	Course: <b>Handball I</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAIG001809</b>	Course: <b>Handball I</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>4ECTS</b>
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**Course content/Units:**

- Unit 1 – Handball as a sport. 1.1. Origin and evolution of handball. 1.2. General characteristics of handball. 1.3. Nomenclature and graphic representation of handball. 1.4. Methodology of teaching handball in the initiation stage.
- Unit 2 – Individual aspects of handball. 2.1. Individual offensive technical-tactical means. 2.2. Individual defensive technical-tactical means. 2.3. Goalkeeper's technical-tactical means
- Unit 3 – Collective aspects of handball. 3.1. Collective tactical means I. 3.2. Introduction to Game Systems.

**Specific competencies:**

- SC02: Capacity to transmit attitudes and values as a working professional in all fields of physical activity and sport, participating in the improvement of society.
- SC03: Capacity to plan, program, apply, control and evaluate training and competition processes at their different levels and for different age groups.
- SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.

Year: <b>2nd</b>	Course code: <b>9995002810</b>	Course: <b>Volleyball I</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAIG001810</b>	Course: <b>Volleyball I</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>4ECTS</b>
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**Course content/Units:**

- Unit 1.-Elaboration of the Process: Programming of pedagogical situations: The minivolley.
- Unit 2.- Concepts and elements of the teaching-learning process of volleyball.
- Unit 3.- The basic models of execution. Execution technique and execution style:
- Unit 4.- Fundamental strategy. Basic Systems of Initiation 6 vs 6

**Specific competencies:**

- SC01: Capacity to devise, develop and evaluate teaching-learning processes related to physical activity and sports, bearing in mind the characteristics and circumstances of each individual and assuming the necessary educational, technical and curricular principles.
- SC02: Capacity to transmit attitudes and values as a working professional in all fields of physical activity and sport, participating in the improvement of society.
- SC03: Capacity to plan, program, apply, control and evaluate training and competition processes at their different levels and for different age groups.

- SC04. Capacity to analyze and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation.
- SC5: Capacity to identify inappropriate practices that pose a risk to health, in order to avoid and correct them in different types of population.
- SC6: Understanding of concepts related to the principles of golf, technical-tactical resources, regulations, physiological, biomechanical, psychological and social aspects of the different fields of physical activity, sport and recreation at this stage.
- SC7: Capacity to promote and evaluate lasting and autonomous habits of practicing physical activity and sport aimed at health.

Year: <b>3rd</b>	Course code: <b>9995002301</b>	Course: <b>School Physical Education</b> ( <i>Educación Física Escolar</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. The education system. 1.1. Evolution of the Spanish Education System. 1.2. The area of Physical Education. 1.3. Key curricular elements in the Secondary and Baccalaureate stages.</li> <li>• Unit 2. Programming, teaching and evaluation of PE: Didactic Units and sessions. 2.1. Fundamental elements of the Didactic Programme. 2.2. The Didactic Unit and the sessions. (SSAA). 2.3. The structure of the session in Physical Education</li> <li>• Unit 3. Pedagogical elements and new methodological trends. 3.1. EF Inclusive. 3.2. Coeducation. 3.3. Interdisciplinarity. 3.4. Education in values. 3.5. Modified games. 3.6. New technologies in the PE classroom. 3.7. Bilingualism. 3.8. Innovation, new trends and approaches (SL, Gamification, etc.)</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9995002302</b>	Course: <b>Health Physical Activity</b> ( <i>Actividad Física para la Salud</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Introduction to Physical Activity, Exercise, and Health . 1.1. Fundamental concepts of the field. 1.2. Background and evolution of physical activity and its relationship with health. 1.3. Risks and benefits of regular physical activity and exercise. 1.4. Strategies for improving the adoption and maintenance of active behaviour</li> <li>• Unit 2: Pre-Exercise Health Assessment. 2.1. Fitness questionnaires for physical exercise. 2.2. Stratification of cardiovascular accident risk. 2.3. Informed consent. Unit 3: Health-related fitness assessment tests. 3.1. Basic principles and guidelines for the conduct of health-related physical fitness tests. 3.2. Body composition. 3.3. Cardiorespiratory fitness. 3.4. Strength . 3.5. Flexibility</li> <li>• Unit 4: General Principles in Prescribing Exercise for Health. 4.1. Type of exercise. 4.2. Main components in an exercise session. 4.3. Exercise Prescription: FITT Principle and Components of Fitness for Health</li> <li>• Unit 5: Prescribing Exercise in Healthy Population with Special Considerations. 5.1. Exercise Prescription in Children. 5.2. Prescription of exercise in older people</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9995002303</b>	Course: <b>Physical Activity Fisiology</b> ( <i>Fisiología del Ejercicio</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Energetic Sources of the Movement</li> <li>• Unit 2. Assessment of Energy Expenditure at Rest and During Physical Activity</li> <li>• Unit 3. Motion Control</li> <li>• Unit 4. Cardiovascular Responses and Adaptations to Exercise</li> <li>• Unit 5. Respiratory Responses and Adaptations to Exercise</li> <li>• Unit 6. Functional capacity. Assessment of biological condition</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9995002304</b>	Course: <b>Sports Training</b> ( <i>Entrenamiento Deportivo</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. General aspects of sports training
- Unit 2. Principles of Sports Training
- Unit 3. Biological Principles of Training
- Unit 4. The Training Load
- Unit 5. Endurance Training
- Unit 6. Strength Training
- Unit 7. Speed Training
- Unit 8. Flexibility Training
- Unit 9. Microcycle Training Sessions

Year: <b>3rd</b>	Course code: <b>9995002305</b>	Course: <b>Sports equipments and facilities</b> <i>(Instalaciones y Espacios Deportivos)</i>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1 – Basic Terminology on Sports Equipment. 1.1. Basic terminology and classification of sports facilities.. 1.2. The sports equipment park in Spain. Historical, socio-economic and demographic aspects.
- Unit 2 – Planning and Design of a Sports Facility. 2.1. Construction and functional characteristics of different types of spaces. Sports. 2.2. Construction and functional characteristics of different types of auxiliary spaces. 2.3. Environmental comfort variables and energy saving measures in facilities Sports.
- Unit 3 – Functional characteristics of different types of sports spaces. 3.1. Large and small rooms. 3.2. Indoor and outdoor swimming pools. 3.3. Large courses and small tracks

Year: <b>3rd</b>	Course code: <b>9995002306</b>	Course: <b>Natural environment activities</b> <i>(Actividades en la Naturaleza)</i>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1.- Introduction to the natural environment and areas of action in nature
- Unit 2.- The figure of the mountain sports technician. 2.1. Certificate of initiation, intermediate and higher cycle. 2.2. Competences
- Unit 3.-Basic Orientation Techniques with Map, Compass and GPS. 3.1. Introduction and orienteering careers. 3.2. Projection, scales, interpretation and calculations. 3.3. Orientation techniques with map and GPS.
- Unit 4.- Civil liability in the mountains
- Unit 5.- Mountain equipment and clothing. 5.1. Introduction and history. 5.2. Fabrics and clothing. 5.3. Progression material
- Unit 6.- Mountaineering, Hiking and Mountaineering. 6.1. Introduction and history. 6.2. Health benefits of activities in nature. 6.3. Itinerary design. 6.4. Management of applications and new technologies
- Unit 7.- Climbing. 7.1. History, modalities and Olympic Games. 7.2. Major injuries. 7.3. Sport climbing training. 7.4. Basic gestural technique in bouldering
- Unit 8.- Other contents of the Nat Media

Year: <b>3rd</b>	Course code: <b>9995002307</b>	Course: <b>Sports Management (Gestión Deportiva)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. The Sports Industry. Basic concepts of Sports Management. Activity Services physical and sporting.
- Unit 2. Strategic planning and organization. Service Evaluation & Quality Management at sports organizations. Continuous improvement as a path to excellence.
- Unit 3. Management Models in Public and Private Physical-Sports Activity.
- Unit 4. Tools and good practices in management. Marketing Plan. Human resources management. Leadership, delegation and communication.
- Unit 5. Preparation of intervention projects

Year: <b>3rd</b>	Course code: <b>9995002308</b>	Course: <b>Leisure, Recreation and Active Tourism (Ocio, Recreación y Turismo Activo)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Concept of leisure and free time.
- Unit 2. New trends in leisure, recreation and active tourism.
- Unit 3. Key aspects in the management of a leisure event.
- Unit 4. Design and planning of hotel entertainment programs.

Year: <b>3rd</b>	Course code: <b>9995002812</b>	Course: <b>Futbol II (Fútbol II)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The game of football
- Unit 2. Organization and structure of the game in football
- Unit 3. Teaching and coaching process in football
- Unit 4. Football training methodology

Year: <b>3rd</b>	Course code: <b>9995002813</b>	Course: <b>Athletics II (Atletismo II)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Study of the historical, regulatory and organisational evolution of the sport of Athletics and its current status.
- Unit 2. Athletic Races: Standings, Updated Regulations, Determining Factors performance, models. Biomechanics, physiology and technique.
- Unit 3. Specific means and methods of training.
- Unit 4. Knowledge and analysis of frequently used planning and scheduling in the various specialties. Means of evaluation and control.
- Unit 5. The practical experience and relative mastery of the basic technical skills of each
- athletic specialty and its special exercises.

Year: <b>3rd</b>	Course code: <b>9995002814</b>	Course: <b>Basketball II (Baloncesto II)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Technical-tactical fundamentals of outside players.
- Unit 2: Technical-Tactical Fundamentals of Interior Players
- Unit 3: Analysis of the collective means of the 2x2.
- Unit 4: Analysis of the collective means of the 3x3.
- Unit 5: Analysis of the collective means of the 4x4.
- Unit 6: The Counterattack. Phases and construction.
- Unit 7: Organization of offensive play. The attack against individual defense.
- Unit 8: Organization of defensive play. Individual defense.
- Unit 9: Zonal defenses. Characteristics types.
- Unit 10: Attack against zonal defenses.
- Unit 11: Training methodology. Design of teaching tasks.
- Unit 12: Team management.
- Unit 13: The rules of the game.
- Unit 14: Physical preparation applied to basketball

<b>3</b>	<b>9995002815</b>	<b>Judo II</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>
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Year: <b>3rd</b>	Course code: <b>9995002816</b>	Course: <b>Artistic Gymnastics II</b> ( <i>Gimnasia Artística-Deportiva II</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Theoretical bases of Artistic Gymnastics as a basic Olympic sport.
- Unit 2. Bases for the preparation of an Initiation and Specialization gymnast.
- Unit 3. Bases for the organization and management of a Children's Sports School of Gymnastics.

Year: <b>3rd</b>	Course code: <b>9995002817</b>	Course: <b>Cycling II</b> ( <i>Ciclismo II</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1 - Cycling Organizational Chart
- Unit 2 - Most important cycling competitions
- Unit 3 – Competition Regulations
- Unit 4 - Structure of a cycling school and a competitive sports group.
- Unit 5 - Structure, Tactics and Strategy
- Unit 6 - Mechanics
- Unit 7 - Food
- Unit 8- Indoor Cycling

Year: <b>3rd</b>	Course code: <b>9995002818</b>	Course: <b>Golf II</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1: Rules.
- Unit 2: Rules of Courtesy.
- Unit 3: Swing Analysis.
- Unit 4: Material in Golf.
- Unit 5: The Modes of Play.
- Unit 6: The Golf Course

Year: <b>3rd</b>	Course code: <b>9995002819</b>	Course: <b>Tennis II</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1- Knowledge of the rules and regulations of tennis.
- Unit 2- Knowledge of the technical-tactical fundamentals of tennis at an advanced level.
- Unit 3- Methodology of teaching tennis at an advanced level.
- Unit 4- Scheduling of sessions for the practice of tennis at an advanced level.

Year: <b>3rd</b>	Course code: <b>9995002820</b>	Course: <b>Swimming II</b> ( <i>Natación II</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1: Technique. Technique training.
- Unit 2: The crawl.
- Unit 3: The back.
- Unit 4: The breaststroke.
- Unit 5: The butterfly.
- Unit 6: Aquatic activities focused on health.

Year: <b>3rd</b>	Course code: <b>9995002821</b>	Course: <b>Handball II (Balonmano II)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1- Advanced study of the rules of the game, matches and competitions and of discipline handball.
- Unit 2- Optimization of individual tactics.
- Unit 3- Detailed study of the different systems of play, both offensive and defensive, of the handball.
- Unit 4- Analysis of the competition.
- Unit 5- Determination of the different variables that can be analyzed.
- Unit 6- Creation of different tools to be able to carry out the different analyses.

Year: <b>3rd</b>	Course code: <b>9995002822</b>	Course: <b>Voleibol II</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The regulations of the rules of the game, matches and competitions, referring to volleyball in its entirety. Refining Stage
- Unit 2. Individual technique and learning and analysing shots.
- Unit 3. Individual tactics and game systems related to the stage of Improvement
- Unit 4. Training methodologies. Their development and learning according to the levels of play.

Year: <b>3rd</b>	Course code: <b>9995002823</b>	Course: <b>Winter Sports II (Deportes de Invierno II)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1- Training of alpine disciplines: Slalom. Giant, Super Giant, and Downhill.
- Unit 2- Planning, management and monitoring of an alpine ski team.
- Unit 3- Organization of international alpine competitions.
- Unit 4- Identification of sports talents, control and functional assessment in alpine skiing

<b>4</b>	<b>9995002826</b>	<b>Dirección Estratégica</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>		<b>Español</b>	<b>6</b>
<b>4</b>	<b>9995002827</b>	<b>Dirección Financiera</b>	<b>Semestre 2 / Spring Term (Jan–Jun)</b>		<b>Español</b>	<b>6</b>

Year: <b>4th</b>	Course code: <b>9995002830</b>	Course: <b>Physical Education for People with Disabilities (Educación Física para Personas con Discapacidad)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Around the basics in light of the turn of the century.
- Unit 2. Choosing a suitable EF for our SEN students.
- Unit 3. Impairment, Disability, Handicap, the concept of mental retardation.
- Unit 4. Sensory channels.
- Unit 5. Experimental evidence on the implications between body movements and channels Sensory.
- Unit 6. The playful activity and the game, its chronology.
- Unit 7. The use of the aquatic environment for this purpose

Year: <b>4th</b>	Course code: <b>9995002831</b>	Course: <b>Physical Exercise Techniques (Técnicas de Ejercicio)</b>	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Physical Exercise Techniques to Improve: Cardiorespiratory Fitness, Strength, and Endurance muscle flexibility, and joint mobility.- Session Type: Structure
- Unit 2. Technique and selection of exercises: safety and equipment
- Unit 3. Mind-Body Exercise Techniques: Pilates, Pilates & Implements, Pilates & EP- Session Type: Structure
- Unit 4. Muscle tests and stretching techniques in PE

Year: <b>4th</b>	Course code: <b>9995002832</b>	Course: <b>Training Planning, Monitoring and Control</b> ( <i>Planificación, Monitorización y Control del Entrenamiento</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1– Training as a science
- Unit 2– Organization and planning of the training process
- Unit 3– Training sessions
- Unit 4– Training microcycles
- Unit 5– Training mesocycles
- Unit 6– Macro training cycles
- Unit 7– Psycho-physiological monitoring of training
- Unit 8– Evaluation of performance in aerobic tests
- Unit 9– Evaluation of performance in anaerobic tests
- Unit 10– Force Assessment
- Unit 11– Performance evaluation in acyclic modalities

Year: <b>4th</b>	Course code: <b>9995002833</b>	Course: <b>Exercise Physiology II and Nutrition</b> ( <i>Fisiología del Ejercicio II y Nutrición</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Functional assessment: concept of maximal oxygen consumption (vo2max)-theoretical-practical seminars (with laboratory practices)
- Unit 2. functional assessment: concept of muscle efficiency and kinetics of the oxygen consumption in submaximal exercises-theoretical-practical seminars (with laboratory practices)
- Unit 3. fatigue
- Unit 4. pathophysiology of clinical exercise. theory & cases

Year: <b>4th</b>	Course code: <b>9995002834</b>	Course: <b>Physical Activity for People with Special Needs</b> ( <i>Actividad Física para Personas con Necesidades Especiales</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Physical Activity, Physical Exercise and Health, Conceptual Framework and Implications.
- Unit 2. Physical Activity and Health Disorders. The Preventive Value of Physical Activity.
- Unit 3. Psycho-social aspects of Physical Activity and Health.
- Unit 4. Fitness and Health Testing.
- Unit 5. Prescription of Physical Exercise programs in the field of Health.
- Unit 6. Environments for the Promotion of Physical Activity and Health.
- Unit 7. Technology applied to Physical Activity and Physical Exercise Programs for Health.
- Unit 8. Safety in Physical Activity and Physical Exercise Programs for Health.

Year: <b>4th</b>	Course code: <b>9995002835</b>	Course: <b>Sports Injuries: Prevention and Functional Recovery</b> ( <i>Lesiones Deportivas: Prevención y Recuperación Funcional</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Overview of the management of sports injuries.
- Unit 2. Histology, pathophysiology and biomechanics of tissues. Addressing the main alterations.



- Unit 3. Spine and core.
- Unit 4. Shoulder girdle, shoulder and cervical spine.
- Unit 5. Hip.
- Unit 6. Knee and Ankle-Foot Complex

4	9995002839	Fútbol III	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9995002840	Atletismo III	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9995002841	Baloncesto III	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9995002842	Judo III	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9995002843	Gimnasia Artística Deportiva III	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9995002844	Ciclismo III	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9995002845	Golf III	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9995002846	Tenis III	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9995002847	Natación III	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9995002848	Balonmano III	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9995002849	Voleibol III	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9995002854	Dirección de Personas	Semestre 1 / Fall Term (Sept–Jan)		Español	6

Year: <b>4th</b>	Course code: <b>9995002855</b>	Course: <b>Commercialization and Marketing of Sports and Leisure</b> ( <i>Comercialización y Marketing Del Deporte y Ocio</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1.- Fundamentals of commercialization and marketing</li> <li>• Unit 2.- market research</li> <li>• Unit 3.- segmentation, positioning and differentiation</li> <li>• Unit 4.- sports and leisure products and services</li> <li>• Unit 5.- prices in the sports and leisure sector</li> <li>• Unit 6.- distribution in sports and leisure</li> <li>• Unit 7.- communication in sport and leisure</li> <li>• Unit 8.- new trends in the commercialization and marketing of sports and leisure</li> </ul>						

Year: <b>4th</b>	Course code: <b>9995002856</b>	Course: <b>Design &amp; Planning Of Sports Facilities</b> ( <i>Diseño y Planificación De Instalaciones Deportivas</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Basic terminology and classification of spaces.</li> <li>• Unit 2. Design of sports facilities</li> <li>• Unit 3. Design, refurbishment and/or reconversion of urban resources, green areas and spaces free in the city for physical-sports activity.</li> <li>• Unit 4. Maintenance and conservation of sports facilities. Maintenance management</li> </ul>						

Year: <b>4th</b>	Course code: <b>9995002857</b>	Course:	Program:	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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		<b>Technical Management of Sports Entities</b> ( <i>Dirección Técnica de Entidades Deportivas</i> )	<b>Bachelor's Degree In Physical Activity And Sports Sciences</b>			
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Classification of the typology of sports services. Start-up and quality.</li> <li>Unit 2. Technical management. The role of the sports manager</li> <li>Unit 3. Management in sports entities. Direction and management of resources to generate activities.</li> <li>Unit 4. Planning and management of sports activities or services. Tools</li> <li>Unit 5. Process management and direction in sports services</li> </ul>						

Year: <b>4th</b>	Course code: <b>9995002861</b>	Course: <b>New Technologies Applied to High Performance Sports</b> ( <i>Nuevas Tecnologías Aplicadas al Alto Rendimiento Deportivo</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Introduction</li> <li>Unit 2: information</li> <li>Unit 3: wearables</li> <li>Unit 4: apps</li> <li>Unit 5: sports planning software</li> <li>Unit 6: gps</li> <li>Unit 7: heart rate monitors</li> <li>Unit 8: force measurement</li> <li>Unit 9: measuring jumping capacity</li> <li>Unit 10: latest developments</li> </ul>						

Year: <b>4th</b>	Course code: <b>9995002862</b>	Course: <b>Training of Coaches for High Performance Sports</b> ( <i>Formación de Entrenadores Para el Alto Rendimiento Deportivo</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1- Coaches' expertise</li> <li>Unit 2- team management</li> <li>Unit 3- coaching tools applied to sports teams</li> <li>Unit 4- leadership and management of sports teams</li> <li>Unit 5. emotional intelligence in sports coaches</li> </ul>						

Year: <b>4th</b>	Course code: <b>9995002863</b>	Course: <b>Specific Types of Training and Control Tests in High Performance Sports</b> ( <i>Medios Específicos de Entrenamiento y Pruebas de Control en el Alto Rendimiento Deportivo</i> )	Program: <b>Bachelor's Degree In Physical Activity And Sports Sciences</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Sports development process. Stages and systems for High Performance Sports.</li> <li>Unit 2. Planning of main and operational objectives in High Performance Sports.</li> <li>Unit 3. Assessment and Control in High Performance Sports.</li> <li>Unit 4. Means of specific training of physical qualities and in different sports.</li> <li>Unit 5. Scheduling management. Strategic plan for high performance sports</li> </ul>						

## Bachelor's degree in Physiotherapy (English + Spanish)

1	PAOW001101	Structure and Function of the Human Body	Annual / Full-year		English	12
1	PAOW001102	Cell and Tissue Biology	Semestre 1 / Fall Term (Sept-Jan)		English	6
1	PAOW001103	Biophysics	Semestre 1 / Fall Term (Sept-Jan)		English	6
1	PAOW001104	Basic Physical Therapies	Semestre 1 / Fall Term (Sept-Jan)		English	6

Year: 1st	Course code: PAOW001105	Course: <b>Anatomy: Locomotor Apparatus and Nervous System</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: Peripheral Nervous System.</li> <li>Unit 2: Trunk musculoskeletal system</li> <li>Unit 3: Lower extremity (osteology, arthrology, myology, vascularization)</li> <li>Unit 4: Upper extremity (osteology, arthrology, myology, vascularization)</li> <li>Unit 5: Head and neck</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC29: Know and use the International Anatomical Nomenclature to name the different anatomical structures.</li> <li>SC30: Describe anatomical structures with appropriate language.</li> <li>SC33: Recognize anatomical structures with imaging techniques.</li> <li>SC34: Have the ability to understand and synthesize simple anatomical articles.</li> <li>SC36: Respect the practice material.</li> <li>SC112: Identify and know the morphology of the bone, joint, muscular, nervous and vascular components of the musculoskeletal system.</li> <li>SC113: Relate the shape of the elements of the musculoskeletal system with their function.</li> <li>SC114: Know and identify the components of the nervous system, and their function.</li> <li>SC115: Know the relationships between anatomical structures.</li> </ul>						

Year: 1st	Course code: PAOW001106	Course: <b>Applied Psychosocial Sciences and Communication Skills</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. 1.1. Introduction to psychology and health psychology. The health-illness continuum. 1.2. Theoretical models of action: biomedical model and biopsychosocial model. 1.3. Health behaviors.</li> <li>Unit 2. 2.1. Therapeutic relationship and communication skills. 2.2. Adherence to treatment.</li> <li>Unit 3. 3.1. Emotion, stress and coping. 3.2. Fears. 3.3. Pain. 3.4. Occupational health. Work stress and burnout.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC78</li> <li>SC79</li> <li>SC80</li> <li>SC81</li> <li>SC82</li> <li>SC83</li> <li>SC84</li> <li>SC85</li> </ul>						

Year: 1st	Course code: PAOW001107	Course: <b>Basic Manual Therapy</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						

- Unit 1. Theoretical bases and development of manual and instrumental methods and procedures of Assessment in Physiotherapy
- Unit 2. Knowledge of the various tests and functional checks, in their foundations, modalities and techniques, as well as the scientific evaluation of their usefulness and effectiveness:
- Unit 3. Study and application of movement as a therapeutic measure, in the different parts of the musculoskeletal system: head and trunk, upper and lower limb

**Specific competencies:**

- SC108: Acquire the ability to reason and apply the different physical agents applied in physiotherapy.
- SC109: Acquire knowledge of the physiological and structural changes that may occur as a result of the application of physical agents.
- SC110: Initiate the student in physiotherapy diagnosis.
- SC111: Obtain the necessary skill in the application of movement as a therapeutic measure

Year: <b>1st</b>	Course code: PAOW001108	Course: <b>Public health. Ethics and Professional Deontology</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

PUBLIC HEALTH

- Unit 1: The Concept of Health and Public Health.
- Unit 2: Basic Concepts of Demography and Their Application to Public Health
- Unit 4: Prevention and Levels of Prevention. Health Promotion. Health Education
- Unit 5: Organisation of Healthcare Services. Health Economics. Performance of Healthcare Systems
- Unit 6: Epidemiology and the Prevention of Highly Prevalent Chronic Diseases.
- Unit 7: Epidemiology and Infectious Disease Prevention.

PROFESSIONAL ETHICS AND CONDUCT

- Unit 1. Ethical Foundations: Ideal Values and Principles Governing the Healthcare Professional's Decision Making
- Unit 2: Ethics of the Health Professional-Patient Relationship (Professional Conduct)
- Unit 3: Bioethics in the Different Areas of Clinical Research and Technological Advances in Existing Diagnosis and Treatment Techniques

**Specific competencies:**

- SC86: Analyse the determinants of health in different population groups: socioeconomic, environmental, lifestyle determinants, etc.
- SC87: Knowledge of the organisation of the health system and the impact of social health policy on professional practice.
- SC88: Value the importance of being a health worker and work with services dedicated to health.
- SC89: Know and enhance the role of the physiotherapist in health promotion and disease prevention activities.
- SC90: Incorporate ethical principles into daily professional practice to ensure the dignity and fundamental rights of patients.
- SC91: Identify ethical problems in everyday practice and know how to apply reasoning and critical judgement to resolve them.

Year: <b>2nd</b>	Course code: <b>9996001814</b>	Course: <b>Manual Orthopaedic Therapy I: Clinical Reasoning</b> ( <i>Terapia manual ortopédica I: Razonamiento clínico</i> )	Program: <b>Bachelor's degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P825001814</b>	Course: <b>Manual Orthopaedic Therapy I: Clinical Reasoning</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Scientific base
- Unit 2. Assessment principles in manual orthopedic therapy
- Unit 3. Establish a scientific basis for clinical reasoning
- Unit 4. Acquisition of diagnostic skills with clinical cases, Critical reading of the different articles of clinical reasoning with scientific evidence

**Specific competencies:**

- SC2: Ability to design the Physiotherapy Intervention or Treatment Plan.
- SC3: Ability to determine the diagnosis of Physiotherapy.
- SC4: Ability to provide effective and comprehensive care.

- SC7: Ability to execute, direct and coordinate the physiotherapy intervention plan.
- SC9: Ability to apply quality assurance mechanisms in the practice of physiotherapy, according to recognized and validated criteria.
- SC10: Capacity to intervene in health promotion and disease prevention.
- SC14: Ability to incorporate the ethical and legal principles of the profession into the professional culture.

Year: <b>2nd</b>	Course code: <b>9996001201</b>	Course: <b>Biomechanics (Biomecánica)</b>	Program: <b>Bachelor's degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>PAOW001201</b>	Course: <b>Biomechanics</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1: Anthropometry and mechanical properties of the musculoskeletal system. 1.1. Kinematics. 1.2. Dynamics. 1.3. Static. 1.4. Kinetics
- Unit 2: Description and analysis, from the biomechanical and ergonomic point of view, of the normal and altered movement of the human being. 2.1. Normal gait pattern. 2.2. Alterations of human gait
- Unit 3: Measurement of human movement using instrumental methods and techniques.. 3.1. Kinematic analysis techniques. 3.2. Kinetic analysis techniques

**Specific competencies:**

- SC1: Ability to examine and assess the functional status of the patient/user.
- SC8: Ability to evaluate the evolution of results.
- SC10: Capacity to intervene in health promotion and disease prevention.
- SC92: Apply the principles and theories of physics, biomechanics, kinesiology and ergonomics, oriented to physiotherapy.

Year: <b>2nd</b>	Course code: <b>9996001202</b>	Course: <b>Special Techniques in Fisioterapia I (Técnicas especiales en fisioterapia I)</b>	Program: <b>Bachelor's degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>PAOW001202</b>	Course: <b>Special Techniques in Fisioterapia I</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1. Evaluation, assessment, clinical reasoning and anatomical, biomechanical and neurophysiological bases. 1.1. Tissue repair. 1.2. Pain. 1.3. Clinical reasoning
- Unit 2. Soft tissue approach. 2.1. Myofascial pain syndrome and manual treatment of trigger points. 2.2. Special and instrumental massage therapy 2.3. Orthopaedic manual therapy techniques
- Unit 3. Functional Bandage Techniques in Physiotherapy

**Specific competencies:**

- SC116: Acquire sufficient knowledge for the application of physiotherapy techniques taught in the module.
- SC117: Obtain the necessary skill to carry out the physiotherapy techniques taught in the module.
- SC118: Know the assessment tests aimed at knowing the functional status of the patient.
- SC119: Acquire the ability to teach the patient to prevent injuries.

Year: <b>2nd</b>	Course code: <b>PAOW001203</b>	Course: <b>Clinic documentation and Research Methodology</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Research Methodology in Health Sciences. 1.1: Research in Health Sciences. 1.2: Study strategies and designs
- Unit 2: Descriptive and Inferential Statistics. 2.1. Introduction to statistics. 2.2. Descriptive statistics. 2.3. Estimation and hypothesis testing. 2.4. Predictive statistics. 2.5. Inferential Statistics
- Unit 3: SPSS Database Management. 3.1. Computer-based statistical analysis
- Unit 4: Specific Aspects of Physiotherapy Research. 4.1. Research in physiotherapy

- Unit 5: Evidence-based Physiotherapy Practice. 5.1. Evidence in physiotherapy
- Unit 6: Scientific Publications in Health Sciences: Databases, Searching Techniques and Document Retrieval. 6.1. Clinical documentation
- Unit 7: Written and Spoken Scientific Communication. How to Write Research Papers. 7.1. Scientific writing

**Specific competencies:**

- SC14: Ability to incorporate the ethical and legal principles of the profession into your professional culture.
- SC93: Knowledge and learning of: Research and evaluation methodologies that allow for the integration of perspectives on theory and research experiences in the design and implementation of effective physiotherapy. Theories underpinning problem-solving skills and clinical reasoning.
- SC94: Maintain an attitude of learning and improvement. This includes showing interest and constantly striving for new information and professional development.

Year: <b>2nd</b>	Course code: <b>9996001204</b>	Course: <b>Medic Pathology and Pharmacology I</b> <i>(Patología médica y farmacología I)</i>	Program: <b>Bachelor's degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAOW001204</b>	Course: <b>Medic Pathology and Pharmacology I</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Overview of medical pathology:
- Unit 2. Pharmacology
- Unit 3. Geriatrics
- Unit 4. Respiratory system: Pathology and Pharmacology

**Specific competencies:**

- SC120: Know and understand the pathophysiological mechanism of the different diseases, developing the ability to relate between the different processes studied.
- SC121: Recognize diseases of different organs and systems, with special emphasis on those most related to the practice of physiotherapy.
- SC122: The student must know at the end of the study of the module, the terminology that allows him to communicate with the rest of the health personnel, as well as understand the different documents that can constitute a medical history.
- SC123: Learn to observe the patient as a whole knowing how to detect the warning signs that may require an interconsultation with other health professionals.
- SC124: Deepen the specific characteristics of the disease in the elderly patient.
- SC125: Know the general pharmacological bases.
- SC126: Identify the pharmacological group of treatments most used in physiotherapy.

Year: <b>2nd</b>	Course code: <b>9996001205</b>	Course: <b>Special Techniques in Fisioterapia II</b> <i>(Técnicas especiales en fisioterapia II)</i>	Program: <b>Bachelor's degree in Physiotherapy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAOW001205</b>	Course: <b>Special Techniques in Fisioterapia II</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Prescription in Physiotherapy of Muscle Strength Exercises
- Unit 2. Introduction to Cardiac Rehabilitation
- Unit 3. Muscle-tendon analytical stretching techniques in physiotherapy and functional assessment.
- Unit 4. Neurophysiological Effects of Motor Control, Proprioceptive neuromuscular facilitation and Sensitive-Perceptual-Motor Re-education

**Specific competencies:**

- SC116: Acquire sufficient knowledge for the application of physiotherapy techniques taught in the module.
- SC117: Obtain the necessary skill to carry out the physiotherapy techniques taught in the module.
- SC118: Know the assessment tests aimed at knowing the functional status of the patient.
- SC119: Acquire the ability to teach the patient to prevent injuries.

Year: <b>2nd</b>	Course code: <b>9996001206</b>	Course: <b>Health Legislation and Management Skills</b> ( <i>Legislación Sanitaria y Habilidades de Gestión</i> )	Program: <b>Bachelor's degree in Physiotherapy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>PAOW001206</b>	Course: <b>Health Legislation and Management Skills</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Basic health legislation: Autonomous and National</li> <li>Unit 2. Regulations applicable to health activities in the Community of Madrid Health law</li> <li>Unit 3. Basic concepts in health management</li> <li>Unit 4. Marketing and trends in the pseudo healthcare market</li> <li>Unit 5. Human Resources Management</li> <li>Unit 6. Introduction to analytical and budgetary economics</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC95: Know the trajectory of Spanish health until current configuration.</li> <li>SC96: Understanding the Spanish Health System and the division of competences</li> <li>SC97: Know the regulations applicable to the profession of Physiotherapy and the general health professions</li> <li>SC98: Know the basic principles of the management of public and private health centers</li> <li>SC99: Know how to handle the basic instruments of government in health administration</li> </ul>						

Year: <b>2nd</b>	Course code: <b>PAOW001207</b>	Course: <b>Modern Language</b> (Language: Spanish)	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note 1:</b> the level of the pass will be Spanish B2. A Spanish B1 is recommended to take this course <b>Note 2:</b> the Spanish taught is focused on clinic cases <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Vocabulary on topics of general/current interest and specific to the field of study.</li> <li>Unit 2. Grammatical and communication structures in Spanish.</li> <li>Unit 3. Listening exercises on topics of general interest and/or the field of study.</li> <li>Unit 4. Oral and written communication in Spanish.</li> <li>Unit 5. How to give a good multimedia presentation in Spanish.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9996001208</b>	Course: <b>Medic Pathology and Pharmacology II</b> ( <i>Patología médica y farmacología II</i> )	Program: <b>Bachelor's degree in Physiotherapy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>PAOW001208</b>	Course: <b>Medic Pathology and Pharmacology II</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Cardiovascular diseases and pharmacology</li> <li>Unit 2. Musculoskeletal diseases and pharmacology</li> <li>Unit 3. Diseases of the nervous system and pharmacology</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC120: Know and understand the pathophysiological mechanism of the different diseases, developing the ability to relate between the different processes studied.</li> <li>SC121: Recognize diseases of different organs and systems, with special emphasis on those most related to the practice of physiotherapy.</li> <li>SC122: The student must know at the end of the study of the module, the terminology that allows him to communicate with the rest of the health personnel, as well as understand the different documents that can constitute a medical history.</li> </ul>						

- SC123: Learn to observe the patient as a whole knowing how to detect the warning signs that may require an interconsultation with other health professionals.
- SC124: Deepen the specific characteristics of the disease in the elderly patient.
- SC125: Know the general pharmacological bases.
- SC126: Identify the pharmacological group of treatments most used in physiotherapy.

Year: <b>2nd</b>	Course code: <b>9996001821</b>	Course: <b>Sports Physiotherapy I (Fisioterapia deportiva I)</b>	Program: <b>Bachelor's degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>PAOW001821</b>	Course: <b>Sports Physiotherapy I</b>	Program: <b>Bachelor's degree in Physiotherapy 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1: Physiology of Physical Activity
- Unit 2: Clinical reasoning in sports physiotherapy
- Unit 3: Sports Massage
- Unit 4: Field Care and First Aid
- Unit 5: Introduction to Prevention
- Unit 6: Cryotherapy
- Unit 7: Sports injuries of the lower limbs, upper limbs and back. (Dynamics)

**Specific competencies:**

- SC2: Ability to design the Physiotherapy Intervention or Treatment Plan.
- SC3: Ability to determine the diagnosis of Physiotherapy.
- SC5: Ability to keep knowledge, skills and attitudes up to date.
- SC6: Ability to prepare and complete the clinical history of physiotherapy.
- SC10: Capacity to intervene in health promotion and disease prevention.
- SC20: Ability to maintain an attitude of learning and improvement.
- SC36: Respect the practice material.
- SC49: Know and understand in an integrated way the responses and adaptations of the organism to physical activity.
- SC61: To know the relationship between physical activity and various pathologies: effects of physical activity and considerations regarding the prescription of exercise in subjects with these pathologies.
- SC119: Acquire the ability to teach the patient to prevent injuries: Understand and recognize the social and psychological aspects related to the treatment of patients.

Year: <b>3rd</b>	Course code: <b>9996001301</b>	Course: <b>Surgical pathology and radiology I (Patología Quirúrgica y Radiología I)</b>	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: General Surgical Pathology. 1.1. Anaesthesia. Anaesthesia techniques. Pain in surgery. Prophylaxis and treatment of postoperative pain. 1.2. Bruising and wounds. Healing process. Problems with scarring. 1.3. Burns: thermal, electrical and chemical. Cold injuries. 1.4. Polytrauma patient care. Central nervous system additional tests. 1.5. Infection in surgery. Prevention and treatment of surgical infections. Local infection: phlegmon and abscess. Systemic infection: sepsis. 1.6. Bone and joint infections. 1.7. Benign bone tumours and pseudotumours. Malignant bone tumours.
- Unit 2: Introduction to Radiology. 2.1. Physics and applications of plain X-rays. 2.2. Physics and applications of CT, MRI and ultrasound. 2.3. Physics and applications of other additional imaging tests. 2.4. Additional tests for the study of the peripheral nervous system.
- Unit 3: Pathophysiology of Musculoskeletal Disorders. 3.1. Bone pathophysiology. 3.2. Aetiology and general mechanism of fractures. Clinic. Classification. 3.3. Fracture healing process. General treatment of fractures. Principles of osteosynthesis. 3.4. Fracture callus. Defective consolidation. Delayed consolidation and pseudarthrosis. 3.6. Pathophysiology of the growth plate. Epiphysiolysis. 3.7. Pathophysiology of cartilage. 3.9. Joint cartilage injuries. Repair mechanisms. 3.10. Age-related changes in joint cartilage. Arthrosis 3.11. Acute arthritis. Other arthropathies. 3.13. Pathophysiology of other tissues of the musculoskeletal system. 3.14. . Muscle conditions. 3.16. . Tendon and synovial sheath conditions. 3.17. Ligament and



meniscus conditions. 3.18. Peripheral nerve conditions. 3.19. Compartment syndrome and its complications. Complex regional pain syndrome.

- Unit 4: Conditions of the Spine and Skull. 4.1. Cervical Spine. 4.2. Anatomy and Radiology of the cervical spine. 4.3. Traumatic cervical spine injuries. 4.4. Neck pain. 4.5. Thoracic and lumbar spine. 4.6. Anatomy and Radiology of the thoracolumbar spine. 4.7. Traumatic thoracolumbar spine injuries. 4.8. Lower back pain and back deformities

Year: <b>3rd</b>	Course code: <b>9996001302</b>	Course: <b>Neurological Physiotherapy</b> <i>(Fisioterapia Neurológica)</i>	Program: <b>Global Bachelor's</b> <b>Degree in Physiotherapy</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
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**Course content/Units:**

- Unit 1: Neurological Physiotherapy in Adult Patients. 1.1. Neuroplasticity. 1.2. Movement and posture. 1.3. Motor learning. 1.4. Neuroscience applied to physiotherapy. 1.5. Assessment and treatment. 1.6. Facilitation techniques and patient management.
- Unit 2: Neurological Physiotherapy in Paediatric Patients. 2.1: Introduction to physiotherapy in paediatric neurology: 2.2: Neuroscience. 2.3: Child assessment. 2.4: Developmental disorders. 2.5: Therapeutic approaches

Year: <b>3rd</b>	Course code: <b>9996001303</b>	Course: <b>Osteopathic physiotherapy I</b> <i>(Fisioterapia Osteopática I)</i>	Program: <b>Global Bachelor's</b> <b>Degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. General Theory. 1.1. General theory. Introduction, History, Fundamentals, Spinal biomechanics, Lines of gravity, Polygon of forces, Pivots, Somatic dysfunction, Osteopathic diagnosis and treatment
- Unit 2. Diagnosis and Treatment of the Lumbar Spine. 2.1. Diagnosis and treatment of the lumbar spine: Visual examination, Palpation. Test: Quick scan; lumbar rebound; asymmetries; mobility analytics; soft tissue treatment; muscle energy techniques; impulse techniques.
- Unit 3. Diagnosis and Treatment of the Dorsal Spine and 1st Rib. 3.1. Diagnosis and treatment of the dorsal spine and 1st rib: Visual examination. Palpation. Test: Quick scan; asymmetries; mobility analytics; breathing tests. Muscle energy techniques. Thrust techniques. Breathing techniques.

Year: <b>3rd</b>	Course code: <b>9996001304</b>	Course: <b>Physiotherapy in Medical Surgical Procedures</b> <i>(Fisioterapia en los Procesos Médico-Quirúrgicos)</i>	Program: <b>Global Bachelor's</b> <b>Degree in Physiotherapy</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
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**Course content/Units:**

- Unit 1: Key concepts
- Unit 2: pathophysiological processes
- Unit 3: burns
- Unit 4: physiotherapy for the nervous system
- Unit 5: upper limb conditions
- Unit 6: lower limb conditions
- Unit 7: spine conditions
- Unit 8: rheumatology section on respiratory physiotherapy in medical surgical procedures
- Unit 9. physiology and anatomy of the cardiorespiratory system
- Unit 10. examination and assessment of the respiratory system
- Unit 11. respiratory physiotherapy treatment

Year: <b>3rd</b>	Course code: <b>9996001305</b>	Course: <b>Surgical pathology and radiology II</b> <i>(Patología Quirúrgica y Radiología II)</i>	Program: <b>Global Bachelor's</b> <b>Degree in Physiotherapy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Pelvic, hip and thigh conditions. 1.1. Anatomy and radiology of the pelvis, hip and thigh. 1.2. Pelvic injuries. Pelvic ring fractures. Acetabular fractures. Hip dislocations. 1.3. Proximal femur fractures. Diaphyseal femur fractures. 1.4. Children's hips: Developmental dysplasia of the hip. Septic arthritis of the hip. Transient synovitis of the hip. Legg-Calvé-Perthes disease. Proximal femoral epiphysiolysis. 1.5. Hip pain in adults.
- Unit 2: Knee and leg conditions. 2.1. Anatomy and radiology of the knee and leg. 2.2. Knee joint injuries. 2.3. Diaphyseal tibia fractures. 2.4. Extensor apparatus and patella injuries. 2.5. Knee ligament injuries. 2.6. Meniscus tear in the knee. 2.7. Knee pain in adults. 2.8. Knee pain in children.

- Unit 3: Ankle and foot conditions. 3.1. Anatomy and radiology of the ankle and foot. 3.2. Ankle sprains. Ankle fractures. Tibial pilon fractures. 3.4. Foot injuries. Fractures of the tarsal bones. Fractures of the metatarsals and toes. 3.5. Foot deformities. 3.6. Foot pain: heel pain and metatarsalgia.
- Unit 4: Shoulder and arm conditions. 4.1. Anatomy and radiology of the shoulder and arm. 4.2. Shoulder injuries (1): Fractures of the scapula. Clavicle fractures. Proximal humerus fractures. Diaphyseal humerus fractures. 4.3. Shoulder injuries (2): Acromioclavicular and sternoclavicular dislocation. Glenohumeral dislocation. 4.4. Shoulder pain (1): Subacromial impingement syndrome, rotator cuff tendinopathy. 4.5. Shoulder pain (2): Calcifying tendinitis, SLAP tears, adhesive capsulitis
- Unit 5: Elbow and forearm conditions. 5.1. Anatomy and radiology of the elbow and forearm. 5.2. Fractures of the elbow region. Elbow dislocations and fracture dislocations. 5.3. Forearm injuries and fracture dislocations. 5.4. Elbow pain syndromes.
- Unit 6: Wrist and hand conditions. 6.1. Anatomy and radiology of the wrist and hand. 6.2. Distal radius fractures. Wrist fractures. 6.3. Fractures of the carpal bones. Fracture dislocations of the carpus. Triangular fibrocartilage tears. 6.4. Open hand injuries: concept, examination and treatment. Tendon Injuries. Closed hand injuries: metacarpal and phalangeal fractures and dislocations. 6.5. Hand and wrist pain. Dupuytren's disease. Acquired hand deformities.
- Unit 7: Peripheral nerve conditions. 7.1. Brachial plexus injuries. 7.2. Nerve compression and injuries in the upper limb

Year: <b>3rd</b>	Course code: <b>9996001306</b>	Course: <b>Osteopathic Physiotherapy II and muscle chains</b> ( <i>Fisioterapia Osteopática II y Cadenas Musculares</i> )	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Anatomy, joint physiology and somatic dysfunctions of the cervical spine. Anatomy, joint physiology and somatic dysfunctions of the pelvis.
- Unit 2. Fundamentals of manual therapy and osteopathy; spinal biomechanics; neurophysiological bases; somatic dysfunction; osteopathic diagnosis and treatment, holistic treatment techniques.
- Unit 3. Diagnosis and Treatment: Cervical spine, pelvis and sacrum.
- Unit 4. General considerations; what is a muscle chain: Muscle chain methods.
- Unit 5. Body language; balance of a standing person; effects of breathing on the erectness of the spine; typologies.
- Unit 6. Diagnosis and Treatment of Different Types of Spine Disorders.

Year: <b>4th</b>	Course code: <b>9996001402</b>	Course: <b>Orthotics and Prosthetics</b> ( <i>Órtesis y Prótesis</i> )	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Prostheses. 1.1. Amputations and treatment. 1.2. Orthoses for the lower limb. 1.3. Orthoses for the upper limb. 1.4. Orthoprosthesis for deformities. 1.5. Osseointegration in amputees. 1.6. Bionic prostheses. 1.7. Alignment of prostheses. 1.8. 3D printing.
- Unit 2. Neuro-orthoses. 2.1. Skull deformities. 2.2. Neuro-orthoses. Foot-drop splints. Walking aids. 2.3. Support aids. Technical aids. 2.4. Support aids. Computer access adaptations.
- Unit 3. Torso Orthoses. 3.1. Overview: history, concepts, classification and materials. 3.2. Neck orthoses: Neck injuries and biomechanics. Neck braces. Pillows. 3.3. Spinal deformities: Kyphosis: Scheuermann's disease. Aetiology, symptoms and examination. Orthotic Treatment. 3.4. Spinal deformities: Scoliosis: aetiology, classification, anatomical pathology and examination. Orthoses for scoliosis in children. Back braces: Milwaukee, Boston, Charleston, Michel, Chêneau, Lyon. The F.E.D. Method. Cotrel Traction. 3.5. Thoracic deformities: Keel chest. Funnel chest. 3.6. Back pain. Spinal injuries. Dorsalgia. Lumbago. Classification. Support belts. Back braces. Unit 4. Orthoses for the Lower Limb. 4.1. Hip orthoses: Hip dysplasia and Perthes. 4.2. Knee orthoses: Genu Valgum and Genu Varum. 4.3. Foot orthoses: Congenital Foot: Metatarsus Varus, Clubfoot. Flat foot. Cavus foot. Metatarsalgia, Talalgia, Hallux Valgus, Hallux Rigidus, Claw Toes.
- Unit 5. Orthoses in Traumatology (group scientific project). Orthoses for conditions of traumatological origin: fractures, soft tissue injuries.
- Unit 6. Plaster and Thermoplastic Splint Making. Laboratory practical in plaster and thermoplastic splint making.
- Unit 7. Low-cost Splint Making. Low-cost functional splint design.

Year: <b>4th</b>	Course code: <b>9996001403</b>	Course: <b>Manual Lymphatic Drainage</b> ( <i>Drenaje Linfático Manual</i> )	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 - History and Concept of MLD. 1.1. Historical background. 1.2. MLD technique. 1.3. Overview of the lymphatic system.
- Unit 2. 2.1. - Effects, indications and contraindications. 2.2 - Structure and function of the lymphatic system. 2.3. Structure of the lymphatic system: (a. Lymphoid organs, b. Lymphatic vessels, c. Lymph nodes). 2.4. Function of the lymphatic system. 2.5 - Lymph flow: 2.6. – Lymph. 2.7. - Oedema:
- Unit 3. Basic MLD Treatment Sequences and Manoeuvres for the Following Areas. 3.1. Types and characteristics of motions. (a. Stationary circle. b. Pump. c. Scoop. d. Thumb circle. e. Rotary. f. Techniques from other schools). 3.2. MLD for different parts of the body. (a. Neck and nape of neck. b. Lower limb. c. Back. d. Upper limb. e. Face. f. Special motions).
- Unit 4. Clinical Case Studies of Different Conditions Treated with MLD.

Year: <b>4th</b>	Course code: <b>9996001405</b>	Course: <b>Obstetric and Urogynaecological Physiotherapy</b> ( <i>Fisioterapia Obstétrica y Uroginecológica</i> )	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Pelvic complex. 1.1. Anatomy of the pelvis. 1.2. Pelvic floor functions. 1.3. Physiology of micturition and defecation.</li> <li>• Unit 2. Perineal rehabilitation and physiotherapy. Pelvic floor disorders . 2.1. Pathophysiology. 2.2. Assessment and examination of the perineum. 2.3. Conservative treatment of perineal disorders.</li> <li>• Unit 3. Gestation. 3.1. Menstrual cycle. 3.2. Physiological adaptations. 3.3. Monitoring of pregnancy. 3.4. Exercise and pregnancy.</li> <li>• Unit 4. Obstetric physiotherapy. 4.1. Treatment during pregnancy. 4.2. Lumbopelvic pain. 4.3. Physiology of childbirth.</li> <li>• Unit 5. Postnatal physiotherapy. 5.1. Postpartum. 5.2. Sexual dysfunction.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9996001805</b>	Course: <b>Sports Physiotherapy II</b> ( <i>Fisioterapia Deportiva II</i> )	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Myofascial Pain. Introduction to Dry Needling. 1.1: Myofascial Pain. Management of myofascial pain syndrome with conservative and minimally invasive techniques. Identification of pain patterns typical of sports-related conditions.</li> <li>• Unit 2: Rehabilitation with Therapeutic Exercise, Strength Training as a Therapeutic Resource. 2.1: Therapeutic use of strength for different conditions and the developmental stages of a sports injury. Practical implementation of strength programmes.</li> <li>• Unit 3: Bone and Soft Tissue Regeneration. Clinical Applications. 3.2: Development of bone, muscle and tendon injuries. Histology and histopathology. Pathophysiology. Risk factors. Treatment. Prevention.</li> <li>• Unit 4: Athletic taping. 4.1: Taping used for sports injuries. Mulligan, McConnell and neuromuscular taping.</li> <li>• Unit 5: Motor control. 5.1: Motor control as a therapeutic and preventive tool. Neuromuscular changes following spinal injury. Clinical stability. Neutral zone. Assessment. Phases of treatment with motor control.</li> <li>• Unit 6: Hydrotherapy. 6.1: Hydrotherapy.</li> <li>• Unit 7: Sports Injuries to Lower Limbs, Upper Limbs and the Back. (Exercises). 7.1. Clinical pictures related to sports injuries. Assessment and treatment of sports injuries</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9996001814</b>	Course: <b>Orthopaedic manual therapy: clinical reasoning</b> ( <i>Terapia Manual Ortopédica 1: Razonamiento Clínico</i> )	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Neurophysiological effects of neurodynamics, exercise and motor control. 1.1: Neurodynamics. 1.2: Motor control</li> <li>• Unit 2: Neurophysiological effects of accessory movements, manipulation and traction. 1.3: Spinal mobilisation. 1.4: Peripheral mobilisation. 1.5: Manipulation</li> <li>• Unit 3: Neurophysiological effects of mobilisation with movement. 3.1. Spinal MWM. 3.2. Peripheral MWM</li> <li>• Unit 4: Neurophysiological effects of myofascial trigger points. 4.1. Manual therapy treatments for myofascial trigger points. Application in the objective examination of the upper limb</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9996001819</b>	Course: <b>Orthopaedic Manual Therapy II: Application and Neurophysiological Effects of Manual Therapy</b> ( <i>Terapia manual</i> )	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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		<i>ortopedica 2: Aplicación y efectos neurofisiológicos de la terapia manual)</i>				
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**Course content/Units:**

- Unit 1: Neurophysiological effects of neurodynamics, exercise and motor control. 1.1: Neurodynamics. 1.2: Motor control
- Unit 2: Neurophysiological effects of accessory movements, manipulation and traction. 2.1: Spinal mobilisation. 2.2: Peripheral mobilisation. 2.3: Manipulation
- Unit 3: Neurophysiological effects of mobilisation with movement: 3.1. Spinal MWM. 3.2. Peripheral MWM
- Unit 4: Neurophysiological effects of myofascial trigger points. 4.1. Manual therapy treatments for myofascial trigger points. Application in the objective examination of the upper limb

Year: <b>4th</b>	Course code: <b>9996001820</b>	Course: <b>Orthopaedic manual therapy 3: diagnosis, examination and treatment of the spine and extremities</b> ( <i>Terapia manual ortopedica 3: Diagnóstico, exploración y tratamiento de columna y extremidades</i> )	Program: <b>Global Bachelor's Degree in Physiotherapy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Neurodynamics. 1.1. Lower limb neurodynamic tests. 1.2. Neurodynamic treatment.
- Unit 2: Examination procedure. 2.1. Objective examination of the hip. 2.2. Objective examination of the knee. 2.3. Objective examination of the ankle/foot.
- Unit 3: Manual therapy treatment. 3.1. Manual therapy for the hip. 3.2. Manual therapy for the knee. 3.3. Manual therapy for the ankle/foot.
- Unit 4: Orthopaedic tests. 4.1. Hip orthopaedic tests. 4.2. Knee orthopaedic test. 4.3. Ankle/foot orthopaedic tests
- Unit 5: Clinical reasoning and decision making in OMT. 5.1. The role of intuition. 5.2. Advanced reasoning. 5.3. Reflective practice.
- Unit 6: Patient management. 6.1. Patient management.

<b>4</b>	<b>9996001822</b>	<b>Fisioterapia Deportiva-III</b>	<b>Semestre 2 / Spring Term (Jan-Jun)</b>		<b>Español</b>	<b>6</b>
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## Global Bachelor's Degree in Sports Management (English + Spanish)

<b>1</b>	<b>PAER001101</b>	<b>Theory and History of Contemporary Sports</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>English</b>	<b>6</b>
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Year: <b>1st</b>	Course code: <b>PAER001102</b>	Course: <b>Sociology and Deontology of Sports</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to the Sociology and Sociology of Sport
- Unit 2. Social functions of sport
- Unit 3. Current problems in sport
- Unit 4. Social structure of sports practice
- Unit 5. Media and sport
- Unit 6. Leisure and sport
- Unit 7. Sports practices in the natural environment
- Unit 8. Ethics and deontology: regulations in sport

**Specific competencies:**

- SC2: Capacity to analyse, integrate and evaluate information from the legal and socio-economic environment, necessary for decision-making.
- SC4: Capacity to design and develop sports services that promote the values inherent in sports practice.
- SC8: Capacity to train both individual and group teams in the development of tasks, protocols, processes and activities related to good exercise practices and physical activity.
- SC11: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC18: Knowledge of the management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc.). Knowledge of the specific management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc ...)

Year: 1st	Course code: <b>PAER001103</b>	Course: <b>Communication Skills</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction</li> <li>• Unit 2. Written communication. 2.1. Reporting. 2.2. Communication in the written media</li> <li>• Unit 3. Oral communication. 3.1. Paralinguistic and verbal communication. 3.2. Effective Presentations</li> <li>• Unit 4. Non-verbal communication.. 4.1. Corporate Communication . 4.2. Internal communication. 4.3. External communication</li> <li>• Unit 5. - Communication support resources. 5.1. Effective Interpersonal Communication Techniques. 5.2. Teamwork</li> <li>• Unit 6. Tools for Effective Communication. 6.1. Digital communication. 6.2. Business Communication</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC1: Ability to generate an elaborate discourse and intervene with objective criteria about the different areas that make up sports management.</li> <li>• SC3: Knowledge of the functional areas of sports companies (Finance Sports Accounting, HR, Sports Marketing and Sports Production).</li> <li>• SC4: Ability to design and develop sports services that promote values inherent to the practice of sports.</li> <li>• SC8: Ability to train both individual and individual teams</li> </ul>						

1	PAER001104	Business Economics	Semestre 1 / Fall Term (Sept - Jan)		English	6
1	PAER001105	Consumer Behavior	Semestre 1 / Fall Term (Sept - Jan)		English	6
1	PAER001106	Financial Accounting I	Semestre 1 / Fall Term (Sept - Jan)		English	6
1	PAER001107	Financial Accounting II	Semestre 2 / Spring Term (Jan - Jun)		English	6

Year: 1st	Course code: <b>PAER001108</b>	Course: <b>Analysis of Economic-Sports Environments</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Main economic aggregates and economic policy objectives. Sport as an economic good</li> <li>• Unit 2. The sports practice market in Spain</li> <li>• Unit 3. Models and formulas of sport management</li> <li>• Unit 4. Professional sport as a spectacle sport</li> <li>• Unit 5. Economic effects of sporting events</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC2: Capacity to analyse, integrate and evaluate information from the legal and socio-economic environment, necessary for decision-making.</li> <li>• SC12: Capacity to critically implement innovation opportunities as a means of growing a company.</li> <li>• SC13: Ability to interpret, according to objective criteria, sports business opportunities, in national and international contexts".</li> </ul>						

- SC14: Capacity to carry out strategic analyses and propose creative solutions adapted to the situation of the sports company and its environment.
- SC19: Know the importance of Research, Development and Innovation (R + D + i), as well as its application for the competitive development of the company in the market.

1	PAER001109	Basic Foundations of Sports Teams	Semestre 1 / Fall Term (Sept–Jan)		English	6
1	PAER001110	Basic Foundations of Aquatic Activities	Semestre 2 / Spring Term (Jan–Jun)		English	6

Year: 2nd	Course code: <b>9965001201</b>	Course: <b>Sports Law (Derecho deportivo)</b>	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: 2nd	Course code: <b>PAER001201</b>	Course: <b>Sports Law</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to sports law. Need for a sports law. Font system. Sports laws
- Unit 2. Structure and organisation of public and private sports institutions
- Unit 3. Specific sports law: doping and violence. Professional football
- Unit 4. Olympic movement and international sports law.
- Unit 5. Civil liability and sports insurance.
- Unit 6. Recruitment and volunteering in sport.
- Unit 7. Basic legislation on sports enterprises and their creation. Subsidies and government procurement

**Specific competences:**

- SC1: Capacity to generate an elaborate discourse and intervene with objective criteria on the different areas that make up sports management.
- SC2: Capacity to analyse, integrate and evaluate information from the legal and socio-economic environment, necessary for decision-making.
- SC5: Ability to value and apply principles of social responsibility in the company, paying particular attention to both environmental management and human rights and the principle of equality, focusing on compliance with current legislation and identifying it as a source of opportunities for business success, to reinforce the image and the process
- SC10: Capacity to plan, program, apply, control and evaluate training and competition processes at different levels and different ages.
- SC11: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC18: Knowledge of the management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc.). Knowledge of the specific management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc ...)

Year: 2nd	Course code: <b>9965001202</b>	Course: <b>Managerial skills in the sports company (Habilidades directivas e nla empresa deportiva)</b>	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: 2nd	Course code: <b>PAER001202</b>	Course: <b>Managerial skills in the sports company</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The Manager
- Unit 2. Planning and time management.
- Unit 3. Business communication.
- Unit 4. Negotiation and dispute resolution
- Units 5. Decision making

- Unit 6. Leadership

**Specific competences:**

- SC3: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC4: Capacity to design and develop sports services that promote values inherent to the practice of sports.
- SC5: Ability to value and apply principles of social responsibility in the company, paying particular attention to both environmental management and human rights and the principle of equality, focusing on compliance with current legislation and identifying it as a source of opportunities for business success, to reinforce the image and the process
- SC8: Capacity to train both individual and group teams in the development of tasks, protocols, processes and activities related to good exercise practices and physical activity.
- SC10: Capacity to plan, program, apply, control and evaluate training and competition processes at different levels and different ages.
- SC11: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC18: Knowledge of the management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc.). Knowledge of the specific management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc ...)

Year: <b>2nd</b>	Course code: <b>9965001203</b>	Course: <b>Design and Planning of Sports Spaces</b> ( <i>Diseño y planificación de espacios deportivos</i> )	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAER001203</b>	Course: <b>Design and Planning of Sports Spaces</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Basic terminology about sports equipment.
- Unit 2. The planning and design of a sports facility.
- Unit 3. Design, conditioning and/or reconversion of urban resources, green areas and free spaces in the city for physical-sports activity.
- Unit 4. Maintenance and conservation of sports facilities. Maintenance management.

**Specific competences:**

- SC9. Ability to select and know how to use the appropriate sports material and equipment for each type of activity, identifying the technical characteristics of the different sports spaces.
- SC18: Knowledge of the management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc.). Knowledge of the specific management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc ...)

<b>2</b>	<b>PAER001204</b>	<b>Statistics</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>		<b>English</b>	<b>6</b>
<b>2</b>	<b>PAER001205</b>	<b>Analysis of Financial Operations</b>	<b>Semestre 2 / Spring Term (Jan–Jun)</b>		<b>English</b>	<b>6</b>

Year: <b>2nd</b>	Course code: <b>9965001206</b>	Course: <b>The Sports Industry</b> ( <i>La industria del deporte</i> )	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAER001206</b>	Course: <b>The Sports Industry</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Spanish Professional Leagues
- Unit 2: Individual Sports

- Unit 3: Entrepreneurship
- Unit 4: Innovation
- Unit 6: Olympic Sport
- Unit 7: Professional Sport in the United States
- Unit 8: New Trends in Sport

**Specific Competencies:**

- SC1: Capacity to generate an elaborate discourse and to intervene with objective criteria in the different areas that constitute sports management.
- SC2: Capacity to analyze, to integrate and to evaluate the information coming from the legal and socioeconomic environment, which is necessary for decision-making.
- SC5: Capacity to evaluate and to apply principles of corporate social responsibility, with particular focus on environmental management, human rights and the principle of equality, directing towards compliance with prevailing legislation and identifying it as a source of opportunities for corporate success, so that the image and the production process of the company can be improved.
- SC13: Capacity to interpret, in accordance with objective criteria, business opportunities within the sports sector, in national and international contexts

Year: <b>2nd</b>	Course code: <b>9965001208</b>	Course: <b>Cost Accounting (Contabilidad de costes)</b>	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAER001208</b>	Course: <b>Cost Accounting</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Study of cost classification and inventory management.
- Unit 2. Analysis of inventory management.
- Unit 3. Calculation of the cost of production sold.
- Unit 4. Study of current and semi-finished products.
- Unit 5. Analysis and interpretation of results.

**Specific Competencies:**

- SC1: Capacity to generate an elaborate discourse and to intervene with objective criteria in the different areas that constitute sports management.
- SC2: Capacity to analyze, to integrate and to evaluate the information coming from the legal and socioeconomic environment, which is necessary for decision-making.
- SC15: Ability to make decisions in the design and implementation of a Sports Business Plan: Commercial viability; Economic-financial viability and technical feasibility.
- SC18: Knowledge of the management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc.). Knowledge of the specific management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc ...)

Year: <b>2nd</b>	Course code: <b>9965001209</b>	Course: <b>Basic Fundamentals of Individual Sports (Fundamentos básicos de deportes individuales)</b>	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAER001209</b>	Course: <b>Basic Fundamentals of Individual Sports</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Athletics. 1.1. Evolution and organization of athletics. 1.2. Classification of the different athletic specialties. 1.3. Basic regulations and methodology of the different athletic specialties
- Unit 2: Tennis . 2.1. Basic technical fundamentals and equipment. 2.2. Main organizations and tournaments. 2.3. Systems of competition and organization of a tournament.



- Unit 3: Golf. 3.1. Organization of golf, its practice spaces and competitions. 3.2. Regulations and courtesy rules governing golf. 3.3. Golf swing, teaching and learning
- Unit 4: Artistic gymnastics. 4.1. Evolution and organization. 4.2. Modalities hosted by the International Gymnastics Federation. 4.3. New trends in gymnastics

**Specific competences:**

- SC2: Capacity to analyse, integrate and evaluate information from the legal and socio-economic environment, necessary for decision-making.
- SC3: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC5: Ability to value and apply principles of social responsibility in the company, paying particular attention to both environmental management and human rights and the principle of equality, focusing on compliance with current legislation and identifying it as a source of opportunities for business success, to reinforce the image and the process
- SC9. Ability to select and know how to use the appropriate sports material and equipment for each type of activity, identifying the technical characteristics of the different sports spaces.
- SC10: Capacity to plan, program, apply, control and evaluate training and competition processes at different levels and different ages.

Year: <b>2nd</b>	Course code: <b>9965001210</b>	Course: <b>Basic Fundamentals of Activities in the Natural Environment</b> <i>(Fundamentos básicos de actividades en el medio natural)</i>	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>PAER001210</b>	Course: <b>Basic Fundamentals of Activities in the Natural Environment</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Basic fundamentals in the Natural Environment
- Unit 2. Leisure and Active Tourism
- Unit 3. Civil Liability in Activities in Nature
- Unit 4. Mountaineering, Hiking and Mountaineering
- Unit 5. Other contents of the Natural Environment: Orientation, GPS and Apps.

**Specific competences:**

- SC4: Capacity to design and develop sports services that promote values inherent to the practice of sports.
- SC5: Ability to value and apply principles of social responsibility in the company, paying particular attention to both environmental management and human rights and the principle of equality, focusing on compliance with current legislation and identifying it as a source of opportunities for business success, to reinforce the image and the process
- SC6: Capacity to identify inappropriate practices that pose a risk to health, in order to to avoid and correct them in different types of population
- SC9. Ability to select and know how to use the appropriate sports material and equipment for each type of activity, identifying the technical characteristics of the different sports spaces.

Year: <b>3rd</b>	Course code: <b>9965001301</b>	Course: <b>People Management</b> ( <i>Dirección de personas</i> )	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>PAER001301</b>	Course: <b>People Management</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The management of people in the digital society.
- Unit 2. Organizational design in VUCA environments
- Unit 3. Attracting people in organizations
- Unit 4. Development and training in the context of continuous learning
- Unit 5. The Compensation Process

**Specific competences:**

- SC3: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC5: Ability to value and apply principles of social responsibility in the company, paying particular attention to both environmental management and human rights and the principle of equality, focusing on compliance with current legislation and identifying it as a source of opportunities for business success, to reinforce the image and the process
- SC8: Capacity to train both individual and group teams in the development of tasks, protocols, processes and activities related to good exercise practices and physical activity.
- SC12: Capacity to critically implement innovation opportunities as a means of growing a company.

Year: <b>3rd</b>	Course code: <b>9965001302</b>	Course: <b>Sport Policies (<i>Pollíticas deportivas</i>)</b>	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3rd</b>	Course code: <b>PAER001302</b>	Course: <b>Sport Policies</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1. Introduction to Sports Policy. Perspective from sport and management.
- Unit 2. Conceptualization of Sports Policy. Evolution and history.
- Unit 3. Current sports policies. Structure of sports policy. International Focus, Community, state, regional and municipal
- Unit 4. New trends in the development of sports policies.
- Unit 5. Main areas of sports policy (Contexts)
- Unit 6. The economic impact of sport and sports policies. Future of the business of the sport

**Specific competences:**

- SC2: Capacity to analyse, integrate and evaluate information from the legal and socio-economic environment, necessary for decision-making.
- SC5: Ability to value and apply principles of social responsibility in the company, paying particular attention to both environmental management and human rights and the principle of equality, focusing on compliance with current legislation and identifying it as a source of opportunities for business success, to reinforce the image and the process
- SC13: Ability to interpret, according to objective criteria, business opportunities Sports, in national and international contexts

Year: <b>3rd</b>	Course code: <b>9965001303</b>	Course: <b>Management of Water Facilities (<i>Gestión de instalaciones acuáticas</i>)</b>	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3rd</b>	Course code: <b>PAER001303</b>	Course: <b>Management of Water Facilities</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1 – Introduction to Aquatic Facilities. Main Regulations
- Unit 2 – Quality management in aquatic facilities - Maintenance
- Unit 3 – Management and optimization of resources in aquatic facilities
- Unit 4 – Planning and new trends in aquatic facilities

**Specific competences:**

- SC6: Capacity to identify inappropriate practices that pose a risk to health, in order to to avoid and correct them in different types of population
- SC9. Ability to select and know how to use the appropriate sports material and equipment for each type of activity, identifying the technical characteristics of the different sports spaces.
- SC15: Ability to make decisions in the design and implementation of a Sports Business Plan: Commercial viability; Economic-financial viability and technical feasibility.
- SC16: Capacity to use and interpret the technical and computer tools necessary for the effective and efficient administration of a company.

- SC17: Capacity to define, apply and explain the strategic management process in sports companies and identify the different phases that compose it: planning, organisation, management and control.

Year: <b>3rd</b>	Course code: <b>9965001304</b>	Course: <b>Accounting Analysis</b> ( <i>Análisis de estados contables</i> )	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>PAER001304</b>	Course: <b>Accounting Analysis</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Annual Accounts
- Unit 2: Financial Analysis I: Working Capital
- Unit 3: Financial Analysis II: Equilibrium Conditions and Financial Ratios
- Unit 4: Economic Analysis
- Unit 5: Practical cases
- Unit 6: Team activity

**Specific competences:**

- SC2: Capacity to analyse, integrate and evaluate information from the legal and socio-economic environment, necessary for decision-making.
- SC3: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC5: Ability to value and apply principles of social responsibility in the company, paying particular attention to both environmental management and human rights and the principle of equality, focusing on compliance with current legislation and identifying it as a source of opportunities for business success, to reinforce the image and the process

Year: <b>3rd</b>	Course code: <b>9965001305</b>	Course: <b>Golf Ground Management</b> ( <i>Gestión de campos de golf</i> )	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>PAER001305</b>	Course: <b>Golf Ground Management</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Introduction and typology of golf courses.
- Unit 2: Golf course selection and location.
- Unit 3: The feasibility study.
- Unit 4: The facilities of a golf course.
- Unit 5: The generation of income account.
- Unit 6: The design and construction of the golf course.
- Unit 7: Golf course maintenance.
- Unit 8: Operational management of golf courses.

**Specific competences:**

- SC3: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC12: Capacity to critically implement innovation opportunities as a means of growing a company.
- SC13: Ability to interpret, according to objective criteria, business opportunities Sports, in national and international contexts
- SC15: Ability to make decisions in the design and implementation of a Sports Business Plan: Commercial viability; Economic-financial viability and technical feasibility.
- SC17: Capacity to define, apply and explain the strategic management process in sports companies and identify the different phases that compose it: planning, organisation, management and control.

Year: <b>3rd</b>	Course code: <b>9965001306</b>	Course: <b>Taxing</b> ( <i>Fiscalidad</i> )	Program:	Term: <b>Semester 1</b>	Teaching Language:	Cr:
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			<b>Bachelor's Degree in Sports Management</b>		<b>Spanish</b>	<b>6 ECTS</b>
Year: <b>3rd</b>	Course code: <b>PAER001306</b>	Course: <b>Taxing</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: Basic elements of the Spanish Tax System.</li> <li>Unit 2: Basic issues of Personal Income Tax.</li> <li>Unit 3: Determination of the tax base in Personal Income Tax</li> <li>Unit 4: Settlement of Personal Income Tax.</li> <li>Unit 5: Corporate Income Tax. General regulations and tax settlement.</li> <li>Unit 6: Settlement of Corporation Tax and Value Added Tax</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC2: Capacity to analyse, integrate and evaluate information from the legal and socio-economic environment, necessary for decision-making.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9965001307</b>	Course: <b>Fitness and Wellness: Sports for Health</b> ( <i>Fitness and Wellness: deporte para la salud</i> )	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3rd</b>	Course code: <b>PAER001307</b>	Course: <b>Fitness and Wellness: Sports for Health</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: Introduction to Physical Activity, Exercise and Health</li> <li>Unit 2: Assessment protocols prior to the practice of exercise</li> <li>Unit 3: Physical fitness and health test for the general population</li> <li>Unit 4: Exercise recommendations for adults and people with special considerations</li> <li>Unit 5: Wellness activities: exercise techniques with a holistic approach focused on personal well-being</li> <li>Unit 6: Fitness activities: exercise techniques focused mainly on improving physical fitness</li> <li>Unit 7: Material and equipment in the fitness room and facilities</li> </ul> <b>Specific Competencies:</b> <ul style="list-style-type: none"> <li>SC1: Capacity to generate an elaborate discourse and to intervene with objective criteria in the different areas that constitute sports management.</li> <li>SC4: Capacity to design and develop sports services that promote values inherent to the practice of sports.</li> <li>SC6: Capacity to identify inappropriate practices that pose a risk to health, in order to to avoid and correct them in different types of population</li> <li>SC7: Capacity to analyse and apply physiological, biomechanical, psychological and social principles to the different fields of physical activity, sport and recreation</li> <li>SC8: Capacity to train both individual and group teams in the development of tasks, protocols, processes and activities related to good exercise practices and physical activity</li> <li>SC9. Ability to select and know how to use the appropriate sports material and equipment for each type of activity, identifying the technical characteristics of the different sports spaces.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9965001308</b>	Course: <b>Technical Management of Sports Entities</b> ( <i>Dirección Técnica de Entidades Deportivas</i> )	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3rd</b>	Course code: <b>PAER001308</b>	Course: <b>Technical Management of Sports Entities</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1. Classification and management of sports organizations
- Unit 2. The technical direction. The role of the sports manager
- Unit 3. Management in sports entities
- Unit 4. Planning and management of sports activities or services. Tools
- Unit 5. Process management and direction

**Specific Competencies:**

- SC1: Capacity to generate an elaborate discourse and to intervene with objective criteria in the different areas that constitute sports management.
- SC3: Knowledge of the functional areas of sports companies (Sports Finance, Sports Accounting, HR, Sports Marketing and Sports Production).
- SC5: Capacity to evaluate and to apply principles of corporate social responsibility, with particular focus on environmental management, human rights and the principle of equality, directing towards compliance with prevailing
- SC8: Capacity to train both individual and group teams in the development of tasks, protocols, processes and activities related to good exercise practices and physical activity
- SC17: Capacity to define, apply and explain the strategic management process in sports companies and identify the different phases that compose it: planning, organisation, management and control.
- SC18: Knowledge of the management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc.). Knowledge of the specific management tools used in entities that develop physical activity services in any of its spectrums (recreation, health, sport, education, etc ...)

Year: <b>3rd</b>	Course code: <b>9965001309</b>	Course: <b>Business Law</b> ( <i>Derecho de la empresa</i> )	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3rd</b>	Course code: <b>PAER001309</b>	Course: <b>Business Law</b>	Program: <b>Global Bachelor's Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1: The Spanish and Community legal system.
- Unit 2: Subjects of private economic activity and its legal contemplation. Unit 3: Legal status of the employer. The Commercial Register.
- Unit 4: Competition Law.
- Unit 5: Rights over industrial creations and distinctive signs of the entrepreneur. Unit 6: Commercial companies: choice of legal form.
- Unit 7: Legal situations of insolvency: bankruptcy.

**Specific competences:**

- SC2: Capacity to analyse, integrate and evaluate information from the legal and socio-economic environment, necessary for decision-making.
- SC5: Capacity to evaluate and to apply principles of corporate social responsibility, with particular focus on environmental management, human rights and the principle of equality, directing towards compliance with prevailing
- SC16: Capacity to use and interpret the technical and computer tools necessary for the effective and efficient administration of a company.

<b>4</b>	<b>9965001403</b>	<b>Dirección y Técnicas de Venta</b>	<b>Semestre 1 / Fall Term (Sept – Jan)</b>		<b>Español</b>	<b>4</b>
<b>4</b>	<b>9965001404</b>	<b>Gestión Financiera</b>	<b>Semestre 1 / Fall Term (Sept – Jan)</b>		<b>Español</b>	<b>4</b>
<b>4</b>	<b>9965001405</b>	<b>Contabilidad de pymes</b>	<b>Semestre 1 / Fall Term (Sept – Jan)</b>		<b>Español</b>	<b>4</b>

Year: <b>4th</b>	Course code: <b>9965001406</b>	Course: <b>Quality and Customer Service in the Exercise and Sports Sector</b> ( <i>Calidad y Atención al</i>	Program: <b>Bachelor's Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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		<i>cliente en el ámbito físico-deportivo)</i>				
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Quality in sports organisations. 1.1. Introduction to quality and key concepts. 1.2. Types of quality and the costs vs the benefits of quality. 1.3. Stages in the quality process: from inspections to total quality management. 1.4. Quality inspection tools. 1.5. Tools for quality control and improvement. Quality circles, brainstorming, PDCA/PDSA cycle</li> <li>Unit 2: Quality-based management. 2.1. Techniques for managing continuous improvement. 2.2. Quality management systems (ISO 9001, EFQM and Six Sigma) and quality certifications. 2.3. Safety and professional ethics. 2.4. Innovation in sports facility maintenance. 2.5. Quality and sustainability.</li> <li>Unit 3: Customer service and quality Introduction. 3.1. Customer service and service quality. 3.2. Customer service in terms of experience (customer/consumer experience). 3.3. Customer management and loyalty: perceived quality and perceived value. 3.4. Types of customers. 3.5. Internal customer service</li> <li>Unit 4: Customer service management. 4.1. Service recovery: dealing with claims, objections and complaints. 4.2. Customer service in a physical setting and from a 'contact centre' perspective. 4.3. Online customer service. 4.4. Digital tools and communication as the key to quality customer service. 4.5. Managing crises and brand reputation</li> </ul>						

4	9965001407	Dirección-Estratégica	Semestre 1 / Fall Term (Sept – Jan)		Español	6
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Year: 4th	Course code: <b>9965001408</b>	Course: <b>Commercialisation and Marketing of Sport and Leisure</b> ( <i>Comercialización y Marketing de Deporte y Ocio</i> )	Program: <b>Bachelor´s Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1 – Introduction to sport marketing. Market research</li> <li>Unit 2 – Segmentation. Leisure profiles and VALS clusters.</li> <li>Unit 3 – Marketing plans. Sport sponsorship. Branding</li> <li>Unit 4 – Content and digital marketing</li> </ul>						

Year: 4th	Course code: <b>9965001409</b>	Course: <b>Management of Major Sports Events and Venues</b> ( <i>Gestión de Grandes Eventos y Recintos Deportivos</i> )	Program: <b>Bachelor´s Degree in Sports Management</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Major sports events: types and characteristics. 1.1. Classification of sports events according to scope, time frame and impact. 1.2. Sports events selection methods. 1.3. Competitor/Spectator positioning.</li> <li>Unit 2: The organisation and management of major events. 2.1. Phases in the management of a sports event. 2.2. Sports event planning. 2.3. Management areas. 2.4. Volunteering. 2.5 Safety</li> <li>Unit 3: Sports events. Quality and economic impact. 3.1. Assessment of different types of impact. 3.2. Methods of analysing sports events. 3.3. Legacy management. 3.4 Assessing satisfaction and quality in sports events.</li> <li>Unit 4: Sport leagues. 4.1. Characteristics of league organisations. 4.2. Demand at sports events.</li> <li>Unit 5: Major sports venues. 5.1. Characteristics of major sports venues. 5.2. Evolution and new trends in major sports venues.</li> </ul>						

Year: 4th	Course code: <b>9965001410</b>	Course: <b>Management of Leisure and Unconventional Spaces</b> ( <i>Gestión del Ocio y de los Espacios no convencionales</i> )	Program: <b>Bachelor´s Degree in Sports Management</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Introduction to the concept of leisure and free time. 1.1. Key concepts: Free time and leisure. 1.2. The role of leisure in the Spanish Constitution. 1.3. Historical evolution of the term "leisure". 1.4. Sport in Spain. Historical evolution. 1.5. Leisure profiles</li> <li>Unit 2: The value of a recreational event. 2.1. Key aspects in the management of a leisure event. 2.2. Phases in the organisation of a leisure event. 2.3. Maps and circulation at a leisure event. 2.4. Assessment of a leisure event</li> </ul>						

- Unit 3: The role of physical activity in leisure. 3.1. Relationship between leisure and physical activity. 3.2. Role of a sports manager at leisure events. 3.3. Marketing plan applied to leisure events. 3.4. Tools to ensure the quality of a leisure event
- Unit 4: Design and planning of sport-based recreation programmes. 4.1. Types and characteristics of recreation programmes. 4.2. Customers in the recreation sector. 4.3. Hotel-based recreation programmes for tourists

## Faculty of Biomedicine and Health Sciences

### Bachelor's Degree in Dentistry (English + Spanish)

1	P739001101	Anatomy and Physiology of the Human Body I	Semestre 1 / Fall Term (Sept – Jan)		English	6
1	P739001102	Cellular Biology and Human Genetics	Semestre 2 / Spring Term (Jan – Jun)		English	6
1	P739001103	Epidemiology, Public Health and Applied Biostatistics	Semestre 1 / Fall Term (Sept – Jan)		English	6
1	P739001104	Anthropology and History of Dentistry	Semestre 2 / Spring Term (Jan – Jun)		English	3
1	P739001105	Documentation and Introduction to Research Methodology in Dentistry	Semestre 1 / Fall Term (Sept – Jan)		English	3

Year: <b>1st</b>	Course Code: <b>P739001106</b>	Course: <b>Modern Language (Language: Spanish)</b> <i>(Idioma moderno)</i>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note 1:** the level of the pass will be Spanish B2. A Spanish B1 is recommended to take this course

**Note 2:** the Spanish taught is focused on clinic cases

**Course content/Units:**

- Unit 1. Vocabulary on topics of general/current interest and specific to the field of study.
- Unit 2. Grammatical and communication structures in Spanish.
- Unit 3. Listening exercises on topics of general interest and/or the field of study.
- Unit 4. Oral and written communication in Spanish.
- Unit 5. How to give a good multimedia presentation in Spanish.

1	P739001107	Anatomy and Physiology of the Human Body II	Semestre 2 / Spring Term (Jan – Jun)		English	6
1	P739001108	Biochemistry	Semestre 1 / Fall Term (Sept – Jan)		English	6
1	P739001109	General Microbiology and Immunology	Semestre 2 / Spring Term (Jan – Jun)		English	6
1	P739001110	Introduction to the Clinic	Semestre 2 / Spring Term (Jan – Jun)		English	6
1	P739001111	Psychology and Communication Skills	Semestre 1 / Fall Term (Sept – Jan)		English	6
2	P739001201	Biomaterials and Instrumentation	Semestre 1 / Fall Term (Sept – Jan)		English	6
2	P739001202	Head and Neck Anatomy	Semestre 1 / Fall Term (Sept – Jan)		English	6
2	P739001203	Applied Surgical Medical Pathology I	Semestre 1 / Fall Term (Sept – Jan)		English	6
2	P739001204	General Semiology and Physiopathology I	Semestre 1 / Fall Term (Sept – Jan)		English	6
2	P739001205	Periodontics I	Semestre 2 / Spring Term (Jan – Jun)		English	6
2	P739001206	General Pharmacology. Human Nutrition. Anesthesia and Reanimation	Semestre 1 / Fall Term (Sept – Jan)		English	6
2	P739001207	Physiology of the Stomatognathic System	Semestre 2 / Spring Term (Jan – Jun)		English	6
2	P739001208	Applied Surgical Medical Pathology II	Semestre 2 / Spring Term (Jan – Jun)		English	6



2	P739001209	General Semiology and Physiopathology II	Semestre 2 / Spring Term (Jan–Jun)		English	6
2	P739001210	Diagnostics in Dentistry	Semestre 2 / Spring Term (Jan–Jun)		English	3
2	P739001211	Normal and Pathological Occlusion	Semestre 2 / Spring Term (Jan–Jun)		English	3

Year: 3th	Course Code: 9999001301	Course: <b>Pediatric Dentistry I</b> ( <i>Odontopediatría I</i> )	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: 3th	Course Code: P739001301	Course: <b>Pediatric Dentistry I</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1. Introduction to Pediatric Dentistry 1.1 Introduction to Pediatric Dentistry.
- Unit 2. Dental morphology. Rash and occlusion 2.1 Morphology of the temporary dentition I. 2.2 Morphology of the temporary dentition II. 2.3. Nomenclature and dental maturation. 2.4. Dental development. 2.5. Tooth eruption. 2.6. Pathology of the eruption. 2.7. Occlusion and articulation in the temporary dentition. 2.8. Physiology of tooth replacement.
- Unit 3. Dental pathology and therapeutics in children 3.1. Isolation. 3.2. Dental caries in children. 3.3 Treatment of dental caries in children I. 3.4 Treatment of dental caries in children II

**Specific competencies:**

- SC10 Recognise normality and oral pathology, as well as the evaluation of semiological data.
- SC11 Identify the main reason for consultation and the history of the current disease. Take a general clinical history of the patient and a clinical record that accurately reflects the patient's records.
- SC12 Knowing the behavioural and communication sciences that facilitate dental practice.
- SC13 Handle, discriminate and select the appropriate materials and instruments in dentistry.
- SC14 Knowing dental biomaterials: their handling, properties, indications, allergies, bio-compatibility, toxicity, waste disposal and environmental impact.
- SC16 Knowing and using basic equipment and instrumentation for dental practice.
- SC18 Providing a global approach to oral care and applying the principles of health promotion and prevention of oral diseases.
- SC19. Educate and motivate patients in the prevention of oral diseases, control pathogenic oral habits, instruct them on correct oral hygiene, dietary and nutritional measures and, in short, on all methods of maintaining oral health.
- CE26. Recognise that the patient is the centre of attention and that all interactions, including prevention, diagnosis, planning and execution of treatment and maintenance, must seek the patient's best interests, avoiding any type of discrimination and respecting confidentiality. Identify the signs and attitudes that suggest the possible existence of maltreatment.
- SC44. Prepare and isolate the operative field.

Year: 3th	Course Code: 9999001302	Course: <b>Orthodontics I</b> ( <i>Ortodoncia I</i> )	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: 3th	Course Code: P739001302	Course: <b>Orthodontics I</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1: Introduction to normal occlusion and malocclusion. 1.1: Ideal occlusion concept. 1.2: Classification of malocclusion. 1.3: Etiology of malocclusion. 1.4: Oral habits leading to malocclusion
- Unit 2: Introduction to diagnostic methods in Orthodontics. 2.1: Study cast analysis. 2.2: Space discrepancy (tooth size-arch length discrepancy). 2.3: Introduction to cephalometrics: Tracing of tructures. 2.4. Cephalometrics II. Tracing of

vertical and horizontal planes. 2.5. Exploration of Facial Morphology and Symmetry. 2.6. Facial biotypes and facial photography

**Specific competencies:**

- SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity, and be competent in the interpretation of their results.
- SC10. Recognise oral normality and pathology, as well as the evaluation of semiological data.
- SC13. Handle, discriminate and select appropriate materials and instruments in Dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.
- SC16. Know and use basic equipment and instruments for dental practice
- SC18. Provide a comprehensive approach to oral care and apply the principles of health promotion and prevention of oral diseases.
- SC19. Educate and motivate patients in the prevention of oral diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in summary, on all methods of maintaining oral health.

Year: <b>3th</b>	Course Code: <b>9999001303</b>	Course: <b>Oral Surgical Medical Pathology I</b> <i>(Patología Médico Quirúrgica Bucal)</i>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3th</b>	Course Code: <b>P739001303</b>	Course: <b>Oral Surgical Medical Pathology I</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Exploration and Diagnosis.
- Unit 2: Anaesthesia
- Unit 3: Exodontia
- Unit 4: Surgical Act
- Unit 5: Dental Retentions

**Specific competencies:**

- SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity, and be competent in the interpretation of their results.
- SC10. Recognise oral normality and pathology, as well as the evaluation of semiological data.
- SC11. Identify the main reason for appointment and the history of the current disease. Perform a general medical record of the patient and a medical file that accurately reflects the patient's records.
- SC12. Know the behavioural and communication sciences that facilitate the dental practice.
- SC13. Handle, discriminate and select appropriate materials and instruments in Dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.
- SC16. Conocer y usar del equipamiento e instrumentación básicos para la práctica odontológica.
- SC31. Know the pharmacological bases of the different anaesthetic techniques, both local and general, as well as the role of sedation and general anaesthesia in the management of the dental patient.
- SC39. Identify patients requiring special care, recognising their characteristics and peculiarities.

Year: <b>3th</b>	Course Code: <b>9999001305</b>	Course: <b>Stomatology Prosthesis I (Prótesis estomatológica I)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3th</b>	Course Code: <b>P739001305</b>	Course: <b>Stomatology Prosthesis I</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Lectures. 1.1. Dental prosthetics: General considerations. 1.2. Fully edentulous patient. 1.3. Medical history and physical examination of the fully edentulous patient. 1.4. Impressions for complete dentures. Anatomical and functional techniques. 1.5. Record bases and occlusion rims. Functions, properties, materials and manufacturing. 1.6. Upper occlusion rim records. 1.7. Lower occlusion rim records. 1.8. Artificial teeth. 1.9. Trial denture wax try-in. 1.10. Laboratory technology in complete dentures. 1.11. Remounting and occlusal equilibration of complete dentures.

Concept, justification and objectives. 1.12. Placement of complete dentures. 1.13. Immediate dentures. 1.14. Introduction to implant prosthetics. 1.15. Implant overdentures and tooth overdentures.

- Unit 2. Practical content of the subject: Practice 1. Impressions for the edentulous patient and diagnostic cast. Practice 2. Custom trays manufacturing and impressions. Practice 3. Record bases and occlusion rims manufacturing Practice 4. Upper occlusion rim records and mounting on the articulator Practice 5. Lower occlusion rim records and mounting on the articulator Practice 6. Preliminary impressions and Custom tray for implant overdentures. Practice 7. Impressions with custom tray for implant overdentures.

**Specific competencies:**

- SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity, and be competent in the interpretation of their results.
- SC10. Recognize oral normality and pathology, as well as the evaluation of semiological data.
- SC13. Handle, discriminate and select appropriate materials and instruments in Dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.
- SC16. Know and use the basic equipment and instruments for the dental practice.
- SC37. Make diagnostic models, mount them, and take inter-occlusal recordings.
- SC38. Determine and identify the aesthetic requirements of the patient and the possibilities of satisfying their concerns

Year: <b>3th</b>	Course Code: <b>9999001306</b>	Course: <b>Pediatric Dentistry II (Odontopediatría II)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3th</b>	Course Code: <b>P739001306</b>	Course: <b>Pediatric Dentistry II</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Dental Surgery in PediatricDentistry 1.1. Filling of cavity preparationsin the pediatric patient. 1.2 Diagnosis of pulp pathology in young primary and permanentteeth. 1.3 Pulp therapy in primary dentition 1.4 Pulp therapy in young permanent dentition 1.5 Treatment oflarge tooth destruction in the pediatric patient and use of crowns
- Unit 2. Dentaltraumatology in children 2.1. Clinical history and Diagnosis of dental trauma in childhood 2.2. Trauma affecting dental hard tissues in primary and permanent dentition: coronary and radicular fractures. 2.3. Trauma affecting the dental support tissues in the primary and permanent dentition. Unit 3. Arch integrity. Space control and management 3.1. Arch balance and premature loss of deciduoustooth 3.2. Tooth lossin infancy: use ofspace maintainers
- Unit 4. Medical history 4.1. Concept. Systematic of work in the child patient and integration of knowledge acquired in previous topics. 4.2. Treatment plan and general considerations for its correct elaboration according to each clinical case.

**Specific competencies:**

- SC9 Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.
- SC10 Recognize oral normality and pathology, as well as the evaluation of semiology data.
- SC11 Identify the main reason for consultation and the history of the current disease. Take a general medical history of the patient and a clinical record that accurately reflects the patient's records.
- SC12 Know the behavioral and communication sciences that facilitate dental practice.
- SC13 Handle, discriminate and select the appropriate materials and instruments in dentistry.
- SC14 Knowing dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.
- SC16 Know and use the basic equipment and instrumentation for dental practice.
- CE18 Provide a comprehensive approach to oral care and apply the principles of health promotion and prevention of oral diseases.
- SC19. Educate and motivate patients on prevention of oral-dental diseases, control pathogenic oral habits, instruct them on proper oral hygiene, on dietary and nutritional measures and, in short, on all methods of maintaining oral health.
- SC26. recognize that the patient is the center of care and that all interactions, including prevention, diagnosis, treatment planning and execution, and maintenance, should seek his or her 3 best interest, avoiding any type of discrimination and respecting confidentiality. Identify signs and attitudes that suggest the possible existence of mistreatment.

Year: <b>3th</b>	Course Code: <b>9999001307</b>	Course: <b>Orthodontics II (Ortodoncia II)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3th</b>	Course Code: <b>P739001307</b>	Course: <b>Orthodontics II</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: Biomechanics: 1.1. Concept of wire. 1.2. Biology of tooth movement. 1.3. Tissue reaction to forces</li> <li>Unit 2: Introduction to removable and fixed Orthodontics 2.1. Removable appliances I: Classification of removable appliances. 2.2. Removable appliances II. 2.3. Functional appliances. 2.4. Adhesion in orthodontics. 2.5. Introduction to fixed orthodontics. 2.6. Two band fixed appliances I and II.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity, and be competent in the interpretation of their results.</li> <li>SC10. Recognise oral normality and pathology, as well as the evaluation of semiological data.</li> <li>SC13. Handle, discriminate and select appropriate materials and instruments in Dentistry.</li> <li>SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.</li> <li>SC16. Know and use basic equipment and instruments for dental practice</li> <li>SC18. Provide a comprehensive approach to oral care and apply the principles of health promotion and prevention of oral diseases.</li> <li>SC19. Educate and motivate patients in the prevention of oral diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in summary, on all methods of maintaining oral health.</li> </ul>						

Year: <b>3th</b>	Course Code: <b>9999001308</b>	Course: <b>Oral Surgical Medical Pathology II (Patología Médico Quirúrgica Bucal II)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3th</b>	Course Code: <b>P739001308</b>	Course: <b>Oral Surgical Medical Pathology II</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: introduction to medical pathology. 1.1. Epidemiology. Objectives. Semiology and Propaedeutics. 1.2. Functions of the stomatognathic apparatus. 1.3. Clinical history in Oral Medicine. Anamnesis. 1.4. Intraoral examination in PMB and Extraoral clinical examination in PMB. 1.5. Complementary tests in Oral Medicine. 1.6. Complementary tests in Oral Medicine. 1.7. Physiopathology of the oral mucosa focused on the discovery of alterations. 1.8. Elementary lesions in the oral mucosa</li> <li>Unit 2: Pathology of the oral mucosa. 2.1. Dyschromia and exogenous pigmentation of the oral mucosa. 2.2. Endogenous dyschromias. Differential diagnosis of pigmentary disorders. 2.3. White lesions of the oral mucosa. differential diagnosis 2.4. Superficial fungal infections of the oral mucosa 2.6. Deep fungal infections and oral cavity. 2.7. Bacterial infections of the oral mucosa I 2.8. Bacterial infections of the oral mucosa II Theme 2.9. Viral infections of the oral mucosa (I) 2.10. Viral infections of the oral mucosa (II) 2.11. Ulcerative and canker sores of the oral mucosa. 2.12. Differential diagnosis of ulcerative lesions. 2.13. lichen planus</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC9. Know the procedures and clinical and laboratory diagnostic tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.</li> <li>SC10. Recognize normality and oral pathology, as well as the evaluation of semiological data.</li> <li>SC11. Identify the main reason for consultation and the history of the current disease. Carry out a general clinical history of the patient and a medical record that faithfully reflects the patient's records.</li> <li>SC12. Know the behavioral and communication sciences that facilitate dental practice.</li> <li>SC13. Manage, discriminate and select the appropriate materials and instruments in dentistry.</li> <li>SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.</li> </ul>						

- SC18. Provide a global approach to oral care and apply the principles of health promotion and prevention of oral and dental diseases.
- SC19. Educate and motivate patients in the prevention of oral and dental diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in short, on all methods of maintaining oral health .
- SC20. Know the effects of tobacco on oral health and participate in measures that help patients who want to quit smoking.
- SC29. Know the oral manifestations of systemic diseases. SC39. Identify the patient who requires special care, recognizing their characteristics and peculiarities.

Year: <b>3th</b>	Course Code: <b>9999001310</b>	Course: <b>Stomatology Prosthesis II (Prótesis estomatológica II)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3th</b>	Course Code: <b>P739001310</b>	Course: <b>Stomatology Prosthesis II</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1 Lectures. 1.1. 1. Partially edentulous patient. 1.2. Assessment of the partially edentulous patient. 1.3. The removable partial denture: concept and objective. 1.4. Bases of removable partial dentures . 1.5. Major connectors. 1.6. Direct retainers. 1.7. Biomechanics of removable partial dentures. 1.8. Design of removable partial dentures. 1.9. Treatment planning of removable partial dentures. 1.10. 10. Impressions and master casts for removable partial dentures. 1.11. Removable partial denture framework try-in. 1.12. Removable partial denture placement. 1.13. Flexible removable dentures.
- Unit 2. Practices. Practice 1. Impressions for the partially edentulous patient and diagnostic cast. Practice 2. Custom trays manufacturing. Practice 3. Record bases and occlusion rims manufacturing. Practice 4. Upper occlusion rim records and mounting on the articulator. Practice 5. Lower occlusion rim records and mounting on the articulator. Practice 6. Surveying and design of removable partial denture. Practice 7. Impressions with custom tray.

**Specific competencies:**

- SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity, and be competent in the interpretation of their results.
- SC10. Recognize oral normality and pathology, as well as the evaluation of semiological data.
- SC13. Handle, discriminate and select appropriate materials and instruments in Dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.
- SC16. Know and use the basic equipment and instruments for the dental practice.
- SC37. Make diagnostic models, mount them, and take inter-occlusal recordings.
- SC38. Determine and identify the aesthetic requirements of the patient and the possibilities of satisfying their concerns.

Year: <b>3th</b>	Course Code: <b>9999001318</b>	Course: <b>Dental Therapy II (Terapéutica Dental II)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3th</b>	Course Code: <b>P739001318</b>	Course: <b>Dental Therapy II</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1. Internal anatomy
- Unit 2: openings in endodontics
- Unit 3: materials I
- Unit 4: materials II
- Unit 5: instrumentation in endodontics
- Unit 6: filling:
- Unit 7: Irrigation
- Unit 8: anesthesia and radiology
- Unit 9: complications in endodontics

- Unit 10: Pulpar and periapical pathology
- Unit 11: Diagnosis

**Specific competencies:**

- SC3: Know how to identify the patient's concerns and expectations, as well as communicate effectively and clearly, both orally and in writing, with patients, family members, the media and other professionals.
- SC14: Know the general processes of the disease, including infection, inflammation, alterations of the immune system, degeneration, neoplasia, metabolic alterations and genetic disorders.
- SC17: Understand and recognize the principles of ergonomics and safety at work (including cross-infection control, radiological protection and occupational and biological diseases).
- SC21: Know how to carry out a complete oral examination, including the appropriate complementary radiographic and exploration tests, as well as obtaining adequate clinical references.
- SC25: Know and apply the basic treatment of the most common oral pathology in patients of all ages. Therapeutic procedures should be based on the concept of minimal invasion and on a global and integrated approach to oral treatment.
- SC26: Know how to plan and carry out multidisciplinary, sequential and integrated dental treatments of limited complexity in patients of all ages and conditions and in patients who require special care.
- SC27: Plan and propose appropriate preventive measures for each clinical situation.
- SC30: Recognize the role of the dentist in prevention and protection actions against oral diseases, as well as in the maintenance and promotion of health, both at an individual and community level

Year: <b>3th</b>	Course Code: <b>9999001319</b>	Course: <b>Dental Therapy I (Terapéutica Dental I)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3th</b>	Course Code: <b>P739001319</b>	Course: <b>Dental Therapy I</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Knowledge of dental anatomy.
- Unit 2. Dental pathology
- Unit 3. Dental pathophysiology
- Unit 4. Dental restoration
- Unit 5. Cavitory designs for composite resin.
- Unit 6. Preparation of the operative field.

**Specific Competencies:**

- SC10. Recognise oral normality and pathology, as well as the evaluation of semiological data.
- SC13. Handle, discriminate and select appropriate materials and instruments in Dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.
- SC16. Know and use the basic equipment and instrumentation for dental practice.
- SC18. Provide a comprehensive approach to oral care and apply the principles of health promotion and prevention of oral diseases
- SC19. Educate and motivate patients in the prevention of oral diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in summary, on all methods of maintaining oral health.
- SC44. Prepare and isolate the operative field.

Year: <b>4th</b>	Course Code: <b>9999001401</b>	Course: <b>Advanced Periodontics (Periodoncia avanzada)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4 ECTS</b>
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Year: <b>4th</b>	Course Code: <b>P739001401</b>	Course: <b>Advanced Periodontics</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>4 ECTS</b>
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**Course content/Units:**

- Unit 1. Basic periodontology Review
- Unit 2. Basic versus surgical periodontal treatment.

- Unit 3. Occlusion in Periodontics
- Unit 4. Conventional Surgery.
- Unit 5. Mucogingival
- Unit 6. Regenerative surgery

**Specific competencies:**

- SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.
- SC13. Handle, discriminate and select the appropriate materials and instruments in dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.
- SE19. Educate and motivate patients in the prevention of oral diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in short, on all methods of maintaining oral health.

Year: <b>4th</b>	Course Code: <b>9999001402</b>	Course: <b>Oral Surgical Medical Pathology III</b> <i>(Patología Médico Quirúrgica Bucal III)</i>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4 ECTS</b>
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Year: <b>4th</b>	Course Code: <b>P739001402</b>	Course: <b>Oral Surgical Medical Pathology III</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>4 ECTS</b>
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**Course content/Units:**

- Unit 1. Bullous lesions of the buccal mucosa (I)
- Unit 2. Bullous lesions of the buccal mucosa (II)
- Unit 3. Exophytic lesions. Tumors and pseudotumors
- Unit 4. Pretumoral lesions. leukoplakia
- Unit 5. Physical-chemical injuries
- Unit 6. Cancer of the mucosa (I)
- Unit 7. Cancer of the mucosa (II)
- Unit 8. Pathology of the tongue
- Unit 9. Pathology of the lips
- Unit 10. Pathology of the floor of the mouth
- Unit 11. Pathophysiology of the salivary glands
- Unit 12. Dry Mouth Syndrome
- Unit 13. Sialadenitis
- Unit 14. Sialadenosis. Sjogren's syndrome
- Unit 15. Sialadenomegaly
- Unit 16. Orofacial pain. Concept. pathophysiology
- Unit 17. Neurogenic pain. essential neuralgia
- Unit 18. Symptomatic neuralgia
- Unit 19. Somatic pain. Muscle pain and others
- Unit 20. Burning Mouth Syndrome
- Unit 21. Motor disturbances. Facial paralysis.
- Unit 22. Connective diseases and their repercussion in the oral cavity.
- Unit 23. Oral manifestations of endocrinopathies
- Unit 24. Oral manifestations of metabolic diseases.

**Specific competencies:**

- SC9. Know the procedures and clinical and laboratory diagnostic tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.
- SC10. Recognize normality and oral pathology, as well as the evaluation of semiological data.
- SC11. Identify the main reason for consultation and the history of the current disease. Carry out a general clinical history of the patient and a medical record that faithfully reflects the patient's records.
- SC12. Know the behavioral and communication sciences that facilitate dental practice.
- SC13. Manage, discriminate and select the appropriate materials and instruments in dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.
- SC18. Provide a global approach to oral care and apply the principles of health promotion and prevention of oral and dental diseases.

- SC19. Educate and motivate patients in the prevention of oral and dental diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in short, on all methods of maintaining oral health .
- SC20. Know the effects of tobacco on oral health and participate in measures that help patients who want to quit smoking.
- SC29. Know the oral manifestations of systemic diseases.
- CE39. Identify the patient who requires special care, recognizing their characteristics and peculiarities.

Year: <b>4th</b>	Course Code: <b>9999001405</b>	Course: <b>Pediatric Dentistry III (Odontopediatría III)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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Year: <b>4th</b>	Course Code: <b>P739001405</b>	Course: <b>Pediatric Dentistry III</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Pain and anxiety management in children. 1.1. Behavioral management in pediatric dentistry patient I. 1.2. Behavioral management of pediatric dentistry patients II. 1.3. Local anesthesia in the pediatric patient. 1.4. General anesthesia in children. 1.5. Pharmacology in pediatric dentistry. 1.6. Sedation and premedication in pediatric dentistry
- Unit 2. Craniofacial growth. Syndromes with craniofacial repercussion. 2.1. Preliminary growth concepts. 2.2. Craniofacial growth process I -2.3. Craniofacial growth process II. 2.4. Prenatal cranial development - General concepts. 2.5. Facial growth along the face. Facial types. 2.6. Mechanisms of craniofacial growth regulation. 2.7. Syndromes and craniofacial malformations I. 2.8. Syndromes and craniofacial malformations II
- Unit 3. Developmental Pediatric Dentistry . 3.1. The child from 0 to 3 years of age. 3.2. The child from 3 to 6 years of age 3.3. The child from 6 to 9 years of age 3.4. The child from 9 to 12 years of age

**Specific competencies:**

- SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.
- SC10. Recognize oral normality and pathology, as well as the evaluation of semiology data.
- SC11. Identify the main reason for consultation and the history of the current disease. Take a general medical history of the patient and a clinical record that accurately reflects the patient's records.
- SC12. Know the behavioral and communication sciences that facilitate dental practice.
- SC18. Provide a global approach to oral care and apply the principles of health promotion and prevention of oral diseases.
- SC19. Educate and motivate patients on prevention of oral-dental diseases, control pathogenic oral habits, instruct them on proper oral hygiene, on dietary and nutritional measures and, in short, on all methods of maintaining oral health.
- SC26. Recognize that the patient is the center of attention and that all interactions, including prevention, diagnosis, treatment planning and execution, and maintenance, should be in the patient's best interest, avoiding any type of discrimination and respecting confidentiality. Identify signs and attitudes that suggest the possible existence of mistreatment.
- SC30. To know general and clinical pharmacology in dental practice.
- SC31. Know the pharmacological basis of the different anesthetic techniques, both local and general, as well as the role of sedation and general anesthesia in the management of the dental patient.
- SC32. Know and manage the most frequent emergencies and medical emergencies in dental practice and basic cardiorespiratory resuscitation techniques.

Year: <b>4th</b>	Course Code: <b>9999001406</b>	Course: <b>Orthodontics III (Ortodoncia III)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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Year: <b>4th</b>	Course Code: <b>P739001406</b>	Course: <b>Orthodontics III</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1: Presentation of the course Orthodontics III.



- Unit 2: Preventive, Interceptive, and Corrective Orthodontics.
- Unit 3: Diagnostics of Malocclusion.
- Unit 4: Orthodontic Diagnostics: Models, Photos, and X-rays Facial biotypes; Morphogenetic Facial growth.
- Unit 5: Etiology of Malocclusion from the Point of View of the Diagnosing
- Unit 6: Causes of Malocclusion due to environmental etiological factors Unfavourable Oral Habits, Anterior Open-bite.
- Unit 7: Anterior crossbite.
- Unit 8: Posterior crossbite I.
- Unit 9: Posterior crossbite II.
- Unit 10: Crowding in orthodontics Primary and Secondary Crowding in Mixed Dentition

**Specific competencies:**

- SC9. Know the procedures and clinical and laboratory diagnostic tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.
- SC10. Recognize normality and oral pathology, as well as the evaluation of semiological data.
- SC13. Manage, discriminate and select the appropriate materials and instruments in dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste
- SC16. Know and use the basic equipment and instrumentation for dental practice.
- SC18. Provide a comprehensive approach to oral care and apply the principles of health promotion and prevention of oral diseases
- SC19. Educate and motivate patients in the prevention of oral diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in summary, on all methods of maintaining oral health.

Year: <b>3th</b>	Course Code: <b>9999001408</b>	Course: <b>Stomatology Prosthesis III (Prótesis estomatológica III)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>4th</b>	Course Code: <b>P739001408</b>	Course: <b>Stomatology Prosthesis III</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>

**Course content/Units:**

- Unit 1. Theory content: Lesson 01. General concepts in fixed prosthesis. Lesson 02: General principles for the preparation of abutment teeth in fixed prosthesis. Lesson 03: Materials in fixed prosthodontics (I) Lesson 04: Materials in fixed prosthodontics (II) Lesson 05: Esthetic and functional planification. Lesson 06: Non-retentive tooth preparation principles: Veneers Lesson 07: Non-retentive tooth preparation principles: Partial coverage restorations. Lesson 08: Treatment of the partially edentulous patient with fixed partial tooth-supported prosthesis (I) Lesson 09: Treatment of the partially edentulous patient with fixed partial tooth-supported prosthesis (II) Lesson 10: Preprosthetic treatment (I) Endodontically treated tooth. Lesson11: Preprosthetic treatment (II) Lesson 12: Clinical cases
- Unit 2. Practical content: Practice 1: full metallic crown tooth preparation 46. practice 2: pfm (porcelain-fused to metal crown) tooth preparation 36. practice 3: pfm tooth preparation 14. practice 4: pfm tooth preparation 24. práctica 5: tooth preparation for full coverage ceramic crown: 23 monolithic and 33 veneered. practice 6: tooth preparation for full coverage ceramic crown: 11 monolithic and 13 veneered. practice 7: veneers, tooth preparation of 21, 22, 31 32. practice 8: veneers, tooth preparation of 11, 12, 41 42. practice 9: restoration of ett practice 10: tooth preparation examination: 35, 45, 16, 26. practice 10: SmartLab

**Specific competencies:**

- SC9. Know the procedures and clinical and laboratory diagnostic tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.
- SC10. Recognize normality and oral pathology, as well as the evaluation of semiological data.
- SC13. Manage, discriminate and select the appropriate materials and instruments in dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste
- SC37. Make diagnostic models, mount them, and take inter-occlusal recordings.
- SC38. Determine and identify the aesthetic requirements of the patient and the possibilities of satisfying their concerns.

Year: <b>4th</b>	Course Code: <b>9999001409</b>	Course: <b>Preventive Dentistry (Odontología preventiva)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4 ECTS</b>
Year: <b>4th</b>	Course Code:	Course: <b>Preventive Dentistry</b>	Program:	Term: <b>Semester 2</b>	Teaching Language:	Cr: <b>4 ECTS</b>

	<b>P739001409</b>		<b>Bachelor's Degree in Dentistry (100% English)</b>		<b>English</b>	
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction and basic concepts in Preventive Dentistry</li> <li>Unit 2. Preventive oral health measures</li> <li>Unit 3. Tooth decay and risk of caries</li> <li>Unit 4. Disinfection and sterilization processes</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC6. Know the scientific principles of sterilization, disinfection and antiseptics necessary to Prevent cross-infections in dental practice.</li> <li>SC18. Provide a global approach to oral care and apply the principles of health promotion and prevention of oral and dental diseases.</li> <li>SC19. Educate and motivate patients in the prevention of oral and dental diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in short, on all methods of maintaining oral health .</li> <li>SC20. Know the effects of tobacco on oral health and participate in measures that help patients who want to quit smoking.</li> <li>CE33. Have appropriate knowledge of human nutrition, in particular, the relationship of habits nutritional and dietary with health maintenance and disease prevention Oral</li> </ul>						

Year: <b>4th</b>	Course Code: <b>9999001410</b>	Course: <b>Oral Surgical Medical Pathology IV (Patología Médico Quirúrgica Bucal IV)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4 ECTS</b>
Year: <b>4th</b>	Course Code: <b>P739001410</b>	Course: <b>Oral Surgical Medical Pathology IV</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>4 ECTS</b>

<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Infections of the Oral and Facial Territory</li> <li>Unit 2: Preprosthetic Surgery. Implantology.</li> <li>Unit 3: Cysts and Tumors of the Jaws.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.</li> <li>SC10. Recognize oral normality and pathology, as well as the evaluation of semiology data.</li> <li>SC11. Identify the main reason for consultation and the history of the current disease. Take a general medical history of the patient and a clinical record that accurately reflects the patient's records.</li> <li>SC12. Know the behavioral and communication sciences that facilitate dental practice.</li> <li>SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste</li> <li>SC16. Know and use the basic equipment and instrumentation for dental practice.</li> <li>SC31. Know the pharmacological basis of the different anesthetic techniques, both local and general, as well as the role of sedation and general anesthesia in the management of the dental patient</li> </ul>						

Year: <b>4th</b>	Course Code: <b>9999001412</b>	Course: <b>Orthodontics IV (Ortodoncia IV)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
Year: <b>4th</b>	Course Code: <b>P739001412</b>	Course: <b>Orthodontics IV</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>3 ECTS</b>

<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Presentation of the course Orthodontics IV.</li> <li>Unit 2: Types of crowding. The "primary dental crowding". Different diagnosis and treatment.</li> <li>Unit 3: Types of crowding. The "secondary dental crowding". Different diagnosis and treatment.</li> <li>Unit 4: The planning of a treatment of serial extractions in the child patient. Protocol and cephalometric approach.</li> </ul>						

- Unit 5: Extractions in Orthodontics.
- Unit 6: Facial model of normal growth Model I. Cephalometric characteristics in this type of patients.
- Unit 7: Facial Model of growth Model II and dental and malocclusive characteristics. Treatment with extrabuccal cervical and parietal appliances.
- Unit 8: Diagnosis of skeletal alteration in patients with Model II with mandibular deficiency, identifying the different types of functional Class II correction devices.
- Unit 9: Model III facial growth type and malocclusive form, facial and cephalometric characteristics.
- Unit 10: Types of appliance used in the treatment of Model III. Facial mask and chin cup. Advantages, limitations and protocols of use.
- Unit 11: "Long Face" Model: clinical precepts in the interceptive and corrective treatment of this type of malocclusion.
- Unit 12: "Short Face" Model: functional treatment & fixed appliance.

**Specific competencies:**

- SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.
- SC10. Recognize oral normality and pathology, as well as the evaluation of semiology data.
- SC13. Manage, discriminate and select the appropriate materials and instruments in dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste
- SC16. Know and use the basic equipment and instrumentation for dental practice.
- SC18. Provide a global approach to oral care and apply the principles of health promotion and prevention of oral and dental diseases.
- SC19. Educate and motivate patients in the prevention of oral and dental diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in short, on all methods of maintaining oral health .

Year: <b>4th</b>	Course Code: <b>9999001413</b>	Course: <b>Pediatric Dentistry IV (Odontopediatría IV)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
Year: <b>4th</b>	Course Code: <b>P739001413</b>	Course: <b>Pediatric Dentistry IV</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>3 ECTS</b>

**Course content/Units:**

- Unit 1: Dental developmental disorders. 1.1.- Alterations of the developing dentition I. 1.2.- teething disorders in development II.
- Unit 2: Child patient behaviour control special situations. 2.1.- mentally and sensorially disabled patient 2.2.- child abuse
- Unit 3: Child patient emergency. 3.1.- pediatric dental emergencies. 3.2. surgical treatments in children I. 3.3. surgical treatments in children II
- Unit 4: Oral pathology in paediatric dentistry patients with special needs. 4.1.- oral pathology in the odontopediatric patient – 4.2.- systemic diseases with oral pathology – 4.3.- medically compromised patient 4.4.- integration of theoretical knowledge through the development of case analyses

**Specific competencies:**

- SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.
- SC10. Recognize oral normality and pathology, as well as the evaluation of semiology data.
- SC11. Identify the main reason for consultation and the history of the current disease. Take a general medical history of the patient and a clinical record that accurately reflects the patient's records.
- SC12. Know the behavioral and communication sciences that facilitate dental practice.
- SC18: To provide a comprehensive approach to oral care and apply the principles of health promotion and prevention of oral diseases.
- SC19: To educate and motivate patients in the prevention of oral diseases, to control pathogenic oral habits, to instruct them on proper oral hygiene, dietary and nutritional measures and, in short, on all methods of maintaining oral health.
- SC26: Recognise that the patient is the main person and that all interactions, including prevention, diagnosis, treatment planning and implementation, and maintenance, should be in the best interests of the patient, avoiding discrimination of any kind and respecting confidentiality. Identify signs and attitudes that suggest possible maltreatment. • SC29: To know the oral manifestations of systemic diseases.
- SC32: Knowledge and management of the most frequent dental and medical emergencies in dental practice and basic cardiorespiratory reanimation techniques.

Year: <b>4th</b>	Course Code: <b>9999001414</b>	Course: <b>Stomatology Prosthesis IV (<i>Prótesis estomatológica IV</i>)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>4th</b>	Course Code: <b>P739001414</b>	Course: <b>Stomatology Prosthesis IV</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Conventional impressions</li> <li>Unit 02/03: Digital impressions</li> <li>Unit 04: Working casts</li> <li>Unit 5: Temporary restorations</li> <li>Unit 6: Try-in's in fixed prosthesis</li> <li>Unit 7: Cementation</li> <li>Unit 8: Implant supported prosthesis</li> <li>Unit 9: Impressions in implant supported prosthesis</li> <li>Unit 10: Clinical case I</li> <li>Unit 11: Clinical case II</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity and be competent in the interpretation of their results.</li> <li>SC10. Recognize oral normality and pathology, as well as the evaluation of semiology data.</li> <li>SC13. Manage, discriminate and select the appropriate materials and instruments in dentistry.</li> <li>SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste</li> <li>SC37. Make diagnostic models, mount them, and take inter-occlusal recordings.</li> <li>SC38. Determine and identify the aesthetic requirements of the patient and the possibilities of satisfying their concerns.</li> </ul>						

Year: <b>4th</b>	Course Code: <b>9999001417</b>	Course: <b>Dental Therapeutics III (<i>Terapéutica dental III</i>)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4 ECTS</b>
Year: <b>4th</b>	Course Code: <b>P739001417</b>	Course: <b>Dental Therapeutics III</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>4 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Operative Dentistry III.</li> <li>Unit 2. New trends in caries diagnosis and treatments.</li> <li>Unit 3. Adhesion.</li> <li>Unit 4. Dental materials in Operative Dentistry. New composite resins. Cements.</li> <li>Unit 5. Aesthetic in Operative Dentistry</li> <li>Unit 6. Cosmetic dental treatments: minimal invasive procedures for the anterior teeth. Bleaching, contouring, microabrasion</li> <li>Unit 7. Cosmetic dental treatments for the anterior teeth: direct techniques. Adhesion of dental fragments</li> <li>Unit 8. Dental use of the glass fiber.</li> <li>Unit 9. Cosmetic dental treatments for the anterior teeth: indirect techniques.</li> <li>Unit 10. Cosmetic dental treatments for the posterior teeth: direct techniques. Dental occlusion in operative dentistry.</li> <li>Unit 11. Cosmetic dental treatments for the posterior teeth: indirect techniques.</li> <li>Unit 12. Endodontically treated teeth. LU13. Bruxism. Current concepts. Oral manifestations</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC3: Know how to identify the patient's concerns and expectations, as well as communicate effectively and clearly, both orally and in writing, with patients, family members, the media and other professionals.</li> <li>SC17: Understand and recognize the principles of ergonomics and safety at work (including control of cross infection, radiation protection and occupational and biological diseases).</li> </ul>						

- SC21: Knowing how to perform a complete oral examination, including appropriate radiographic and complementary examination tests, as well as obtaining adequate clinical references.
- SC25: Know and apply the basic treatment of the most common oral pathology in patients of all ages. Therapeutic procedures should be based on the concept of minimal invasion and on a global and integrated approach to oral treatment.
- SC26: Know how to plan and perform multidisciplinary, sequential and integrated dental treatments of limited complexity in patients of all ages and conditions and patients requiring special care.
- SC27: To propose and propose appropriate preventive measures for each clinical situation.
- SC30: Recognize the role of the dentist in the actions of prevention and protection against oral diseases, as well as in the maintenance and promotion of health, both at the individual and community level

Year: <b>4th</b>	Course Code: <b>9999001418</b>	Course: <b>Dental Therapeutics IV (Terapéutica dental IV)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4 ECTS</b>
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Year: <b>4th</b>	Course Code: <b>P739001418</b>	Course: <b>Dental Therapeutics IV</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>4 ECTS</b>
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**Course content/Units:**

- Unit 1. Presentation of the subject. Diagnostics in endodontics I.
- Unit 2. Diagnostic II
- Unit 3. Principles of the preparation of root canals
- Unit 4. Nickel instruments – Titanium I
- Unit 5. Nickel instruments – Titanium II
- Unit 6. Obturation materials
- Unit 7. Obturation techniques. Classification
- Unit 8. Emergencies in endodontics
- Unit 9. Accidents and complications in endodontics.
- Unit 10. Pharmacology in endodontics
- Unit 11. Treatment of a tooth with immature apex
- Unit 12. Endoperiodontal pathology
- Unit 13. Endodontic surgery
- Unit 14. Clinical cases I in endodontics
- Unit 15. Clinical cases II in endodontics

**Specific competencies:**

- SC10. Recognize oral normality and pathology, as well as the evaluation of semiology data.
- SC13. Manage, discriminate and select the appropriate materials and instruments in dentistry.
- SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste
- SC16. Know and use the basic equipment and instrumentation for dental practice.
- SC18. Provide a global approach to oral care and apply the principles of health promotion and prevention of oral and dental diseases.
- SC19. Educate and motivate patients in the prevention of oral diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in summary, on all methods of maintaining oral health.
- SC44. Prepare and isolate the operative field.

4	P739001503	Eu-Dentistry And Public-Oral Health	Semestre 1 / Fall Term (Sept – Jan)		English	6
4	P739001505	Special Patients	Semestre 2 / Spring Term (Jan – Jun)		English	3
4	P739001507	Professionalism	Semestre 1 / Fall Term (Sept – Jan)		English	4
4	P739001508	Radioprotection	Semestre 1 / Fall Term (Sept – Jan)		English	2
4	P739001509	Emergencies in the office	Semestre 2 / Spring Term (Jan – Jun)		English	3

Year: <b>5th</b>	Course Code: <b>9999001803</b>	Course: <b>Advanced Implantology (Implantología avanzada)</b>	Program: <b>Bachelor's Degree in Dentistry</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
Year: <b>5th</b>	Course Code: <b>P739001803</b>	Course: <b>Advanced Implantology</b>	Program: <b>Bachelor's Degree in Dentistry (100% English)</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: 1.1. Concept of dental implant. Historical background. 1.2. Biology of osseointegration. Characteristics of peri-implant tissues. 1.3. Systems and types of implants currently in force. 1.4. Treatment planning. Indications. Absolute, relative and temporary contraindications. 1.5. Treatment planning. Radiological diagnosis 1.6. Treatment planning. Determination of the position, angulation and number of osseointegrated implants required. 1.7. Anatomical considerations in implant surgery. 1.8. Premedication, sedation, anesthesia and postoperative medication in the patient undergoing treatment with implants. 1.9. Surgical act. 1.10. Intraoperative and postoperative complications. 1.11. Surgery of placement of healing abutments or second stage surgery</li> <li>Unit 2: 2.1. Implants in atrophic jaws. 2.2. Immediate implants postextraction. 2.3. Immediate loading implants. 2.4. Maintenance and revisions in patients rehabilitated with implants.</li> <li>Unit 3: 3.1. Biomechanics in implantology. 3.2. Rehabilitation in the previous sector. Aesthetic considerations. 3.3. Unit crowns and partial bridges in the posterior sector. 3.4. Overdentures. 3.5. Complete implant supported restorations. 3.6. Immediate loading prosthesis</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC10: Recognising normality and oral pathology, as well as the evaluation of semiological data.</li> <li>SC13: Handle, discriminate and select the appropriate materials and instruments in dentistry.</li> <li>SC14: Knowing dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.</li> <li>SC16: Knowing and using basic equipment and instrumentation for dental practice.</li> <li>SC20: Knowing the effects of tobacco on oral health and participating in measures to help patients who wish to stop smoking.</li> </ul>						

<b>4</b>	<b>P739001805</b>	<b>Dental Office Ergonomics and Organization</b>	<b>Semestre 1 / Fall Term (Sept—Jan)</b>		<b>English</b>	<b>3</b>
<b>4</b>	<b>P739001813</b>	<b>Professional Risks</b>	<b>Semestre 2 / Spring Term (Jan—Jun)</b>		<b>English</b>	<b>3</b>
<b>4</b>	<b>P739001815</b>	<b>Anomalies and Malformations in the Development of the cranium and orofacial area</b>	<b>Semestre 2 / Spring Term (Jan—Jun)</b>		<b>English</b>	<b>3</b>

## Bachelor's degree in Psychology (English + Spanish)

<b>1</b>	<b>P394001101</b>	<b>Sensory Perception and Attention</b>	<b>Semestre 2 / Spring Term (Jan—Jun)</b>		<b>English</b>	<b>6</b>
<b>1</b>	<b>P394001102</b>	<b>Human Anatomy</b>	<b>Semestre 1 / Fall Term (Sept—Jan)</b>		<b>English</b>	<b>6</b>
<b>1</b>	<b>P394001103</b>	<b>Behavioural Biology</b>	<b>Semestre 1 / Fall Term (Sept—Jan)</b>		<b>English</b>	<b>6</b>
<b>1</b>	<b>P394001104</b>	<b>History of Psychology and Fields of Activity</b>	<b>Semestre 1 / Fall Term (Sept—Jan)</b>		<b>English</b>	<b>6</b>
<b>1</b>	<b>P394001105</b>	<b>Social Psychology</b>	<b>Semestre 1 / Fall Term (Sept—Jan)</b>		<b>English</b>	<b>6</b>
<b>1</b>	<b>P394001106</b>	<b>Physiology</b>	<b>Semestre 2 / Spring Term (Jan—Jun)</b>		<b>English</b>	<b>6</b>
<b>1</b>	<b>P394001107</b>	<b>Psychological Assessment</b>	<b>Semestre 2 / Spring Term (Jan—Jun)</b>		<b>English</b>	<b>6</b>
<b>1</b>	<b>P394001109</b>	<b>Memory and Learning Process</b>	<b>Semestre 2 / Spring Term (Jan—Jun)</b>		<b>English</b>	<b>6</b>

1	P394001110	Applied Statistics in Psychology	Semestre 2 / Spring Term (Jan–Jun)	English	6
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Year: 2nd	Course code: 9937001201	Course: <b>Motivation and emotion</b> (Motivación y emoción)	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: 2nd	Course code: P394001201	Course: <b>Motivation and emotion</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Motivation 1.1. Introduction to the motivational process 1.2. Main theoretical aspects of motivation 1.3. Main motives 1.4. Biological bases of motivation
- Unit 2. Emotion 2.1. Introduction to the emotion process. 2.2. Main theoretical aspects of emotion 2.3. Main Emotions 2.4. Neurophysiological bases of emotion
- Unit 3. Motivation and emotion 3.1. Areas of application of motivation and emotion.

**Specific competencies:**

- SC02: Understand the basic laws of different psychological processes in the field of Health Psychology.
- SC03: Understand the main processes and stages of psychological development throughout the lifespan, in both normal and abnormal aspects, in the field of Health Psychology.
- SC04: Understand the biological foundations of human behavior and psychological functions.
- SC13: Be able to describe and measure variables (personality, intelligence, other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.
- SC14: Be able to identify differences, problems, and needs.

Year: 2nd	Course code: 9937001202	Course: <b>Psychodiagnostics</b> (Psicodiagnóstico)	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: 2nd	Course code: P394001202	Course: <b>Psychodiagnostics</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Psychological Assessment model and process in Clinical Psychology and Counseling
- Unit 2. What is a Clinical Psychological Assessment?
- Unit 3. Different assessment models in clinical psychology
- Unit 4. The phases of the Psychological Assessment process
- Unit 5. The instruments of the clinical Psychological Assessment
- Unit 6. The Clinical Psychological Assessment report
- Unit 7. Evaluation of psychological intervention results

**Specific competencies:**

- SC01: Understand the functions, characteristics, and limitations of different theoretical models of Psychology in the field of Health Psychology. • SC02: Understand the basic laws of different psychological processes in the field of Health Psychology.
- SC07: Understand different methods of assessment, diagnosis, and psychological treatments in different applied areas of Health Psychology. • SC11: Be able to establish the goals of psychological action in different contexts, proposing and negotiating goals with recipients and those affected.
- SC12: Be able to plan and conduct an interview.
- SC13: Be able to describe and measure variables (personality, intelligence, other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.
- SC14: Be able to identify differences, problems, and needs.
- SC15: Be able to diagnose following the criteria of the profession.
- SC20: Analyze the context in which individual behaviors, group processes, and organizational processes develop.
- SC34: Provide appropriate and precise feedback to recipients.
- SC35: Be capable of preparing oral and written reports.
- SC36: Understand and adhere to the ethical obligations of Psychology.

Year: <b>2nd</b>	Course code: <b>9937001203</b>	Course: <b>Research methods in Psychology</b> ( <i>Métodos de investigación en Psicología</i> )	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>P394001203</b>	Course: <b>Research methods in Psychology</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Empirical basis of research. Knowledge generation.</li> <li>Unit 2. Quantitative research requirements: reliability and validity: types and threats</li> <li>Unit 3. The observational method</li> <li>Unit 4. The selective or correlational method</li> <li>Unit 5. The experimental method</li> <li>Unit 6. The conceptual framework and the literature review</li> <li>Unit 7. How to disseminate the results of an investigation</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC02: Understand the basic laws of different psychological processes in the field of Health Psychology</li> <li>SC04: Understand the biological foundations of human behavior and psychological functions</li> <li>SC05: Understand the psychosocial principles of group and organizational functioning.</li> <li>SC13: Be able to describe and measure variables (personality, intelligence and other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological and behavioral processes</li> <li>SC14: Be able to identify differences, problems and needs</li> <li>SC21: Be able to select and manage instruments, products and services and be able to identify interested people and groups</li> <li>SC22: Be able to design and adapt instruments, products and services, according to the requirements and restrictions</li> <li>SC23: Be able to test and validate instruments, products and services (prototypes or pilot tests)</li> <li>SC34: Be able to provide appropriate and accurate feedback to recipients.</li> <li>SC35: Be able to prepare oral and written reports</li> <li>SC37: Ability to practice the profession using the English and/or Spanish language, both to specialized and non-specialized audiences.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9937001204</b>	Course: <b>Psychopathology</b> ( <i>Psicopatología</i> )	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>2nd</b>	Course code: <b>P394001204</b>	Course: <b>Psychopathology</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. History of psychopathology</li> <li>Unit 2. Diagnosis of abnormal behavior: models and classification systems</li> <li>Unit 3. Psychopathology of attention</li> <li>Unit 4. Psychopathology of perception</li> <li>Unit 5. Psychopathology of memory</li> <li>Unit 6. Psychopathology of emotions</li> <li>Unit 7. Psychopathology of thought</li> <li>Unit 8. Psychopathology of symbolic functions (communication and language)</li> <li>Unit 9. Psychopathology of consciousness</li> <li>Unit 10. Sleep-wake psychopathology</li> <li>Unit 11. Space-time disorientation</li> <li>Unit 12. Psychopathology of impulses</li> <li>Unit 13. Psychopathology of executive functions</li> <li>Unit 14. Neuroanatomy and neuropsychology</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC01: Understand the functions, characteristics, and limitations of different theoretical models of Psychology in the field of Health Psychology. SC02: Understand the basic laws of different psychological processes in the field of Health Psychology.</li> </ul>						



- SC07: Understand different methods of assessment, diagnosis, and psychological treatments in different applied areas of Health Psychology.
- SC10: Analyze the needs and demands of the recipients in different contexts.
- SC11: Be able to establish the goals of psychological action in different contexts, proposing and negotiating goals with recipients and those affected.
- SC12: Be able to plan and conduct an interview.
- SC14: Be able to identify differences, problems, and needs.
- SC15: Be able to diagnose following the criteria specific to the profession. CP36: Understand and adhere to the ethical obligations of Psychology.

Year: <b>2nd</b>	Course code: <b>9937001205</b>	Course: <b>Intervention Techniques in Psychology</b> ( <i>Técnicas de intervención en Psicología</i> )	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P394001205</b>	Course: <b>Intervention Techniques in Psychology</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Models of intervention and treatment from a behavioural perspective.
- Unit 2. Models of intervention and treatment from a cognitive perspective.
- Unit 3. Third-wave behaviour therapy
- Unit 4. Models of intervention and treatment from a psychodynamic perspective

**Specific competencies:**

- SC01: Understand the functions, characteristics, and limitations of different theoretical models of Psychology in the field of Health Psychology. SC07: Familiarize with different methods of assessment, diagnosis, and psychological treatments in different applied fields of Health Psychology. SC10: Analyze the needs and demands of recipients in different contexts.
- SC11: Be able to establish goals for psychological action in different contexts, proposing and negotiating goals with recipients and stakeholders. SC12: Be able to plan and conduct an interview.
- SC13: Be able to describe and measure variables (personality, intelligence, and other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.
- SC15: Be able to diagnose according to the profession's criteria.
- SC24: Define objectives and develop an intervention plan based on its purpose (prevention, treatment, rehabilitation, insertion, support, etc.).
- SC25: Select appropriate psychological intervention techniques to achieve objectives.
- SC26: Master strategies and techniques to involve recipients in the intervention: psychological counseling, therapy, negotiation, mediation, etc.
- SC27: Apply direct intervention strategies and methods to recipients: psychological advice, therapy, negotiation, mediation, etc.
- SC28: Apply direct intervention strategies and methods to contexts: creating healthy environments, etc.
- SC29: Apply indirect intervention strategies and methods through other individuals: counseling, training of trainers, and other agents.
- SC34: Provide appropriate and accurate feedback to recipients.
- SC35: Be capable of preparing oral and written reports.
- SC36: Understand and adhere to the ethical obligations of Psychology.

Year: <b>2nd</b>	Course code: <b>9937001206</b>	Course: <b>Thought and Language</b> ( <i>Pensamiento y Lengua</i> )	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>2nd</b>	Course code: <b>P394001206</b>	Course: <b>Thought and Language</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to the concept of thought
- Unit 2. Deductive reasoning: linear, syllogistic, and propositional
- Unit 3. Inductive and heuristic reasoning

- Unit 4. Critical thinking
- Unit 5. Basic processes of language
- Unit 6. Psychological functions of language
- Unit 7. Linguistic acquisition, comprehension, and production
- Unit 8. Assessment and communication, language, and speech disorders

**Specific competencies:**

- SC02: Understand the basic laws of different psychological processes in the field of Health Psychology
- SC03: Understand the main processes and stages of psychological development throughout the lifespan, in both normal and abnormal aspects, in the field of Health Psychology.
- SC04: Understand the biological foundations of human behavior and psychological functions
- SC13: Be able to describe and measure variables (personality, intelligence and other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological and behavioral processes
- SC14: Be able to identify differences, problems and needs

Year: <b>2nd</b>	Course code: <b>9937001207</b>	Course: <b>Developmental Psychology</b> ( <i>Psicología del desarrollo</i> )	Program: <b>Bachelor´s Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>2nd</b>	Course code: <b>P394001207</b>	Course: <b>Developmental Psychology</b>	Program: <b>Bachelor´s Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Introduction to developmental psychology.
- Unit 2. Contexts of development.
- Unit 3. Development of perceptive and attentive abilities.
- Unit 4. Development of cognitive, linguistic and moral capacities.
- Unit 5. Affective-social development and development of identity and personality.

**Specific competencies:**

- SC01: Understand the functions, characteristics, and limitations of different theoretical models in the field of Health Psychology.
- SC02: Understand the basic laws of different psychological processes in the field of Health Psychology.
- SC03: Understand the main processes and stages of psychological development throughout the lifespan, including aspects of normality and abnormality, in the field of Health Psychology.
- SC04: Understand the biological foundations of human behavior and psychological functions.
- SC09: Understand the different fields of application of Psychology and have the necessary knowledge to impact and promote the quality of life in individuals, groups, communities, and organizations in different contexts: educational, clinical and health, work and organizations, and community.
- SC13: Be able to describe and measure variables (personality, intelligence, and other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.
- SC14: Be able to identify differences, problems, and needs.
- SC34: Know how to provide appropriate and accurate feedback to recipients.
- SC35: Be able to prepare oral and written reports.
- SC36: Understand and adhere to the ethical obligations of Psychology.
- SC37: Ability to practice the profession using English and/or Spanish languages, both with specialized and non-specialized audiences

Year: <b>2nd</b>	Course code: <b>P394001209</b>	Course: <b>Modern Language</b> (language: spanish) ( <i>Idioma moderno</i> )	Program: <b>Bachelor´s Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Note 1:** the level of the pass will be Spanish B2. A Spanish B1 is recommended to take this course

**Note 2:** the Spanish taught is focused on clinic cases

**Course content/Units:**

- Unit 1. Vocabulary on topics of general/current interest and specific to the field of study.
- Unit 2. Grammatical and communication structures in Spanish.
- Unit 3. Listening exercises on topics of general interest and/or the field of study.
- Unit 4. Oral and written communication in Spanish.
- Unit 5. How to give a good multimedia presentation in Spanish.

Year: <b>3rd</b>	Course code: <b>P394001301</b>	Course: <b>Leadership Skills (<i>Habilidades directivas</i>)</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction</li> <li>• Unit 2. Leadership. 2.1 Leader profile and visión. 2.2 Continuous improvement of the manager. Learning and development. 2.3 Ethics, exemplarity and social responsibility.</li> <li>• Unit 3. Recruitment &amp; Selection. 3.1 Assessing needs. 3.2 Job descriptions &amp; recruitment sources. 3.3 Assessing talent. 3.4 Decision making. 3.5 Recruitment policies</li> <li>• Unit 4. Performance appraisal and performance management</li> <li>• Unit 5. Motivation. 5.1 Motivational theories. 5.2 Job design and motivation. 5.3 Goal-based management</li> <li>• Unit 6. Communication and interpersonal skills. 6.1 Effective feedback. 6.2 Attitudes and emotions at work. 6.2. Group dynamics. 6.3 Conflict and change management</li> <li>• Unit 7. Managing multiculturalism</li> <li>• Unit 8. Time planning and management</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9937001302</b>	Course: <b>Life Span Psychology (<i>Psicología del ciclo vital</i>)</b>	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P394001302</b>	Course: <b>Life Span Psychology</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction</li> <li>• Unit 2. Prenatal, Childbirth and Neonatal Period.</li> <li>• Unit 3. Developmental psychology of Infancy and Childhood</li> <li>• Unit 4. Developmental psychology of Adolescence.</li> <li>• Unit 5. Developmental psychology of Early Adulthood.</li> <li>• Unit 6. Developmental psychology of Middle Adulthood.</li> <li>• Unit 7. Developmental psychology of Late Adulthood.</li> <li>• Unit 8. Stages and Psychological Impact of Death</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CP01: Understand the functions, characteristics, and limitations of different theoretical models in the field of Health Psychology.</li> <li>• CP02: Understand the basic laws of different psychological processes in the field of Health Psychology.</li> <li>• CP03: Understand the main processes and stages of psychological development throughout the lifespan, including aspects of normality and abnormality in the field of Health Psychology. C</li> <li>• P04: Understand the biological foundations of human behavior and psychological functions.</li> <li>• CP09: Understand the different fields of application of psychology and have the necessary knowledge to impact and promote quality of life in individuals, groups, communities, and organizations in various contexts: educational, clinical and health, work and organizations, and community. CP10: Analyze the needs and demands of recipients in different contexts.</li> <li>• CP11: Be able to establish goals for psychological intervention in different contexts, proposing and negotiating goals with recipients and stakeholders.</li> <li>• CP12: Be able to plan and conduct an interview.</li> <li>• CP13: Be able to describe and measure variables (personality, intelligence, and other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.</li> <li>• CP14: Be able to identify differences, problems, and needs.</li> <li>• CP15: Be able to diagnose according to the criteria of the profession.</li> <li>• CP20: Analyze the context in which individual behaviors, group processes, and organizational behaviors develop.</li> <li>• CP24: Be able to define objectives and develop an intervention plan based on its purpose (prevention, treatment, rehabilitation, insertion, support, etc.).</li> <li>• CP30: Plan the evaluation of programs and interventions.</li> <li>• CP32: Be able to measure and obtain relevant data for the evaluation of interventions.</li> <li>• CP34: Provide appropriate and accurate feedback to recipients.</li> </ul>						

- CP35: Be able to develop oral and written reports. CP36: Understand and adhere to the ethical obligations of psychology.

Year: <b>3rd</b>	Course code: <b>9937001303</b>	Course: <b>Psychometrics (Psicometría)</b>	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>P394001303</b>	Course: <b>Psychometrics</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Psychometrics
- Unit 2. Introduction to measurement in Psychology
- Unit 3. Fundamentals of statistics: tests manuals
- Unit 4. Reliability and validity
- Unit 5. Test construction and item analysis
- Unit 6. Factorial analysis
- Unit 7. Item Response Theory

**Specific competencies:**

- CP02: Understand the basic laws of different psychological processes in the field of Health Psychology.
- CP03: Understand the main processes and stages of psychological development throughout the lifespan, in terms of normality and abnormality, in the field of Health Psychology.
- CP04: Understand the biological foundations of human behavior and psychological functions.
- CP05: Understand the psychosocial principles of group and organizational functioning.
- CP08: Understand different research designs, hypothesis formulation and testing procedures, interpretation of results, and be able to apply them in the field of Health Psychology.
- CP13: Be able to describe and measure variables (personality, intelligence and other abilities, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.
- CP14: Be able to identify differences, problems, and needs.
- CP17: Be able to identify group and intergroup problems and needs.
- CP18: Be able to describe and measure interaction processes, organizational dynamics, and organizational and inter-organizational structures.
- CP21: Be able to select and manage instruments, products, and services and identify interested individuals and groups.
- CP22: Be able to design and adapt instruments, products, and services according to requirements and constraints.
- CP23: Be able to test and validate instruments, products, and services (prototypes or pilot tests).

Year: <b>3rd</b>	Course code: <b>P394001304</b>	Course: <b>Communication Skills (Habilidades comunicativas)</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Basic principles of communication
- Unit 2. Elements that participate in communication
- Unit 3. Levels of communication
- Unit 4. Orthography, diction, synthesis and argument
- Unit 5. Writing and exhibition
- Unit 6. Use of support in communication
- Unit 7. Effective communication
- Unit 8. Electronic communication and report elaboration
- Unit 9. Effective presentations

Year: <b>4th</b>	Course code: <b>9937001401</b>	Course: <b>Personality psychology and Intelligence (Psicología de la personalidad y la Inteligencia)</b>	Program: <b>Bachelor's Degree in Psychology (Grado en Psicología)</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: 4th	Course code: P394001401	Course: Personality psychology and Intelligence	Program: Bachelor's Degree in Psychology-100% English	Term: Semester 1	Teaching Language: English	Cr: 6 ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to differential psychology 1.1. Introduction, definition and characteristics of differential psychology: Historical antecedents and scientific schools. 1.2. Application and methodological implication. 1.3. Heredity and environment.</li> <li>Unit 2. Personality 2.1. Introduction and conceptualization of personality. 2.2. Models in the study of personality. 2.3. Theoretical approaches to the study of personality.</li> <li>Unit 3. Intelligence 3.1. Introduction and conceptualization of intelligence. 3.2. Methodology in the study of intelligence. 3.3. Structures and theories of intelligence: variables in intelligence</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC02: Understand the basic laws of different psychological processes in the field of Health Psychology.</li> <li>SC03: Understand the main processes and stages of psychological development throughout the lifespan, in terms of normality and abnormality, in the field of Health Psychology.</li> <li>SC04: Understand the biological foundations of human behavior and psychological functions.</li> <li>SC05: Understand the psychosocial principles of group and organizational functioning.</li> <li>SC08: Understand different research designs, hypothesis formulation and testing procedures, interpretation of results, and be able to apply them in the field of Health Psychology.</li> <li>SC10: Analyze the needs and demands of recipients in different contexts.</li> <li>SC11: Be capable of establishing goals for psychological action in different contexts, proposing and negotiating goals with recipients and those affected.</li> <li>SC21: Select and administer instruments, products, and services, and be able to identify interested individuals and groups.</li> <li>SC22: Design and adapt instruments, products, and services according to requirements and restrictions.</li> <li>SC23: Test and validate instruments, products, and services (prototypes or pilot tests).</li> <li>SC30: Plan the evaluation of programs and interventions.</li> <li>SC31: Select and construct indicators and measurement techniques to evaluate programs and interventions.</li> <li>SC33: Analyze and interpret evaluation results.</li> <li>SC34: Provide feedback to recipients in an appropriate and accurate manner.</li> <li>SC35: Be capable of preparing oral and written reports.</li> </ul>						

Year: 4th	Course code: P394001402	Course: Ethical Values ( <i>Valores éticos</i> )	Program: Bachelor's Degree in Psychology-100% English	Term: Semester 2	Teaching Language: English	Cr: 6 ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. General principles of ethics in psychology</li> <li>Unit 2. Deontological codes of the psychologists</li> <li>Unit 3. The process of moral deliberation</li> <li>Unit 4. Ethics of professional competence and relationships with other professionals</li> <li>Unit 5. Ethics in the area of clinical psychology</li> <li>Unit 6. Ethics in the area of psychological assessment.</li> <li>Unit 7. Ethics in research and teaching.</li> <li>Unit 8. Ethics in labor psychology.</li> <li>Unit 9. Ethics in legal psychology.</li> <li>Unit 10. Ethics in health psychology and bioethics.</li> </ul>						

Year: 3rd	Course code: 9937001806	Course: Neuropsychology ( <i>Neuropsicología</i> )	Program: Bachelor's Degree in Psychology	Term: Semester 1	Teaching Language: Spanish	Cr: 6 ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Neuropsychology</li> <li>Unit 2. Functional anatomical organization of the nervous system and neuroendocrine system.</li> <li>Unit 3. Methods in psychophysiology and neuropsychological assessment.</li> </ul>						

- Unit 4. Neuropsychology of praxis and gnosis.
- Unit 5. Neuropsychology of language.
- Unit 6. Neuropsychology of learning and memory.
- Unit 7. Neuropsychology of attention.
- Unit 8. Neuropsychology of executive functions
- Unit 9. Emotion and the social brain
- Unit 10. Neurological disorders

**Specific competencies:**

- SC04: Understand the biological foundations of human behavior and psychological functions.
- SC13: Be able to describe and measure variables (personality, intelligence and other abilities, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.

Year: <b>3rd</b>	Course code: <b>9937001809</b>	Course: <b>Advanced Psychopatology</b> <i>(Psicopatología avanzada)</i>	Program: <b>Bachelor´s Degree in Psychology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>3rd</b>	Course code: <b>P394001809</b>	Course: <b>Advanced Psychopatology</b>	Program: <b>Bachelor´s Degree in Psychology-100% English</b>	Term: <b>Semester 2</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 0: Introduction, from General Psychopathology to Advanced Psychopathology
- Unit 1: Neurodevelopmental disorders and neurocognitive disorders. Learning disorders
- Unit 2: Schizophrenia and other psychotic disorders
- Unit 3: Anxiety Disorders
- Unit 4: Mood disorders: bipolar disorder and Depressive disorder
- Unit 5: Obsessive-compulsive disorder, behavior disorders and impulse control disorders
- Unit 6: Trauma related disorders and stress factors and dissociative disorders
- Unit 7: Eating Disorders
- Unit 8: Disorders of sexual function, gender dysphoria and paraphilic disorders
- Unit 9: Substance and addictive use disorders
- Unit 10: Personality disorders
- Unit 11: Somatic Symptom Disorders

**Specific competencies:**

- SC03: Understand the main processes and stages of psychological development throughout the lifespan, in terms of normality and abnormality, in the field of Health Psychology.
- SC09: Familiarize oneself with the different fields of application in psychology and possess the necessary knowledge to influence and promote the quality of life in individuals, groups, communities, and organizations within various contexts: educational, clinical and health, work and organizations, and community.
- SC14: Be able to identify differences, problems, and needs.
- SC15: Be able to diagnose following the criteria specific to the profession.
- SC17: Be able to identify group and intergroup problems and needs.
- SC24: Be able to define objectives and develop an intervention plan based on its purpose (prevention, treatment, rehabilitation, integration, support, etc.).
- SC34: Know how to provide appropriate and accurate feedback to recipients.
- SC35: Be capable of preparing oral and written reports.
- SC36: Understand and adhere to the ethical obligations of Psychology.

Year: <b>4th</b>	Course code: <b>9937001816</b>	Course: <b>Psychopharmacology</b> <i>(Psicofarmacología)</i>	Program: <b>Bachelor´s Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>4th</b>	Course code: <b>P394001816</b>	Course: <b>Psychopharmacology</b>	Program: <b>Bachelor´s Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Introduction: structure and function of the nervous system
- Unit 2. Research methods in neuropsychopharmacology

- Unit 3. Principles of psychopharmacology, pharmacokinetics, and pharmacodynamics
- Unit 4. Chemical signaling
- Unit 5. Major neurotransmitter systems
- Unit 6. Antipsychotics
- Unit 7. Anxiolytics
- Unit 8. Antidepressants
- Unit 9. Drug abuse and addiction

**Specific competencies:**

- SC10: Analyze the needs and demands of recipients in different contexts.
- SC11: Be capable of establishing goals for psychological action in different contexts, proposing and negotiating goals with recipients and those affected.
- SC24: Be able to define objectives and develop an intervention plan based on its purpose (prevention, treatment, rehabilitation, insertion, support, etc.).
- SC36: Understand and adhere to the ethical obligations of Psychology.
- SC37: Ability to practice the profession using the English and/or Spanish language, both with specialized and non-specialized audiences.

Year: <b>3rd</b>	Course code: <b>9937001817</b>	Course: <b>Health Psychology (<i>Psicología de la salud</i>)</b>	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
Year: <b>3rd</b>	Course code: <b>P394001817</b>	Course: <b>Health Psychology</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS

**Course content/Units:**

- Unit 1. Introduction to Health Psychology. The biopsychosocial model
- Unit 2. Promotion of health and healthy behaviors. Psychological processes and their influence on health.
- Motivation and emotions. Adherence to treatment
- Unit 3. Stress and coping. Psychoneuroimmunology. Coping with chronic disease
- Unit 4. Psycho-oncology: psychological aspects of Oncologic Diseases
- Unit 5. Psychological Aspects of HIV / AIDS
- Unit 6. Psychological Aspects of Cardiovascular Diseases
- Unit 7. Psychological Aspects of Diabetes
- Unit 8. Psychological Aspects of Chronic Pain. Pain Management
- Unit 9. The terminal patient. Palliative care

**Specific competencies:**

- SC02: Understand the basic principles of different psychological processes in the field of Health Psychology.
- SC04: Understand the biological foundations of human behavior and psychological functions.
- SC09: Understand the different fields of application of Psychology and possess the necessary knowledge to impact and promote the quality of life in individuals, groups, communities, and organizations in various contexts: educational, clinical and health, work and organizations, and community.
- SC10: Be able to analyze the needs and demands of recipients in different contexts.
- SC11: Be capable of establishing the goals of psychological intervention in different contexts, proposing and negotiating goals with recipients and stakeholders.
- SC13: Be able to describe and measure variables (personality, intelligence, and other abilities, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.
- SC14: Be able to identify differences, problems, and needs.
- SC17: Be able to identify group and intergroup problems and needs.
- SC20: Be able to analyze the context in which individual behaviors, group processes, and organizational behaviors occur.
- SC22: Be able to design and adapt instruments, products, and services according to requirements and restrictions.
- SC24: Be capable of defining objectives and developing an intervention plan based on its purpose (prevention, treatment, rehabilitation, insertion, support, etc.).
- SC28: Be able to apply direct intervention strategies and methods to contexts: creating healthy environments, etc.
- SC29: Be able to apply indirect intervention strategies and methods through other people: counseling, training trainers, and other agents.
- SC34: Be able to provide appropriate and accurate feedback to recipients.
- SC35: Be capable of preparing oral and written reports. CP36: Understand and adhere to the ethical obligations of Psychology.

Year: <b>4th</b>	Course code: <b>9937001827</b>	Course: <b>Psychogeriatrics (<i>Psicogeriatría</i>)</b>	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>4th</b>	Course code: <b>P394001827</b>	Course: <b>Psychogeriatrics</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction</li> <li>• Unit 2. Stability and change in aging.</li> <li>• Unit 3. Geropsychological assessment</li> <li>• Unit 4. Assessment and intervention in dementia</li> <li>• Unit 5. Assessment and intervention in affective disorders: depression and anxiety</li> <li>• Unit 6. Assessment and intervention in dependence in old age.</li> <li>• Unit 7. Active, healthy, successful ageing</li> <li>• Unit 8. Quality of life in old age.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SCP02: Understand the basic laws of different psychological processes in the field of Health Psychology.</li> <li>• SC20: Analyze the context in which individual behaviors, group processes, and organizational processes take place.</li> <li>• SC28: Apply strategies and direct intervention methods to create healthy environments.</li> <li>• SC29: Apply indirect intervention strategies and methods through other individuals, such as counseling, training of trainers, and other agents.</li> <li>• SC30: Plan the evaluation of programs and interventions.</li> <li>• SCP32: Measure and obtain relevant data for the evaluation of interventions.</li> <li>• SC33: Analyze and interpret the results of the evaluation.</li> <li>• SC36: Understand and adhere to the ethical obligations of Psychology.</li> <li>• SC37: Ability to practice the profession using both English and Spanish languages, to specialized and non-specialized audiences.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9937001840</b>	Course: <b>Psychological Treatment In Adults (<i>Tratamiento psicológico en el adulto</i>)</b>	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>4th</b>	Course code: <b>P394001840</b>	Course: <b>Psychological Treatment In Adults</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to adults' individual treatment 1.1. History and concept of Psychotherapy 1.2. Philosophical bases of psychotherapy 1.3. Nature of psychological problems</li> <li>• Unit 2. Traditions in psychotherapy</li> <li>• Unit 3. Psychological treatments with empirical support 3.1 Introduction to Evidence-Based Therapies 3.2 Evidence-Based therapies for specific problems 3.3 Common factors and process research</li> <li>• Unit 4. Structure of psychotherapy and its functioning 4.1 Assessment and evaluation 4.2 Treatment 4.3 Follow-up 4.4 Group therapies and family therapies 4.5 Supervision in therapy</li> <li>• Unit 5. Future trends and therapeutic innovation 5.1 Process-based therapy 5.2 Measuring, predicting, and tracking changes in Psychotherapy</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SCP02: Understand the basic laws of different psychological processes in the field of Health Psychology.</li> <li>• SCP10: Analyze the needs and demands of the recipients in different contexts.</li> <li>• SC11: Be able to establish the goals of psychological intervention in different contexts, proposing and negotiating the goals with the recipients and those affected.</li> <li>• SC12: Be able to plan and conduct an interview.</li> <li>• SC13: Be able to describe and measure variables (personality, intelligence, and other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.</li> <li>• SC14: Be able to identify differences, problems, and needs.</li> </ul>						



- SC15: Be able to diagnose following the criteria specific to the profession.
- SC16: Understand and measure interaction processes, group dynamics, and group and intergroup structure.
- SC20: Analyze the context in which individual behaviors, group processes, and organizational processes occur.
- SC24: Be able to define objectives and develop an intervention plan based on its purpose (prevention, treatment, rehabilitation, insertion, support...).
- SC25: Be able to choose appropriate psychological intervention techniques to achieve the objectives.
- SC26: Master strategies and techniques for involving recipients in the intervention.
- SC27: Apply direct intervention strategies and methods to recipients: psychological counseling, therapy, negotiation, mediation...
- SC30: Plan the evaluation of programs and interventions.
- SC32: Be able to measure and obtain relevant data for the evaluation of interventions.
- SC33: Be able to analyze and interpret the results of the evaluation.
- SC34: Provide appropriate and accurate feedback to recipients.
- SC35: Be able to prepare oral and written reports.
- SC36: Understand and adhere to the ethical obligations of Psychology.
- SC37: Ability to practice the profession using both English and Spanish languages, to specialized and non-specialized audiences

Year: <b>4th</b>	Course code: <b>9937001841</b>	Course: <b>Psychological Treatment in Childhood and Adolescence</b> <i>(Tratamiento psicológico en la infancia y la adolescencia)</i>	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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Year: <b>4th</b>	Course code: <b>P394001841</b>	Course: <b>Psychological Treatment in Childhood and Adolescence</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Theoretical approaches
- Unit 2. Therapeutic skills in the treatment of children and adolescents
- Unit 3. Disruptive behavior
- Unit 4. Attention Deficit and Hyperactivity Disorder (ADHD)
- Unit 5. Trauma and abuse
- 6. Unit 6: Asperger's syndrome and Autism Spectrum Disorders

**Specific competencies:**

- SC07: Familiarize oneself with different methods of assessment, diagnosis, and psychological treatments in various applied fields of Health Psychology.
- SC10: Analyze the needs and demands of the recipients in different contexts.
- SC11: Be able to establish the goals of psychological intervention in different contexts, proposing and negotiating the goals with the recipients and those affected. COMP12: Be able to plan and conduct an interview.
- SC13: Be able to describe and measure variables (personality, intelligence, and other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological, and behavioral processes.
- SC14: Be able to identify differences, problems, and needs.
- SC15: Be able to diagnose following the criteria specific to the profession.
- SC16: Describe and measure interaction processes, group dynamics, and group and intergroup structure.
- SC20: Analyze the context in which individual behaviors, group processes, and organizational processes occur.
- SC25: Select appropriate psychological intervention techniques to achieve objectives.
- SC26: Master strategies and techniques for involving recipients in the intervention.
- SC27: Apply direct intervention strategies and methods to recipients: psychological counseling, therapy, negotiation, mediation...
- SC30: Plan the evaluation of programs and interventions.
- SC32: Measure and obtain relevant data for the evaluation of interventions.
- SC33: Analyze and interpret the results of the evaluation.
- SC34: Provide appropriate and precise feedback to recipients.
- SC35: Be able to prepare oral and written reports.
- SC36: Understand and adhere to the ethical obligations of Psychology.
- SC37: Ability to practice the profession using both English and Spanish languages, to specialized and non-specialized audiences

Year: <b>3rd</b>	Course code: <b>9937001842</b>	Course: <b>Therapeutic Skills (<i>Habilidades del terapeuta</i>)</b>	Program: <b>Bachelor's Degree in Psychology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
Year: <b>3rd</b>	Course code: <b>P394001842</b>	Course: <b>Therapeutic Skills</b>	Program: <b>Bachelor's Degree in Psychology-100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. The effective therapist</li> <li>• Unit 2. Therapeutic skills</li> <li>• Unit 3. Therapeutic relationship</li> <li>• Unit 4. Therapeutic processes</li> <li>• Unit 6. Professional ethics and laws in the clinical practice.</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• CP01: Understand the functions, characteristics, and limitations of different theoretical models in the field of Health Psychology.</li> <li>• CP02: Understand the basic laws of different psychological processes in the field of Health Psychology.</li> <li>• CP06: Understand the social and anthropological dimension of human beings, considering the historical and sociocultural factors that influence human psychological configuration.</li> <li>• CP08: Understand different research designs, hypothesis formulation and testing procedures, interpretation of results, and be able to apply them in the field of Health Psychology.</li> <li>• CP09: Understand the different fields of application of Psychology and have the necessary knowledge to impact and promote quality of life in individuals, groups, communities, and 3 organizations in various contexts: educational, clinical and health, work and organizations, and community. omunity.</li> <li>• CP10: Know how to analyze the needs and demands of recipients in different contexts.</li> <li>• CP11: Be able to establish goals for psychological action in different contexts, proposing and negotiating goals with recipients and stakeholders. CP12: Be able to plan and conduct an interview.</li> <li>• CP14: Be able to identify differences, problems, and needs.</li> <li>• CP18: Know how to describe and measure interaction processes, dynamics, and organizational and inter-organizational structures.</li> <li>• CP19: Know how to identify organizational and inter-organizational problems and needs.</li> <li>• CP21: Know how to select and manage instruments, products, and services and be able to identify interested individuals and groups.</li> <li>• CP22: Know how to design and adapt instruments, products, and services according to requirements and constraints. CP23: Know how to test and validate instruments, products, and services (prototypes or pilot tests).</li> <li>• CP25: Know how to choose appropriate psychological intervention techniques to achieve objectives. CP26: Master strategies and techniques for involving recipients in the intervention.</li> <li>• CP27: Know how to apply strategies and direct intervention methods to recipients: psychological counseling, therapy, negotiation, mediation, etc. CP28: Know how to apply strategies and direct intervention methods to contexts: creating healthy environments, etc.</li> <li>• CP29: Know how to apply indirect intervention strategies and methods through other individuals: counseling, training of trainers, and other agents.</li> <li>• CP30: Know how to plan the evaluation of programs and interventions.</li> <li>• CP31: Be able to select and construct indicators and measurement techniques to evaluate programs and interventions. CP32: Be able to measure and obtain relevant data for the evaluation of interventions.</li> <li>• CP33: Know how to analyze and interpret the results of the evaluation.</li> <li>• CP36: Understand and adhere to the ethical obligations of Psychology.</li> </ul>						



**Universidad  
Europea**

## BACHELOR'S DEGREES IN SPANISH

## School of Architecture, Engineering and Design (*Escuela de Arquitectura, Ingeniería y Diseño*)

### Bachelor's Degree in Animation (*Grado en Animación*) (Spanish)

1	9877002101	Ética y eficacia profesional	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9877002102	Historia de la Animación	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9877002103	Dibujo Artístico	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9877002104	Animación. Técnicas Clásicas	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9877002105	Teoría del Color y de la Luz	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9877002106	Anatomía	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9877002107	Animación 2D Digital	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9877002108	Diseño Vectorial e Ilustración Digital	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9877002109	Diseño de Personajes y Concept Art	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9877002110	Proyecto Animación I	Semestre 2 / Spring Term (Jan–Jun)		Español	6
2	9877002201	Influencia e Impacto Relacional	Semestre 1 / Fall Term (Sept–Jan)		Español	6

Year: <b>2nd</b>	Course code: <b>9877002202</b>	Course: <b>Script and Storyboard</b> ( <i>Guión y Storyboard</i> )	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Script - Narrative and narratology
- Unit 2. Script - The Conflict
- Unit 3. Script - Narrative Structures
- Unit 4. Script - The Road to the Screenplay
- Unit 5. Script - Character Building
- Unit 6. Script - Narrative Time and Space
- Unit 7. Storyboard – Storyboard Basics
- Unit 8. Storyboard – Development
- Unit 9. Storyboard – The Blueprints
- Unit 10. Storyboard – Timing and slugging

Year: <b>2nd</b>	Course code: <b>9877002203</b>	Course: <b>3D I Modeling. Shape</b> ( <i>Modelado 3D I. Forma</i> )	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Basic Shapes
- Unit 2. Splines
- Unit 3. Organic Modeling
- Unit 4. Industrial Modeling

Year: <b>2nd</b>	Course code: <b>9877002204</b>	Course: <b>Audiovisual composition</b> <i>(Composición Audiovisual)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Audiovisual Discourse</li> <li>Unit 2: Planning and Angulations</li> <li>Unit 3: Depth of Field</li> <li>Unit 4: Compositional Resources</li> <li>Unit 5: Light and Color</li> <li>Unit 6: Continuity</li> <li>Unit 7: Script Concepts</li> <li>Unit 8: Rhythm and Editing</li> <li>Unit 9: The Power of Sound</li> <li>Unit 10: Scenography</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9877002205</b>	Course: <b>Rigging</b>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Working Mode and Communication Protocols . 1.1. Departments of an Animation and Video Games production . 1.2. Rigging: First Steps. 1.3. Production with different Software: Maya, first steps</li> <li>Unit 2. Applying the Laws of Physics to the Virtual Universe . 2.1. Knowledge of movement and character . 2.2. Introduction to hierarchies and nomenclature. 2.3. Maya's Basic Tools for Building Rigs . 2.4. General ik/fk systems</li> <li>Unit 3. Warp Rig. 3.1. Skeleton construction. 3.2. Vertex Painting. 3.3. PSDs or body correctives</li> <li>Unit 4. Body Control Rig. 4.1. Construction of ik/fk systems. 4.2. Column construction. 4.3. Automatismos. 4.4. Connection to the warp rig</li> <li>Unit 5. Facial Rig . 5.1. Expression Sculpting. 5.2. Construction through joints. 5.3. Hybrid System &amp; Deformers</li> <li>Unit 6. Closing the rig. 6.1. Connection Between Face Rig and Body Rig. 6.2. Object Rig. 6.3. Limb Deformation Systems. 6.4. Build a demo with animation</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9877002206</b>	Course: <b>Lighting &amp; Texturing</b> <i>(Iluminación y Texturizado)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Creating UVs. 1.1 UV Basics. 1.2 3D Object Mapping Tools. 1.3 Space optimization in textures. 1.4 Resolving Textures Between Different Objects in a Scene</li> <li>Unit 2: Painting Textures. 2.1 Creation of basic materials. 2.2 Using brushes. 2.3 Creating "tileable" textures. 2.4 Using Layers for Detail</li> <li>Unit 3: Retopology and Baki. 3.1 R tools. 3.2 g optimization. 3.3 P tools. 3.4 Creation of textu</li> <li>Unit 4: Creating Textur. 4.1 T-tools. 4.2 3D lighting. 4.3 Assembling Textu</li> <li>Unit 5: Esc Texturing. 5.1 T optimization. 5.2 Final t finish. 5.3 Presentation of the final model</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9877002207</b>	Course: <b>3D Modeling II. Characters</b> <i>(Modelado 3D II. Personajes)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Basic Digital Sculpting Tools . 1.1 Creating Basic Shapes . 1.2 Sculpting brushes . 1.3 Workflows in digital sculpture. 1.4 Managing models in parts (subtools)</li> <li>Unit 2: Creating Base Meshes . 2.1 Advanced Shape Creation Tools . 2.2 Joining of parts . 2.3 Changing Workflow. 2.4 Managing Complex Models: Organizing Into Folders</li> <li>Unit 3: Topology for Animation . 3.1 Basic anatomy . 3.2 Topology in joints. 3.3 Face topology. 3.4 Retopology tools</li> <li>Unit 4: Final Project: Character Creation. 4.1 Creating plugins 4.2 Scene management. 4.3 Sharing 3D files between different programs. 4.4 Posing and character introduction</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9877002208</b>	Course: <b>Animation 3D. Layout</b> <i>(Animación 3D I. Layout)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Basic Principles for Animating. 1.1. The 12 Principles of Animation. 1.2. Software: Getting Started with Maya. 1.3. The use of 3D cameras. 1.4. Basic Principles of Audiovisual Composition and Storytelling
- Unit 2. Layout Department. 2.1. Operation of the Layout Department. 2.2. Animatic: how to read it and what it is for. Basic Principles. 2.3. Character Posing & Animation. 2.4. Basic Camera & Animation Rig
- Unit 3. Planning. 3.1. Plan a story from the script. 3.2. Basic Principles of Acting: Acting. 3.3. Physical & Virtual Cameras. 3.4. Production chain and continuity. Pose Libraries
- Unit 4. Introduction to the complete Animate process. 4.1. Animation Department. 4.2. Full method: Golden, blocking, refine and polish.

Year: <b>2nd</b>	Course code: <b>9877002209</b>	Course: <b>3D Modeling III. Scenarios</b> <i>(Modelado 3D III. Escenarios)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1: Basic Polygon Modeling Tools. 1.1 Editing 3d Objects: Vertices, Edges, and Faces . 1.2 Basic modeling tools . 1.3 Joining and separating 3d geometry . 1.4 Advanced Modeling Tools .1.5. Creating blocking a 3d model.
- Unit 2: Workflows in Digital Modeling and Sculpting. 2.1 Creating Blocking (3D Sketch) . 2.2 Differences between polygonal 3d modeling and digital sculpting . 2.2 Workflow in digital sculpture . 2.3 Main Types of Digital Sculpting Brushes . 2.4 Advanced Digital Sculpting Tools
- Unit 3: Subdivision Modeling . 3.1 Poles and loops in 3d geometry . 3.2 Density and support loops . 3.3 Transitions and joining between forms . 3.4 Creating smoothed models
- Unit 4: Final Project: Modeling a Complex Scenario . 4.1 Reference Analysis and Workflow Choice . 4.2 Presentation of the project . 4.3 Sharing 3D files between different programs. 4.4 Scene Management in Complex Models

Year: <b>2nd</b>	Course code: <b>9877002210</b>	Course: <b>Animation Project II (Proyecto Animación II)</b>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Planning. 1.1. Organization by departments. 1.2. Production Line . 1.3. Distribution of profiles and tasks
- Unit 2. Script and storyboard. 2.1. Literary script and outline. 2.2. Technical Script. 2.3. Storyboard
- Unit 3. Art. 3.1. Character Design . 3.2. Color script and color key. 3.3. Stage & Prop Design. 3.4. Animatic
- Unit 4. Animation. 4.1. Rough animation. 4.2. In-betweens. 4.3. Tie down. 4.4. Clean-up. 4.5. Edit
- Unit 5. Funds. 5.1. Perspectives. 5.2. Skit. 5.3. Clean-up
- Unit 6. Composition. 6.1. Values & Color. 6.2. Light. 6.3. Final Composition. 6.4. Editing & Editing. 6.5. Music & Sound

Year: <b>3rd</b>	Course code: <b>9877002301</b>	Course: <b>Creativity Techniques (Técnicas de Creatividad)</b>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Introduction to Creativity
- Unit 2. The Creative Processes
- Unit 3. Creativity Tools & Techniques
- Unit 4. Organization and Planning to Organize the Mind

Year: <b>3rd</b>	Course code: <b>9877002302</b>	Course: <b>3D Modeling III. Organic</b> <i>(Modelado 3D IV. Orgánico)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1: Base Meshes and Anatomy. 1.1 Creating Basic Objects for Base Meshes . 1.2 Creating Base Meshes from References . 1.3 Organic modeling of anatomy .1.4 Organizing Parts into Folders
- Unit 2: Topology and Advanced Tools . 2.1 Retopology tools. 2.2 Layers and asymmetry . 2.3 Surface cleaning . 2.4 Advanced Digital Sculpting Tools
- Unit 3: Creating Plugins. 3.1 Fabric creation. 3.2 Hair creation. 3.3 Hard surface add-ons
- Unit 4: Presenting Models. 4.1 Texturing with Polypaint. 4.2 Render passes. 4.3 Image montage
- Unit 5: Final Project: Complex Character Creation. 5.1 Creating add-ons. 5.2 Exchanging 3D files between different programs . 5.3 Posing and character presentation

Year: <b>3rd</b>	Course code: <b>9877002303</b>	Course: <b>Sound Design and Music Fundamentals</b> ( <i>Diseño de Sonido y Fundamentos Musicales</i> )	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. DAW. Definition and concepts. 1.1. What is a DAW?. 1.2. Audio formats. 1.3. Audio recording. 1.4. Creating MIDI tracks. 1.5. Video Tracks. 1.6. Editing</li> <li>Unit 2. Signal processing. 2.1. Effects processors. 2.2. Equalization. 2.3. Mix. 2.4. Mastering</li> <li>Unit 3. Musical Fundamentals. 3.1. Musical language. 3.2. Basic Harmony</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9877002304</b>	Course: <b>3D Animation II. Characters</b> ( <i>Animación 3D II. Personajes</i> )	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Basic Principles in Character Animation</li> <li>Unit 2. Cycles</li> <li>Unit 3. Motion Capture</li> <li>Unit 4. Character set up</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9877002305</b>	Course: <b>Assembly and Editing</b> ( <i>Montaje y Edición</i> )	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Cinema, Audiovisual Language and Grammar of Editing</li> <li>Unit 2: History of Assembly</li> <li>Unit 3. Assembling the image</li> <li>Unit 4. Assembling the sound</li> <li>Unit 5. Film genres and their editing</li> <li>Unit 6. Theories of Assembly</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9877002306</b>	Course: <b>3D Animation III. Rendering</b> ( <i>Animación 3D III. Renderizado</i> )	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Lighting and Composition. 1.1 Lighting in film and photography. 1.2 Types of drawing. Composition. 1.3 Lighting schemes. 1.4 Lighting tools in 3D programs. 1.5 Basic render parameters</li> <li>Unit 2: Creating Materials. 2.1 Types of materials. 2.2 Mapping coordinates and textures. 2.3 Materials management by nodes.. 2.4 Render testing</li> <li>Unit 3: Rendering Parameters. 3.1 3D cameras. Different types of drawing.. 3.2 Advanced render parameters. 3.3 Optimization of render times. 3.4 Output File Format and Types-</li> <li>Unit 4: Real-Time Rendering. 4.1 Differences Between Traditional Rendering and Real-Time Rendering. 4.2 Render engines. 4.3 Real-time rendering parameters</li> <li>Unit 5: Final Project: Animation Rendering. 5.1 Color management and material adjustment.. 5.2 Lighting and Camera Adjustment in Animated Scene. 5.3 Scene management. 5.4 Animation rendering and final presentation</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9877002307</b>	Course: <b>Visual Effects</b> ( <i>Efectos Visuales</i> )	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to VFX. 1.1. Meaning and evolution. 1.2. Practical Effects . 1.3. Software: Getting Started with After Effects</li> <li>Unit 2: "Tracking" of cameras. 2.1. Motion Tracking: Types. 2.2. Case Studies</li> <li>Unit 3. Color Correction. 3.1. Pure Color Correction. 3.2. Color grading and LUTs. 3.3. Case Studies</li> <li>Unit 4. Integration of 3D with real image. 4.1. Techniques &amp; Tools. 4.2. Software: Getting Started with Maya . 4.3. Render passes and layered compositing. 4.4. Case Study</li> <li>Unit 5. Particle Systems. 5.1. Techniques &amp; Tools . 5.2. Particles. 5.3. Case Study</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9877002308</b>	Course: <b>3D Animation IV Face (Animación 3D IV Facial)</b>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. We review 'Character Animation'. 1.1. Animation Method. 1.2. Work Environment. 1.3. Character Building. 1.4. Introduction to Facials</li> <li>Unit 2. Looks. 2.1. Eyes and gaze cones. 2.2. Movement. 2.3. Curve Cleaning</li> <li>Unit 3. Interpreting Workshop. 3.1. Acting. 3.2. Movement. 3.3. Script Interpretation</li> <li>Unit 4. Lipsync. 4.1. Voice Map. 4.2. Phonemes. 4.3. Pose Library. 4.4. Motion Cleaning</li> <li>Unit 5. Complete method. Animation &amp; Video Games. 5.1. Creating a "picker". 5.2. Complete method. 5.3. Detailing &amp; Polishing</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9877002309</b>	Course: <b>Production, Distribution &amp; Exhibition (Producción, Distribución y Exhibición)</b>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Pitch-Bible</li> <li>Unit 2. Budget and Financing</li> <li>Unit 3. Workflow</li> <li>Unit 4. Commercialization and Marketing</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9877002310</b>	Course: <b>Animation Project III (Proyecto Animación III)</b>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Pre-production. 1.1. Planning. 1.2. Literary Screenplay.1.3. Technical script and outline. 1.4. Storyboard &amp; Animatics. 1.5. Character design and concept art. 1.6. Layout</li> <li>Unit 2: Production. 2.1.Character and scenario modeling. 2.2.Texturing . 2.3. Body &amp; Facial Rigging. 2.4.Animation</li> <li>Unit 3: Post-Production . 3.1. Lighting.3.2. Render. 3.3. Composition &amp; Effects. 3.4. Music &amp; Sound</li> </ul>						

Year: <b>4th</b>	Course code: <b>9877002401</b>	Course: <b>Entrepreneurial Leadership (Liderazgo Emprendedor)</b>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Leadership. 1.1. Organization and management roles. 1.2. Leadership styles. 1.3. Organizational debate</li> <li>Unit 2. Responsibilities. 2.1. Decision making. 2.2. Hierarchical relationships. 2.3. Conflict management</li> <li>Unit 3. Work environment. 3.1. Negotiation. 3.2. Performance management and performance evaluation</li> <li>Unit 4. Active Job Search. 4.1. Interviews and selection (interviewer's approach). 4.2. Interviews and selection (interviewee approach)</li> <li>Unit 5. Companies and Start-ups. 5.1. Business creation. 5.2. Economic sustainability. 5.3. Prevention of occupational hazards . 5.4. Corporate Social Responsibility</li> </ul>						

Year: <b>4th</b>	Course code: <b>9877002802</b>	Course: <b>Design of Backgrounds, Environments and Architectures (Diseño de Fondos, Entornos y Arquitecturas)</b>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to scenario design.1.2 Brief review of the historical framework. 1.2.1 The realistic landscape, from the Romantic movement to the realist style. 1.2.2 The Hudson River School. 1.2.3 Pleariist movements</li> <li>Unit 2. Elements of the environment and architectures. 2.1 Linear perspective and vanishing points. 2.2 Reviewing compositional studies and techniques. 2.3 Thumbnail creation, small-scale idea generation. 2.4 High rendering in monochrome compositions</li> <li>Unit 3. Reviewing color theory concepts. 3.1 Representation with color schemes. 3.2 Color Masks and Controlled Gamut Mixes. 3.3 Atmospheric outlook</li> </ul>						



- Unit 4. Light in digital painting. 4.1 Reviewing lighting concepts. 4.2 Representation of colored light. 4.2.1 Types of Colored Light Interactions. 4.3 Pictorial techniques for recreating realistic surfaces in props and other 3D models.
- Unit 5. Application of photographic techniques in the digital landscape. 5.1 Previous studies. 5.2 Digital tools and key materials. 5.3 Creating a Fantasy Scenario

Year: <b>4th</b>	Course code: <b>9877002804</b>	Course : <b>Photography and Digital image</b> <i>(Fotografía e Imagen Digital)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Units/contents**

- Unit 1. Introducing Photoshop and Lightroom
- Unit 2. Photography. Basic elements
- Unit 3. Photography. Exposure, light and time
- Unit 4. Photography. Camera components
- Unit 5. Digital Retouching
- Unit 6. Photography Digital treatment
- Unit 7. Portrait on set and digital treatment of the portrait
- Unit 8. Printing, dossier and publication

Year: <b>4th</b>	Course code: <b>9877002805</b>	Course: <b>Transmedia narratives</b> <i>(Narrativas transmediáticas)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Principles of transmedia.
- Unit 2. Nodes and transmedia "mapping".
- Unit 3. User Participation.
- Unit 4. Interactive narrative structures.
- Unit 5. Emergent narrative.
- Unit 6. Serialized narrative.
- Unit 7. Narrative mechanisms according to the genre of the story.

Year: <b>4th</b>	Course code: <b>9877002807</b>	Course: <b>Virtual and Augmented Reality</b> <i>(Realidad Virtual y Realidad Aumentada)</i>	Program: <b>Bachelor's Degree in Animation</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Virtual and Augmented Reality
- Unit 2. Principles of Virtual Reality and Software
- Unit 3. Principles of Augmented Reality and Software
- Unit 4. Application to the field of video games and animation

## Bachelor's Degree in Design (*Grado en Diseño*) (Spanish)

<del>1</del>	<del>9990002101</del>	<del>Dibujo+</del>	<del>Semestre 1 / Fall Term</del> <del>(Sept–Jan)</del>	<del>Español</del>	<del>6</del>
<del>1</del>	<del>9990002102</del>	<del>Fotografía e Imagen Digital</del>	<del>Semestre 1 / Fall Term</del> <del>(Sept–Jan)</del>	<del>Español</del>	<del>6</del>
<del>1</del>	<del>9990002103</del>	<del>Historia Del Arte, Diseño Y</del> <del>Arquitectura Contemporáneos</del> <del>↓</del>	<del>Semestre 1 / Fall Term</del> <del>(Sept–Jan)</del>	<del>Español</del>	<del>6</del>

Year: <b>1st</b>	Course code: <b>9990002104</b>	Course: <b>Ethics and professional efficiency</b> <i>(Ética y Eficacia Profesional)</i>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Ethical approaches in the different spheres of professional activity. 1.1. Introduction to the concept of ethics. 1.2. Ethics and Human Rights. 1.3. Ethics & Business. 1.4. Ethics and Digital Professions.
- Unit 2. Autonomous learning and self-regulation in personal and practical life
- Professional. 2.1. Decision-making on a personal level. General concepts. 2.2. Autonomous Learning. 2.3. Personal Life VS. Professional Life. 2.4. What are Social Skills?
- Unit 3. Keys to organizing and managing teamwork. 3.1. Assertiveness. 3.2. Active Listening and Empathy. 3.3. Decision making at the team level. 3.4. Teamwork and Roles within it.
- Unit 4. Keys to organizing and managing individual work. 4.1. Personal Resource Management. 4.2. Change Management. 4.3. Feedback.

1	9990002105	Dibujo II- Dibujo Digital	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9990002106	Matemáticas Y Física Aplicadas al Diseño	Semestre 1 / Fall Term (Sept–Jan)	Español	6
1	9990002107	Taller I- Experimental	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9990002108	Sistemas de Representación Geométrica	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9990002109	Dibujo y Análisis de Espacios y Objetos	Semestre 2 / Spring Term (Jan–Jun)	Español	6

Year: <b>2nd</b>	Course code: <b>9990002201</b>	Course: <b>Two dimensional Design Workshop (Taller de Diseño Bidimensional)</b>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 01. Collage. Identity.
- Unit 2. Design bricks. Point, line and Plane
- Unit 3. Patterns – Rhythm, Balance and Progression
- Unit 4. Color in forms
- Unit 5. Referential designers
- Unit 6. Two-dimensional design in motion.
- Unit 7. Packaging and Branding
- Unit 8. Design and Communication
- Unit 9. Data visualization

**Specific competencies:**

- SC 1: Aptitude to master the theory of color and its applications, as well as the analysis and theory of form and the laws of visual perception.
- SC2: Ability to apply the concepts of metric, projective and Spatial representation systems.
- SC 3: Ability to use graphical representation techniques as an analytical tool, Ideation, communication and expression in design.
- SC4. Ability to apply computer tools to the representation of objects and spaces, both in two and three dimensions.
- SC 7: Knowledge of the theories of form and composition to create designs according to the user needs and requirements, and that are consistent with the relationship between form, function and the context in which they can be used.

Year: <b>2nd</b>	Course code: <b>9990002202</b>	Course: <b>Three dimensional Design Workshop (Taller de Diseño Tridimensional)</b>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 01: Three-dimensional exploration in the definition of an object.
- Unit 02: The graphic-technical communication of a project
- Unit 03: Form function and construction.
- Unit 04: Essential Modeling.
- Unit 05: Modeling for 3D Manufacturing
- Unit 06: Introduction to Organic Modeling.

- Unit 07: Introduction to parametric modeling.
- Unit 08: Texturing, shaders and lights. Render.
- Unit 09: Cartoon
- Unit 10: From 2D to 3D: Introduction to the concept of three-dimensional structure.
- Unit 11: From digital to analogue: the module as a generator of three-dimensional structures.
- Unit 12: Project Initiation: Design the Light.
- Unit 13: Project Development: Packaging Ideas / Integrative Project.

**Specific competencies:**

- SC 1: Aptitude to master the theory of color and its applications, as well as the analysis and theory of form and the laws of visual perception.
- SC2: Ability to apply the concepts of metric, projective and Spatial representation systems.
- SC4: Ability to apply computer tools to the representation of objects and spaces, both in two and three dimensions.
- SC 7: Knowledge of the theories of form and composition to create designs according to the user needs and requirements, and that are consistent with the relationship between form, function and the context in which they can be used.

Year: <b>2nd</b>	Course code: <b>9990002203</b>	Course: <b>Theory of audiovisual and Interactive Media</b> ( <i>Teoría de los Medios Audiovisuales e Interactivos</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Design and sound
- Unit 2. Design and Audiovisual
- Unit 3. Design of Interactive systems
- Unit 4. Design and nets
- Unit 5. Design and Data

**Specific competencies:**

- SC8. Knowledge of the history of art and design, its technical evolution and criteria by which some works are considered reference models.
- SC9. Ability to analyze different artistic and design works to place them in context historical, cultural and stylistic.
- SC10. Ability to critically evaluate works of art and design in a comprehensive way, developing the vocabulary of the discipline and expressing conclusions objectively, rigorous and precise.

Year: <b>2nd</b>	Course code: <b>9990002204</b>	Course: <b>Influence and relational impact</b> ( <i>Influencia e Impacto Relacional</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction and resources
- Unit 2. Written communication and academic communication
- Unit 3. Storytelling techniques
- Unit 4. Visual communication
- Unit 5. Oral communication
- Unit 6. Emotional intelligence and adaptability

**Specific competencies:**

- SC13. Ability to develop communication skills for the correct transmission of ideas in a working group.

Year: <b>2nd</b>	Course code: <b>9990002205</b>	Course: <b>Image</b> ( <i>Imagen</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Introduction to Image I
- Unit 2: Introduction to Image II
- Unit 3: Iconicity and complexity.
- Unit 4: Meaning and ambiguity.
- Unit 5: Image and persuasion. Elaboration of an advertising image
- Unit 6: Barthes' rhetoric. Making the photographs/illustrations

- Unit 7: The image as a sign I. Elaboration of pictographic icons
- Unit 8: The image as sign II. A practice is developed to deepen Calligrams and visual poems

**Specific competencies:**

- SC 1: Aptitude to master the theory of color and its applications, as well as the analysis and theory of form and the laws of visual perception.
- SC 3: Ability to use graphical representation techniques as an analytical tool, Ideation, communication and expression in design.
- SC 6: Ability to understand the various applications of symbolization processes, semiotics, practical functions, use and ergonomics in design.
- SC 7: Knowledge of the theories of form and composition to create designs according to the user needs and requirements, and that are consistent with the relationship between form, function and the context in which they can be used.

Year: <b>2nd</b>	Course code: <b>9990002206</b>	Course: <b>People and environment: user experience design</b> <i>(Personas y Entorno: Diseño de Experiencia de Usuario)</i>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Brief and report. Reading
- Unit 2. Blueprint/pre-project
- Unit 3. Basic Project. Design development
- Unit 4. Execution Project. Detailed design

**Specific competencies:**

- SC 7: Knowledge of the theories of form and composition to create designs according to the user needs and requirements, and that are consistent with the relationship between form, function and the context in which they can be used.

Year: <b>2nd</b>	Course code: <b>9990002207</b>	Course: <b>Workshop II: Sustainable Design</b> <i>(Taller II: Diseño Sostenible)</i>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1- Introduction
- Unit 2- Context
- Unit 3- Research
- Unit 4- Fine Project

**Specific competencies:**

- SC17. Ability to create and develop design projects that incorporate the principles of Universal accessibility and removal of architectural barriers.
- SC18. Knowledge of the principles of sustainability, conservation of energy resources, materials and environmental to apply them in the creation and development of design projects Product & Interiors

Year: <b>2nd</b>	Course code: <b>9990002208</b>	Course: <b>Workshop III: Digital and parametric Fabrication</b> <i>(Taller III: Fabricación Digital y Paramétrico)</i>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Modeling
- Unit 2: Scanning
- Unit 3: Laser cutting.
- Unit 4: 3D printing.
- Unit 5: CNC
- Unit 6: Project

**Specific competencies:**

- SC5. Ability to apply knowledge about principles of physics, dimensioning, numerical calculation, Analytic geometry and basic algebraic methods in design projects

- SC 7: Knowledge of the theories of form and composition to create designs according to the user needs and requirements, and that are consistent with the relationship between form, function and the context in which they can be used.
- SC 11. Ability to apply technologies and tools for graphic, product and interiors in the different phases of creation and production of designs.
- SC18. Knowledge of the principles of sustainability, conservation of energy resources, materials and environmental to apply them in the creation and development of design projects Product & Interiors

Year: <b>3rd</b>	Course code: <b>9990002301</b>	Course: <b>Creativity Techniques</b> ( <i>Técnicas de Creatividad</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Lectures of Guests</li> <li>• Unit 2. Visits of exhibitions and spaces</li> <li>• Unit 3. Ideas + creative exercises</li> </ul>						
<b>Specific competences:</b>						
<ul style="list-style-type: none"> <li>• SC12: Ability to make value judgments by analysing the cases within the professional activity.</li> <li>• SC13: Capacity to develop communication skills for the correct transmission of ideas in a working group.</li> <li>• SC15: Ability to make reasoned decisions, adapt behaviour to different situations and assume a leadership style appropriate to each situation.</li> <li>• SC16: Decision making: Ability to make a choice between alternatives or forms existing to effectively solve different situations or problems</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9990002302</b>	Course: <b>Workshop IV: Event Design</b> ( <i>Taller IV: Diseño de Eventos</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Personal branding</li> <li>• Unit 2: Event design project 1</li> <li>• Unit 3: Event Analysis Project 2</li> <li>• Unit 4: Event Design Project 3</li> </ul>						
<b>Specific competences:</b>						
<ul style="list-style-type: none"> <li>• SC 6: Ability to understand the various applications of symbolization processes, semiotics, practical functions, use and ergonomics in design.</li> <li>• SC 11. Ability to apply technologies and tools for graphic, product and interiors in the different phases of creation and production of designs.</li> <li>• SC14: Capacity to create and develop design projects applied to digital environments, multimedia and web.</li> <li>• SC17: Capacity to create and develop design projects that incorporate the principles of Universal accessibility and removal of architectural barriers.</li> <li>• SC18. Knowledge of the principles of sustainability, conservation of energy resources, materials and environmental to apply them in the creation and development of design projects Product &amp; Interiors</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9990002303</b>	Course: <b>Workshop V: Signage and Exhibition spaces</b> ( <i>Taller V: Señalética y Espacios Expositivos</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Workshop- Analysis of Exhibition Space</li> <li>• Unit 2. Workshop- Representative Signage Analysis</li> <li>• Unit 3. Self exhibition Design</li> <li>• Unit 4. Icon (and pictogram) Design</li> <li>• Unit 5. Exhibition Space Design and Signage Design</li> </ul>						
<b>Specific competences:</b>						
<ul style="list-style-type: none"> <li>• SC 6: Ability to understand the various applications of symbolization processes, semiotics, practical functions, use and ergonomics in design.</li> </ul>						

- SC 7: Knowledge of the theories of form and composition to create designs according to the user needs and requirements, and that are consistent with the relationship between form, function and the context in which they can be used.
- SC 11. Ability to apply technologies and tools for graphic, product and interiors in the different phases of creation and production of designs.
- SC17: Capacity to create and develop design projects that incorporate the principles of Universal accessibility and removal of architectural barriers.
- SC18. Knowledge of the principles of sustainability, conservation of energy resources, materials and environmental to apply them in the creation and development of design projects Product & Interiors

Year: <b>3rd</b>	Course code: <b>9990002304</b>	Course: <b>Workshop VI: Physical Interaction Workshop (Taller VI: Taller de Interacción Física)</b>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 0. Introduction to physical computing. Elements of electricity and circuit bending.
- Unit 1. Arduino programming. Basic circuits, variables and functions. Digital and analog inputs. Cycles and sequences. Logic programming
- Unit 2. Sensors and actuators. Servomotors, buzzers, ultrasound, piezoelectric, displays and capacitive sensors.
- Unit 3. Serial connection. Introduction to Processing. Interaction between Arduino and Processing.
- Unit 4. From prototype to physical interaction project.

**Specific competences:**

- SC5. Ability to apply knowledge about principles of physics, dimensioning, numerical calculation, Analytic geometry and basic algebraic methods in design projects
- SC 6: Ability to understand the various applications of symbolization processes, semiotics, practical functions, use and ergonomics in design.
- SC 11. Ability to apply technologies and tools for graphic, product and interiors in the different phases of creation and production of designs.
- SC14: Capacity to create and develop design projects applied to digital environments, multimedia and web.

Year: <b>3rd</b>	Course code: <b>9990002305</b>	Course: <b>Technology for Multimedia production (Tecnología para la Producción Multimedia)</b>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Sound. 1.1. Analog sound. 1.2. Digital sound. 1.3. Recording. 1.4. Edition. Sound design. 1.5. Audiobranding
- Unit 2. Video. 2.1. Introduction. 2.2. Recording. 2.3. Edition. 2.4. Postproduction
- Unit 3. Augmented reality. 3.1. Introduction to technology. 3.2. Generation of a design proposal in a real environment
- Unit 4. Internet. 4.1. Introduction. 4.2. Prototyping. 4.3. Publication

**Specific competences:**

- SC14: Capacity to create and develop design projects applied to digital environments, multimedia and web.

Year: <b>4th</b>	Course code: <b>9990002401</b>	Course: <b>Entrepreneur Leadership (Liderazgo Emprendedor)</b>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Problem-solving methodologies and tools
- Unit 2. Leadership
- Unit 3. Skills development
- Unit 4. Creativity and Innovation
- Unit 5. Business Models
- Unit 6. Entrepreneurship and project management

**Specific competences:**

- SC15: Ability to make reasoned decisions, adapt behaviour to different situations and assume a leadership style appropriate to each situation.
- SC19. Knowledge of the professional organization and business models of companies related to the design sector.

Year: <b>4th</b>	Course code: <b>9990002402</b>	Course: <b>Communication and Marketing</b> ( <i>Comunicación y Marketing</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Understanding the Business Model.</li> <li>Unit 2. Understanding the Service Model.</li> <li>Unit 3. Understanding the Client / User.</li> <li>Unit 4. Define objectives</li> <li>Unit 5. Choose audiences.</li> <li>Unit 6. Strategies and Tactics.</li> <li>Unit 7. Messages and Channels.</li> <li>Unit 8. Planning.</li> <li>Unit 9. Budget.</li> <li>Unit 10. Measurement and results.</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC16: Decision making: Ability to make a choice between alternatives or forms existing to effectively solve different situations or problems</li> </ul>						

Year: <b>4th</b>	Course code: <b>9990002403</b>	Course: <b>Design Management</b> ( <i>Gestión del Diseño</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Perspectives from where we manage projects. Basadur test.</li> <li>Unit 2. The VUCA context. Management in uncertainty.</li> <li>Unit 3. The role of design as a management tool. Design process and methodologies.</li> <li>Unit 4. Service logic.</li> <li>Unit 5. Research and design.</li> <li>Unit 6. Research people, create archetypes.</li> <li>Unit 7. Business modeling and value proposition.</li> <li>Unit 8. Customer Journey Map.</li> <li>Unit 9. Ideation and Creative Problem Solving.</li> <li>Unit 10. Service BluePrint.</li> <li>Unit 11. Prototyping and experimentation.</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC16: Decision making: Ability to make a choice between alternatives or forms existing to effectively solve different situations or problems</li> </ul>						

Year: <b>4th</b>	Course code: <b>9990002404</b>	Course: <b>Workshop VII: Project creation</b> ( <i>Taller VII: Creación de Proyectos</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Contextualization in the three specialties of the Degree: Graphic, Interior and Product Design</li> <li>Unit 2: Transversal creativity techniques for the generation of ideas and definition of Project</li> <li>Unit 3: Execution Crossdisciplinary Project from the three specialties of the Degree: Graphic, Interior and Product Design</li> <li>Unit 4. Market insertion planning, marketing and communication of the project</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC14: Capacity to create and develop design projects applied to digital environments, multimedia and web.</li> </ul>						

<b>4</b>	<b>9990002801</b>	<b>Ilustración</b>	<b>Semestre 2 / Spring Term</b> (Jan-Jun)		<b>Español</b>	<b>6</b>
<b>4</b>	<b>9990002802</b>	<b>Materiales de Construcción</b>	<b>Semestre 2 / Spring Term</b> (Jan-Jun)		<b>Español</b>	<b>6</b>

Year: <b>4th</b>	Course code: <b>9990002803</b>	Course: <b>Materials, Models and Prototypes</b> ( <i>Materiales, Maquetas Y Prototipos</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Models in a virtual world</li> <li>Unit 2. From cardboard to Wood</li> <li>Unit 3. From paper to sheet metal</li> <li>Unit 4. Volume models</li> <li>Unit 5. Styrene models.</li> <li>Unit 6. Activities presentation</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC27: Knowledge of the characteristics of materials and their application in the development of Models and prototypes for the design process.</li> <li>SC29: Capacity to design and manufacture simple furniture prototypes.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9990002804</b>	Course: <b>Typography</b> ( <i>Tipografía</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Theory. 1.1. Introduction. 1.2. Evolution of the fonts</li> <li>Unit 2. Practices. 2.1. Structure and parts of the letter. 2.2. Applications on Branding. 2.3. Layout. 2.4. What not to do. 2.5. Presentation of Typography. 2.6. Typographys reputation. 2.7. Typography and Space. 2.8. The chemistry and environmental impact of typography</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC23: Knowledge of typography technique and its applications in graphic design.</li> <li>SC24: Knowledge of the concept of branding and the idea of corporate image.</li> <li>SC25: Knowledge of graphic design technology applied in online and offline media.</li> <li>SC26: Ability to apply graphic design technology in online and offline design projects</li> </ul>						

<b>4</b>	<b>9990002805</b>	<b>Teoría e Historia del Diseño Gráfico</b>	<b>Semestre 2 / Spring Term</b> (Jan-Jun)		<b>Español</b>	<b>6</b>
<b>4</b>	<b>9990002806</b>	<b>Teoría e Historia del Diseño de Interiores</b>	<b>Semestre 2 / Spring Term</b> (Jan-Jun)		<b>Español</b>	<b>6</b>

Year: <b>4th</b>	Course code: <b>9990002807</b>	Course: <b>Furniture Spatial Planning Workshop</b> ( <i>Taller de Planificación Espacial del Mobiliario</i> )	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: Introduction</li> <li>Unit 2: Space</li> <li>Unit 3: Furniture</li> <li>Unit 4: Case-studies</li> <li>Unit 5: Projects</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC36: Ability to integrate furniture into spatial design projects by using scale models.</li> <li>SC40: Capacity to develop interior design projects.</li> </ul>						

<b>4</b>	<b>9990002808</b>	<b>Teoría e Historia del Diseño Industrial</b>	<b>Semestre 2 / Spring Term</b> (Jan-Jun)		<b>Español</b>	<b>6</b>
<b>4</b>	<b>9990002809</b>	<b>Taller de Diseño y Fabricación de Mobiliario</b>	<b>Semestre 2 / Spring Term</b> (Jan-Jun)		<b>Español</b>	<b>6</b>



Year: <b>4th</b>	Course code: <b>9990002810</b>	Course: <b>Graphic Design Technology: Offline</b> <i>(Tecnología de Diseño Gráfico: Offline)</i>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Offline vs online universes. Analysis of book/catalogue
- Unit 2. Offline universe: printing / packaging / signage
- Unit 3. Resolution and type of images
- Unit 4. Formats
- Unit 5. Lay out. InDesign
- Unit 6. 6.1. Pre-printing. 6.2. Preparation of graphic material. 6.3. Indent, register and trap. 6.4. Use of color and types of black
- Unit 7. 7.1 Printing techniques. 7.2. Techniques and materials for packaging. 7.3 Signaling techniques and materials
- Unit 8. Color. Tone, saturation, lightness and interaction
- Unit 9. Use of paper
- Unit 10. Written exam

**Specific competences:**

- SC23: Knowledge of typography technique and its applications in graphic design.
- SC25: Knowledge of graphic design technology applied in online and offline media.
- SC26: Ability to apply graphic design technology in online and offline design projects

Year: <b>4th</b>	Course code: <b>9990002811</b>	Course: <b>Internet Design Technology</b> <i>(Tecnología de Diseño para Internet)</i>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Internet technologies
- Unit 2. HTML and publishing cycle to a web server
- Unit 3. CSS style sheets and box model
- Unit 4. CSS, HTML5 and positioning classes
- Unit 5. Modularization: menus and webfonts
- Unit 6. Creating websites with bootstrap
- Unit 7. Columns, grids and cards
- Unit 8. Components in bootstrap
- Unit 9. CSS Advanced: Transitions and animations
- Unit 10. Introduction to javascript and jQuery
- Unit 11. Icons and SVG
- Unit 12. Web development and conversion for app context
- Unit 13. Elementary interaction with backend

**Specific competences:**

- SC25: Knowledge of graphic design technology applied in online and offline media.
- SC26: Ability to apply graphic design technology in online and offline design projects

<b>4</b>	<b>9990002812</b>	<b>Proyectos de Diseño Gráfico: Offline</b>	<b>Semestre 2 / Spring Term (Jan-Jun)</b>		<b>Español</b>	<b>6</b>
<b>4</b>	<b>9990002813</b>	<b>Proyectos de Diseño para Internet</b>	<b>Semestre 2 / Spring Term (Jan-Jun)</b>		<b>Español</b>	<b>6</b>

Year: <b>4th</b>	Course code: <b>9990002814</b>	Course: <b>Branding (Branding)</b>	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Branding

- Unit 2. The visual system and its strategy
- Unit 3. The Graphic Brand: signs and symbols of identity
- Unit 4. Terminology and repertoire of signs of identity
- Unit 5. Rebranding: updating of a brand.
- Unit 6. Verbal Identity
- Unit 7. Brand Identity Communication
- Unit 8. Brand Architecture
- Unit 9. Brand Identity Manual
- Unit 10. Phases of a Brand Identity Program

**Specific competences:**

- SC22: Knowledge of the history of graphic design, its technical evolution and the criteria by which some designs are considered reference models.
- SC23: Knowledge of typography technique and its applications in graphic design.
- SC24: Knowledge of the concept of branding and the idea of corporate image.
- SC26: Ability to apply graphic design technology in online and offline design projects

4	9990002815	Construcción	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9990002816	Acondicionamiento Ambiental	Semestre 2 / Spring Term (Jan–Jun)		Español	6

Year: 4th	Course code: 9990002817	Course: <b>Interior Design Projects I</b> (Proyectos de Diseño de Interiores I)	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 – Introduction. References
- Unit 2 – Residential Space I
- Unit 3 – Residential Space I
- Unit 4 – Hybrid Space
- Unit 5 – Projects

**Specific competences:**

- SC35: Knowledge of the history of interior design, its technical evolution and the criteria for which some spaces are considered reference models.
- SC40: Capacity to develop interior design projects.

4	9990002818	Mediciones y Presupuestos. Dirección y Producción de Obra	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9990002819	Proyectos de Diseño de Interiores II	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9990002820	Packaging	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9990002821	Diseño de Objeto. Ergonomía	Semestre 1 / Fall Term (Sept–Jan)		Español	6

Year: 4th	Course code: 9990002822	Course: <b>Product Design Projects I</b> (Proyectos de Diseño de Producto I)	Program: <b>Bachelor's Degree in Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The maker movement
- Unit 2. Research. Brief and moodboards
- Unit 3. Design development
- Unit 4. Detailed Design

**Specific competences:**

- SC32: Knowledge of product design technology and industrial manufacturing processes.
- SC33: Capacity to develop product design projects

4	9990002823	Tecnología del Diseño de Producto	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9990002824	Proyectos de Diseño de Producto II	Semestre 2 / Spring Term (Jan–Jun)		Español	6

## Bachelor's Degree in Videogame Design (Grado en Diseño de Videojuegos) (Spanish)

Year: <b>1st</b>	Course code: <b>9822001101</b>	<b>Ethics and Professional efficiency (Ética y Eficacia profesional)</b>	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Professional Advice. Preparation of CV's and professional interviews. Decisions and leadership.</li> <li>• Unit 2. Teamwork. Construction of group projects.</li> <li>• Unit 3. Ethics in decision-making. Decisions in difficult moments. Ethical dilemmas.</li> <li>• Unit 4. Competency dynamics. Communication and expression techniques. Introspection and identification of Blocks. The development of business dynamics, the identification of talent and deciding strategies.</li> <li>• Unit 5. The Final Project. The Sustainable Development Goals. Documentation, Budget, and Plan production</li> </ul>						

1	9822001102	Evolución y Perspectiva Histórica de Videojuegos	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9822001103	Dibujo Artístico	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9822001104	Bases de la Informática y Fundamentos de la Programación	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9822001105	Tecnología de Videojuegos y Diseño de Escenarios Virtuales	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9822001106	Estructura de Videojuegos: Jugabilidad y Niveles	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9822001107	Teoría del Color y de la Luz	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9822001108	Diseño Vectorial e Ilustración Digital	Semestre 2 / Spring Term (Jan–Jun)		Español	6

Year: <b>1st</b>	Course code: <b>9822001109</b>	Course: <b>Character Design and Concept Art (Diseño de Personajes y Concept Art)</b>	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Character design concepts</li> <li>• Unit 2. Basic anatomy</li> <li>• Unit 3. Character design techniques</li> <li>• Unit 4. Personality, acting and expressiveness</li> <li>• Unit 5. Concept art of characters, scenarios and props</li> <li>• Unit 6. Annex: Pixel art</li> </ul>						

Year: <b>1st</b>	Course code: <b>9822001110</b>	Course: <b>Videogame project I</b> ( <i>Proyecto de Videojuegos I</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Transversal workshop to the knowledge acquired and to the diverse learning techniques assimilated throughout the first year, which can contribute to compose a simple two-dimensional video game project based on the subjects that coexist in the same semester of this project subject.
- Unit 2. Initial project practice intuited from the knowledge of creative techniques and theoretical and evolutionary contents at a historical, cultural, political, technical and formal level. Analysis and comparison of project experiences in various areas of the video game industry.

Year: <b>2nd</b>	Course code: <b>9822001201</b>	<b>Relational Influence and Impact</b> ( <i>Influencia e Impacto Relacional</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Communication in the professional field . 1.1. Verbal Communication . 1.2. Non-Verbal Communication . 1.3. How to communicate in the professional environment? 1.4. Written communication
- Unit 2. Emotional intelligence in interpersonal relationships 2.1. Emotional Intelligence . 2.2. Time management. 2.3. Stress Management . 2.4. Introduction to NLP as a method of persuasion
- Unit 3. The success of change: the ability to adapt . 3.1. The reality of the environment . 3.2. Change Management . 3.3. Adaptability and flexibility . 3.4. Resilience

Year: <b>2nd</b>	Course code: <b>9822001202</b>	Course: <b>Video Game Narrative and Script</b> ( <i>Narrativa y Guión de Videojuegos</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Narrative and narratology
- Unit 2. The conflict
- Unit 3. Narrative Structures
- Unit 4. Character Building
- Unit 5. Narrative Time and Space
- Unit 6. The video game script

Year: <b>2nd</b>	Course code: <b>9822001203</b>	Course: <b>3D modeling I. Form</b> ( <i>Modelado 3D I. Forma</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to the 3D Max interface
- Unit 2. Primitive figures
- Unit 3. Creating editable shapes
- Unit 4. Modeling with "modifiers"
- Unit 5. Creation of UV maps
- Unit 6. Application of materials and texturing maps
- Unit 7. Composition and lighting

<b>2</b>	Course code: <b>9822001204</b>	<b>Programación Orientada a Objetos</b>	<b>Semestre 1 / Fall Term (Sept - Jan)</b>		<b>Español</b>	<b>6</b>
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2	Course code: 9822001205	Introducción a la Ingeniería del Software	Semestre 1 / Fall Term (Sept – Jan)		Español	6
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Year: 2nd	Course code: 9822001206	Course: <b>Videogame Production</b> (Producción de Videojuegos)	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to video game production. 1.1. Introduction to video game production. 1.2. Software production phases. 1.3. Phases of production in video games. 1.4. The video game studio. 1.5. Roles of a game development studio. 1.6. Business hierarchy and organizational charts</li> <li>Unit 2. Application of methodologies. 2.1. Production methodologies. 2.2. Definition and planning of a project</li> <li>Unit 3. Project Planning. 3.1. Management of deliverables. 3.2. Time estimation and calendar. 3.3. Meetings and communication management</li> </ul>						

Year: 2nd	Course code: 9822001207	Course: <b>Animation 2D Digital</b> (Animación 2D Digital)	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1 – Digital rotoscoping</li> <li>Unit 2 – Interpolations</li> <li>Unit 3 – Bones, controllers and weighing</li> <li>Unit 4 – Animation by programming</li> <li>Unit 5 – Rig of a character cur-out by nodes</li> </ul>						

Year: 2nd	Course code: 9822001208	Course: <b>Development environments in three dimensions</b> (Entornos de Desarrollo en 3D)	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Video games. Theoretical approach</li> <li>Unit 2. Video Game Engines</li> <li>Unit 3. Video Game Engine Architecture</li> <li>Unit 4. 3D Graphics Fundamentals</li> <li>Unit 5. Lighting</li> <li>Unit 6. Physics Engine</li> </ul>						

2	Course code: 9822001209	Tecnología de Servidores y Bases de Datos	Semestre 2 / Spring Term (Jan – Jun)		Español	6
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Year: 2nd	Course code: 9822001210	Course: <b>Videogame project II</b> (Proyecto de Videojuegos II)	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Transversal workshop to the knowledge acquired and to the diverse learning techniques assimilated throughout the first year, which can contribute to compose a simple two-dimensional video game project based on the subjects that coexist in the same semester of this project subject.</li> <li>Unit 2. Making of a digital piece adapted to the level of complexity that allows the knowledge achieved attending to the technical aspects of the tools masters by the student.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9822001301</b>	Course: <b>Creativity Techniques</b> ( <i>Técnicas de Creatividad</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to creativity</li> <li>Unit 2. The creative processes</li> <li>Unit 3. Creativity Tools and Techniques</li> <li>Unit 4. Organization and Planning to Order the Mind</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9822001302</b>	Course: <b>Videogame Marketing</b> ( <i>Marketing de Videojuegos</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Video Game Marketing. 1.1. Marketing concepts. 1.2. General theory about marketing</li> <li>Unit 2. The video game as a product. 2.1. The product in marketing</li> <li>Unit 3. The customer. 3.1. The customer in marketing. 3.2. The player. 3.3. The video game client. 3.4. Target and segmentation. 3.5. Copywriting</li> <li>Unit 4. The price. 4.1. Price in marketing. 4.2. The price in the video game</li> <li>Unit 5. Promotion: Media and formats. 5.1. Formats in video game marketing. 5.2. Marketing techniques in video games. 5.3. Social networks. 5.4. The press</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9822001303</b>	Course: <b>Sound Design and Music Fundamentals</b> ( <i>Diseño de Sonido y Fundamentos Musicales</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. DAW. Definition and concepts. 1.1. What is a DAW?. 1.2. Audio formats.. 1.3. Audio recording.. 1.4. Creation of MIDI tracks. 1.5. Video Tracks. 1.6. Editing</li> <li>Unit 2. Signal processing.. 2.1. Effect processors.. 2.2. Equalization. 2.3. Mix. 2.4. Mastering</li> <li>Unit 3. Musical fundamentals. 3.1. Musical language. 3.2. Basic harmony</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9822001304</b>	Course: <b>Networks and Multiplayer Environments</b> ( <i>Redes y Entornos Multijugador</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to networked multiplayer systems. 1.1. Introduction. 1.2. Important design considerations. 1.3. Network Architecture and Topologies of networked multiplayer systems. 1.4. Online services and networked multiplayer systems. 1.5. Life Cycle of a Multiplayer Game</li> <li>Unit 2. Network Fundamentals and Protocols. 2.1. Introduction Elements, basic terminology and network software. 2.2. OSI and TCP/IP reference model and standardization. 2.3. The physical layer. 2.4. The data link layer. 2.5. The network layer. 2.6. The transport layer. 2.7. The application layer. 2.8. Network security</li> <li>Unit 3. Development of networked multiplayer systems. 3.1. Unity and multiplayer. 3.2. Transport Layer and Application Layer in Unity. 3.3. The NAT. 3.4. Unity Framework multiplayer implementations and options. 3.5. Implementations of multiplayer environments in Unity using Netcode for Gameobjects</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9822001305</b>	Course: <b>UX and User interfaces</b> ( <i>UX e Interfaces de Usuario</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Definition of metrics and heuristic and empirical evaluations of usability, gameplay and user experience.</li> <li>Unit 2. Rapid prototyping in the software development cycle.</li> <li>Unit 3. Tools for the creation of Graphical User Interfaces (GUI).</li> <li>Unit 4. Design of Interfaces for interactive environments and video games (HUD).</li> </ul>						

- Unit 5. Graphic and logical design of menus and in-game HUBS

Year: <b>3rd</b>	Course code: <b>9822001306</b>	Course: <b>Rigging</b>	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Working mode and communication protocols .1.1. Departments of an Animation and Video Game production . 1.2. Rigging: first steps. 1.3. Production with different Software: Maya, first steps</li> <li>• Unit 2. Applying physical laws to the virtual universe . 2.1. Knowledge of movement and character .2.2. Introduction to hierarchies and nomenclature. 2.3. Maya's Basic Tools for Building Rigs. 2.4. General ik/fk systems</li> <li>• Unit 3. Deformation rig. 3.1. Skeleton construction. 3.2. Vertex painting. 3.3. PSDs or body correctives</li> <li>• Unit 4. Body Control Rig. 4.1. Construction of ik/fk systems. 4.2. Column construction. 4.3. Automatismos. 4.4. Connection to the deformation rig</li> <li>• Unit 5. Facial Rig. 5.1. Expression sculpting. 5.2. Construction through joints. 5.3. Hybrid system and deformers</li> <li>• Unit 6. Closing the rig. 6.1. Connection between facial rig and body rig. 6.2. Object Rig. 6.3. Limb deformation systems. 6.4. Build a demo with animation</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9822001307</b>	Course: <b>3D modeling II. Characters</b> <i>(Modelado 3D II. Personajes)</i>	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<ul style="list-style-type: none"> <li>• Unit 1: Organic Modeling. 1.1 3D interface and navigation. 1.2 Basic transformations: Move, rotate, scale. 1.3 Object selection. 1.4 Creation of primitives. Duplicate and delete objects</li> <li>• Unit 2: Creating Base Meshes. 2.1 Editing objects: Vertices, edges and faces. 2.2 Basic modeling tools. 2.3 Join and separate 3D geometry. 2.4 Proportions, fit and volume in Human and animal anatomy. 2.5. Main types of digital sculpting brushes. 2.7 Workflows</li> <li>• Unit 3: Topology for Gaming. 3.3 Facial topology. 3.2 Body and limb topology. 3.4 Retopology tools</li> <li>• Unit 4: Creating Complex Characters. 5.1 Creation of add-ons and "hard surface" elements.. 5.2 High finishes with alphas and other tools. 5.2 Scene preparation. 5.3 Exchange of 3d files between different programs. 5.4 Movement and Posing 5.4. Lighting and rendering systems</li> </ul>						

<b>3</b>	Course code: <b>9822001308</b>	<b>Inteligencia Artificial</b>	<b>Semestre 2 / Spring Term (Jan-Jun)</b>		<b>Español</b>	<b>6</b>
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Year: <b>3rd</b>	Course code: <b>9822001309</b>	Course: <b>Animation 3D Layout</b> <i>(Animación 3D I. Layout)</i>	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Basic Principles for Animating. 1.1. The 12 Principles of Animation. 1.2. Software: Getting Started with Maya. 1.3. The use of 3D cameras. 1.4. Basic Principles of Audiovisual Composition and Storytelling</li> <li>• Unit 2. Layout Department. 2.1. Operation of the Layout Department. 2.2. Animatic: how to read it and what it is for. Basic Principles. 2.3. Character Posing &amp; Animation. 2.4. Basic Camera &amp; Animation Rig</li> <li>• Unit 3. Planning. 3.1. Plan a story from the script. 3.2. Basic Principles of Acting: Acting. 3.3. Physical &amp; Virtual Cameras. 3.4. Production chain and continuity. Pose Libraries</li> <li>• Unit 4. Introduction to the complete Animate process. 4.1. Animation Department. 4.2. Full method: Golden, blocking, refine and polish.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9822001310</b>	Course: <b>Videogame project III</b> <i>(Proyecto de Videojuegos III)</i>	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						

- Unit 1. Transversal workshop to the knowledge acquired and to the diverse learning techniques assimilated throughout the first year, which can contribute to compose a simple two-dimensional video game project based on the subjects that coexist in the same semester of this project subject.
- Unit 2. Complex interactive digital piece attending in addition to the audiovisual technical aspect, to its socioeconomic and commercial involvement of the project

Year: <b>4th</b>	Course code: <b>9822001401</b>	Course: <b>Entrepreneurial Leadership</b> ( <i>Liderazgo Emprendedor</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Leadership. 1.1. Organization and management roles. 1.2. Leadership styles. 1.3. Organizational debate</li> <li>• Unit 2. Responsibilities. 2.1. Decision making. 2.2. Hierarchical relationships. 2.3. Conflict management</li> <li>• Unit 3. Work environment. 3.1. Negotiation. 3.2. Performance management and performance evaluation</li> <li>• Unit 4. Active Job Search. 4.1. Interviews and selection (interviewer's approach). 4.2. Interviews and selection (interviewee approach)</li> <li>• Unit 5. Companies and Start-ups. 5.1. Business creation. 5.2. Economic sustainability. 5.3. Risk prevention</li> </ul>						

Year: <b>4th</b>	Course code: <b>9822001804</b>	Course: <b>Visual Effects (Efectos Visuales)</b>	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to VFX. 1.1. Meaning and evolution . 1.2. Practical Effects . 1.3. Software: Getting Started with After Effects</li> <li>• Unit 2."Tracking" of cameras . 2.1. Motion Tracking: Types . 2.2. Case Studies</li> <li>• Unit 3. Color Correction. 3.1. Pure Color Correction . 3.2. Color grading and LUTs . 3.3. Case Studies</li> <li>• Unit 4. Integration of 3D with real image. 4.1. Techniques &amp; Tools . 4.2. Software: Getting Started with Maya . 4.3. Render passes and layered compositing . 4.4. Case Study</li> <li>• Unit 5. Particle Systems. 5.1. Techniques &amp; Tools. 5.2. Particles.5.3. Case Study</li> </ul>						

Year: <b>4th</b>	Course code: 9822001807	Course: <b>Lighting and Texturing</b> ( <i>Iluminación y Texturizado</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Painting tile textures. 1.1. Theoretical concepts about the function of texturing map. 1.2 Creation of basic material. 1.3. Use of brushes. 1.4. Creating "tileable" textures. 1.5. Using Layers for Detail Creation</li> <li>• Unit 2. Creative Techniques in UV Map Creation. 2.1. UV Basics. 2.2. 3D Object Mapping Tools. 2.3. Optimization of space in the texture. 2.4. Resolving Textures Between Different Objects</li> <li>• Unit 3. Retopology. 3.1. Tools for creating a retopology. 3.2. Optimization of low-resolution geometry. 3.3. Technical application "baking". 3.4. Map projection tools. 3.3. Creating Auxiliary Textures</li> <li>• Unit 4. Creating realistic textures and lighting. 4.1. Realistic texturing tools. 4.2. Lighting systems. 4.3. Texture assembly and rendering</li> <li>• Unit 5. Final Project: Texturing a Modular Stage. 5.1. Design, preparation and assembly. 5.2 Optimization and painting techniques in textures. 5.2 Final Texturing Finishes. 5.3 Presentation of the final model</li> </ul>						

Year: <b>4th</b>	Course code: <b>9822001808</b>	Course: <b>3D modeling III. Organic</b> ( <i>Modelado 3D Orgánico III</i> )	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Base Meshes and Anatomy . 1.1 Creating Basic Objects for Base Meshes . 1.2 Creating Base Meshes from References . 1.3 Organic modeling of anatomy. 1.4 Organizing Parts into Folders</li> <li>• Unit 2: Topology and Advanced Tools. 2.1 Retopology tools. 2.2 Layers and asymmetry. 2.3 Surface cleaning. 2.4 Advanced Digital Sculpting Tools</li> </ul>						



- Unit 3: Creating Plugins. 3.1 Fabric creation. 3.2 Hair creation. 3.3 Hard surface add-ons
- Unit 4: Presenting Models. 4.1 Texturing with Polypaint. 4.2 Render passes. 4.3 Image montage
- Unit 5: Final Project: Complex Character Creation. 5.1 Creating add-ons. 5.2 Exchanging 3D files between different programs. 5.3 Posing and character presentation

Year: <b>4th</b>	Course code: <b>9822001809</b>	Course: <b>Transmedia narratives</b> (Narrativas transmediáticas)	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Principles of transmedia.
- Unit 2. Nodes and transmedia "mapping".
- Unit 3. User Participation.
- Unit 4. Interactive narrative structures.
- Unit 5. Emergent narrative.
- Unit 6. Serialized narrative.
- Unit 7. Narrative mechanisms according to the genre of the story

Year: <b>4th</b>	Course code: <b>9822001813</b>	Course: <b>Virtual and Augmented Reality</b> (Realidad Virtual y Realidad Aumentada)	Program: <b>Bachelor's Degree in Videogame Design</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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- Unit 1. Introduction to Virtual and Augmented Reality
- Unit 2. Principles of Virtual Reality and Software
- Unit 3. Principles of Augmented Reality and Software
- Unit 4. Application to the field of video games and animation

## Bachelor's Degree in Physics (Grado en Física) (Spanish)

1	9799001101	Fundamentos de Física I	Semestre 1 / Fall Term (Sept - Jan)	Español	6
1	9799001102	Fundamentos de Física II	Semestre 2 / Spring Term (Jan - Jun)	Español	6
1	9799001103	Técnicas Experimentales Básicas	Semestre 2 / Spring Term (Jan - Jun)	Español	6
1	9799001104	Análisis Matemático I	Semestre 1 / Fall Term (Sept - Jan)	Español	6
1	9799001105	Análisis Matemático II	Semestre 2 / Spring Term (Jan - Jun)	Español	6
1	9799001106	Álgebra lineal y Geometría Analítica	Semestre 1 / Fall Term (Sept - Jan)	Español	6
1	9799001107	Variable Compleja	Semestre 2 / Spring Term (Jan - Jun)	Español	6
1	9799001108	Computación Científica I	Semestre 1 / Fall Term (Sept - Jan)	Español	6
1	9799001109	Computación Científica II	Semestre 2 / Spring Term (Jan - Jun)	Español	6
1	9799001110	Química	Semestre 1 / Fall Term (Sept - Jan)	Español	6

Year: <b>2nd</b>	Course code: <b>9799001201</b>	Course: <b>Mechanics and Waves I</b> ( <i>Mecánica y Ondas I</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Newtonian mechanics. Point kinematics. Inertial frames of reference and Galilean relativity. Newton's laws for single particles and systems of particles. Constants of motion. Work and energy. Linear momentum and angular momentum. One-dimensional potentials.</li> <li>Unit 2. The two-body problem. Central forces. Reduction to the equivalent one-body problem. Equations of motion. Constants of motion. The Kepler problem. Scattering in a central force field.</li> <li>Unit 3. Lagrangian mechanics. Generalised coordinates. Holonomic constraints in a mechanical system. Generalised coordinates and configuration space. Euler–Lagrange equations. Hamilton's principle. Constants of motion. Lagrange multipliers. Symmetry and conservation. Cyclic coordinates.</li> <li>Unit 4. Hamiltonian mechanics. Introduction to the Hamiltonian formulation. Hamilton's equations. Dynamical systems and phase diagrams. Hamilton's equations. Symmetries, conserved quantities.</li> <li>Unit 5. Small oscillations. Simple harmonic oscillator. Damped oscillator. Forced oscillator and resonance. Introduction and definitions. Normal modes of oscillation. Normal frequencies. Amplitudes of the modes. Normal coordinates. Generalisation of a linear system. Small oscillations in non-linear systems.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9799001202</b>	Course: <b>Mechanics and Waves II</b> ( <i>Mecánica y Ondas II</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Small oscillations. Simple harmonic oscillator. Damped oscillator. Forced oscillator and resonance. Introduction and definitions. Normal modes of oscillation. Normal frequencies. Amplitudes of the modes. Normal coordinates. Generalisation of a linear system. Small oscillations in non-linear systems.</li> <li>Unit 2. Non-inertial frames of reference. Non-inertial frame of reference. Orbital frame of reference. Rotating frame of reference. Coriolis acceleration and centrifugal acceleration. Time derivatives in each frame of reference. Acceleration and velocity transformations. Fictitious forces: Coriolis and centrifugal. Frame of reference on Earth. Rotating and orbital frame of reference. General case.</li> <li>Unit 3. Systems of particles. Magnitudes in systems of particles. Centre of mass of systems of particles. Dynamics for systems of particles. Movement of the centre of mass. Linear momentum for systems of particles. Conservation of the total momentum. Impulse of forces. Total energy in systems of particles. Frame of reference. Centre of mass. Collisions. Variable-mass systems. Reduced mass: the two-body problem. Angular momentum of a system of particles (internal and orbital). Conservation of angular momentum. Torque. Cross section. Rutherford scattering.</li> <li>Unit 4. Rigid bodies. Kinematics of rigid bodies. Instantaneous centre of rotation. Linear momentum. Angular momentum. Kinetic energy. Rigid-body dynamics. Inertia tensor. Equations of motion. Euler angles. Euler equations. Rigid body with a fixed point. Movement around a fixed point. Gyroscope.</li> <li>Unit 5. Wave motion. Concept of waves. Harmonic waves. Wave equation. Fourier analysis. Standing waves. Energy. Plane and spherical waves.</li> <li>Unit 6. Special relativity Postulates and principles of special relativity. Lorentz transformations. Minkowski space. Four-vectors. Composition of velocities. Relativistic four-momentum. Relativistic energy. Mass–energy equivalence. Relativistic dynamics.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9799001203</b>	Course: <b>Electromagnetism I</b> ( <i>Electromagnetismo I</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Scalar and vector fields</li> </ul>						

Vector algebra. Differential calculus (gradient, divergence, rotational and the Laplacian). Integral calculus (line, surface and volume integrals). Divergence theorem and rotation theorem. Helmholtz's theorem. Coordinate systems (cylindrical and spherical). Dirac delta function.

- Unit 2. Electrostatics in a vacuum and in matter.  
Coulomb's law. Electric field,  $E$ . Gauss's law. Electric potential. Laplace's equation and Poisson's equation. Electrostatics in conductors. Multipole expansion of potential. Electric dipoles. Polarization vector  $P$ . Bound charges (surface and volume). Electric displacement field,  $D$ . Boundary conditions of  $E$ ,  $P$  and  $D$ . Electrostatic field work and energy. Linear dielectrics.
- Unit 3. Magnetostatics in a vacuum and in matter.  
Lorentz force. Electric current. Current densities and the continuity equation. Biot–Savart law. Ampere's law. Magnetic induction vector,  $B$ . Magnetic vector potential,  $A$ . Diamagnetism, paramagnetism and ferromagnetism. Magnetization vector,  $M$ . Magnetization currents. Auxiliary field  $H$ . Magnetic susceptibility. Boundary conditions  $B$  and  $H$ .
- Unit 4. Electromagnetic field equations (Maxwell's equations)  
Faraday–Lenz law. Self-inductance and mutual inductance. Magnetic field energy. Displacement current. Maxwell's equations in a vacuum and in matter. Boundary conditions.
- Unit 5. Direct current and alternating current electric circuits.  
Resistivity. Conductivity. Ohm's law. RC, RL and RLC circuits. Transformers.

Year: <b>2nd</b>	Course code: <b>9799001204</b>	Course: <b>Electromagnetism II (<i>Electromagnetismo II</i>)</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 Maxwell's equations, potentials and electromagnetic fields: Maxwell's equations. Conservation laws. Scalar and vector potential.
- Unit 2 Electromagnetic waves: Plane waves. Waves in a vacuum. Waves in matter. Absorption and dispersion. Polarisation. Reflection and transmission.
- Unit 3 Guided waves: Types of waveguides. TE, TM and TEM modes of propagation.
- Unit 4 Radiation: Dipole radiation. Point charges.
- Unit 5 Electrodynamics and relativity: Special theory of relativity. Relativistic Mechanics. Relativistic electrodynamics.
- Unit 6 Transmission lines: Wave propagation through transmission lines with and without losses. Characteristic impedance and speed. Attenuation in lines with losses.

Year: <b>2nd</b>	Course code: <b>9799001205</b>	Course: <b>Optics (<i>Óptica</i>)</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Background: Brief history of Optics. Development of Optics and key discoveries over time.
- Unit 2. Propagation of light in a homogeneous medium: Review of EM waves. Optical characterisation of different media. Refraction index. Light reflection and refraction.
- Unit 3. Geometrical optics: Lenses. Diaphragms. Mirrors and prisms. Optical fibre. Optical systems. Thick lenses and lens systems. Ray tracing. Aberration.
- Unit 4. Superposition of waves: Adding waves together according to their frequency. Periodic harmonic waves. Aperiodic waves.
- Unit 5. Scalar theory of the propagation of light in a homogeneous medium: Nature of polarised light. Polarisation by reflection. Circular polarisers. Polarisation of polychromatic light.
- Unit 6. Interference: Introduction to coherence theory. Field superposition.
- Interferometers.
- Unit 7. Scalar diffraction theory: Fraunhofer and Fresnel approximations. Resolving power of an instrument. Diffraction gratings. Introduction to spatial frequency filtering.

Year: <b>2nd</b>	Course code: <b>9799001206</b>	Course: <b>Thermodynamics (<i>Termodinámica</i>)</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Thermodynamic variables.
- Unit 2. First law of thermodynamics. Work and heat. Enthalpy. 3. Second and third laws of thermodynamics. Entropy.
- Unit 4. Mass, energy and entropy balances.
- Unit 5. Thermochemistry.

- Unit 6. Relationship between thermodynamic properties and real gases.

Year: <b>2nd</b>	Course code: <b>9799001208</b>	Course: <b>Experimental Project I</b> ( <i>Proyecto Experimental I</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Mechanics Laboratory.</li> <li>• Unit 2. Thermodynamics Laboratory.</li> <li>• Unit 3. Optics Laboratory.</li> <li>• Unit 4. Integrated project development</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9799001209</b>	Course: <b>Differential Equations in Physics</b> ( <i>Ecuaciones Diferenciales en la Física</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. First order ODEs</li> <li>• Unit 2. Higher order ODEs</li> <li>• Unit 3. Linear systems</li> <li>• Unit 4. Series solutions</li> <li>• Unit 5. Contour problems for ODEs</li> <li>• Unit 6. Partial differential equations</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9799001210</b>	Course: <b>Statistics and Scientific Data Analysis</b> ( <i>Estadística y Análisis de Datos Científicos</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Descriptive statistics</li> <li>• Unit 2. Combinatorics and probability</li> <li>• Unit 3. Random variables</li> <li>• Unit 4. Probabilistic models</li> <li>• Unit 5. Statistical inference</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001301</b>	Course: <b>Quantum Physics I</b> ( <i>Física Cuántica I</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Background: experimental foundations of quantum physics.</li> <li>• Unit 2. Schrödinger equation.</li> <li>• Unit 3. Postulates and mathematical formalism.</li> <li>• Unit 4. One-dimensional problems.</li> <li>• Unit 5. Three-dimensional problems.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001302</b>	Course: <b>Physical Electronics</b> ( <i>Electrónica Física</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Basic concepts of band structure.</li> <li>• Unit 2. Physics of semiconductors.</li> <li>• Unit 3. Properties of electronic transport.</li> <li>• Unit 4. Heterojunctions and nanostructures</li> <li>• Unit 5. Introduction to micro- and nanoelectronics.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001303</b>	Course: <b>Solid-State Physics</b> ( <i>Física del Estado Sólido</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Bonding and crystal structure.</li> <li>• Unit 2. Reciprocal lattice and X-ray diffraction.</li> <li>• Unit 3. Thermal properties of solid bodies.</li> <li>• Unit 4. Electronic properties of solid bodies.</li> <li>• Unit 5. Magnetism and superconductivity.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001304</b>	Course: <b>Statistical Physics</b> ( <i>Física Estadística</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction to statistical physics: Macroscopic and microscopic descriptions. First postulate. Ensembles and fluctuations. Liouville's equation.</li> <li>• Unit 2. Microcanonical ensemble: Second postulate. Phase volume, accessible microstates and their dependence on energy.</li> <li>• Unit 3. Statistical physics and thermodynamics: Heat, work, quasi-statistical processes and entropy.</li> <li>• Unit 4. Canonical ensemble: Partition function, averages and general equipartition theorem.</li> <li>• Unit 5. Ideal systems: Maxwell's velocity distribution and classical theory of paramagnetism.</li> <li>• Unit 6. Real gases: Configurational partition function and the Van der Waals equation.</li> <li>• Unit 7. Grand canonical ensemble: General partition function, macrocanonical probability distribution and its relationship with thermodynamics.</li> <li>• Unit 8. Fundamentals of quantum statistical physics: Identical particles and ensembles in quantum physics.</li> <li>• Unit 9. Degenerate gas: Degenerate Fermi gas and Fermi energy calculation. Degenerate Bose gas. Bose–Einstein condensate.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001305</b>	Course: <b>Experimental Project II</b> ( <i>Proyecto Experimental II</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Electromagnetism laboratory.</li> <li>• Unit 2. Solid-state physics laboratory.</li> <li>• Unit 3. Electronic instrumentation laboratory.</li> <li>• Unit 4. Integrated project.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001801</b>	Course: <b>Materials Physics</b> ( <i>Física de Materiales</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the speciality of Materials. <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Background: A brief historical description of the evolution of materials. Types of materials.</li> <li>• Unit 2. The structure of materials Fundamental concepts. Bonds: types of bonds. Crystalline structure: Crystalline and non-crystalline materials.</li> <li>• Unit 3. Defects and imperfections in solid materials Point, line and mass defects. Communication: Diffusion mechanisms. Deformation, dislocation, recrystallization. Breakage. Phase diagrams and transitions.</li> <li>• Unit 4. Structure, properties and uses of metals Ferrous alloys. Non-ferrous alloys.</li> <li>• Unit 5. Structure, properties and uses of ceramics Phase diagrams for ceramic materials. Mechanical properties. Uses of ceramic materials.</li> <li>• Unit 6. Structures, properties and uses of polymers Mechanical behaviour of polymers. Deformation and hardening mechanisms. Crystallization and glass transition in polymers. Types of polymers.</li> <li>• Unit 7. Composite materials Particle reinforcement. Fibre reinforcement. Structural composite materials.</li> <li>• Unit 8. Electrical, magnetic, thermal and optical properties of materials</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001802</b>	Course: <b>Characterisation Techniques</b> ( <i>Técnicas de Caracterización</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Materials.

**Course content/Units:**

- Unit 1. Introduction to characterisation techniques
- Unit 2. Spectroscopy and microscopy
- Unit 3. Thermal analysis and diffraction techniques
- Unit 4. Characterisation of physical properties
- Unit 5. Characterisation of defects
- Unit 6. Simulation of materials

Year: <b>3rd</b>	Course code: <b>9799001803</b>	Course: <b>Advanced Materials Physics</b> ( <i>Física de Materiales Avanzados</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Materials.

**Course content/Units:**

- Unit 1. Advanced metallic materials
- Unit 2. Advanced ceramics
- Unit 3. Advanced polymeric materials
- Unit 4. Organic semiconductors
- Unit 5. Composite materials

Year: <b>3rd</b>	Course code: <b>9799001804</b>	Course: <b>Biomaterials and Tissue Physics</b> ( <i>Biomateriales y Física de Tejidos</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Materials.

**Course content/Units:**

- Unit 1. Cell cultivation. 1.1. Introduction to the cell culture technique. 1.2. cell culture requirements. 1.3. dissociated cells: primary cultures and cell lines. 1.4. quantification of cellular parameters and cycle analysis. 1.5. industrial applications of cell cultures. 1.6. biosafety of cell cultures in biotechnology
- Unit 2: Biomaterials and Tissue Engineering. 2.1. Introduction to biomaterials. 2.2. Biomaterials and supports for cell cultures. 2.3. Biological response

Year: <b>3rd</b>	Course code: <b>9799001805</b>	Course: <b>Introduction to Nanotechnology</b> ( <i>Introducción a la Nanotecnología</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Materials.

**Course content/Units:**

- Unit 1. Physical principles and structure of nanomaterials.
- Unit 2. Fundamental properties of individual nanoparticles and nanostructured materials.
- Unit 3. Nanoparticle synthesis and methods of obtaining nanomaterials.
- Unit 4. Key characterisation techniques for nanostructured materials.
- Unit 5. Basic applications of nanotechnology.

Year: <b>3rd</b>	Course code: <b>9799001806</b>	Course: <b>Signal and Image Processing</b> ( <i>Procesamiento de la Señal y de la Imagen</i> )	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Computing and Data Analysis, Electronics and Materials

**Course content/Units:**

- Unit 1. Fundamentals of signal processing.
- Unit 2. Representations of signals and images in the frequency domain.
- Unit 3. Sampling and signal reconstruction.
- Unit 4. Image segmentation, characterisation and registration.
- Unit 5. Image compression and storage.

- Unit 6. Techniques for analysing, processing and transmitting signals and images.

Year: <b>4th</b>	Course code: <b>9799001807</b>	Course: <b>Materials for Energy Storage and Transformation</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Materials. <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Advanced batteries</li> <li>Unit 2. Photovoltaic materials: inorganic semiconductors, organic materials</li> <li>Unit 3. Fuel cells</li> <li>Unit 4. Superconductors</li> <li>Unit 5. Heat accumulators</li> <li>Unit 6. Hydrogen</li> </ul>						

Year: <b>4th</b>	Course code: <b>9799001808</b>	Course: <b>Photonics (Fotónica)</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Electronics. <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Optical materials with linear response to electromagnetic radiation.</li> <li>Unit 2. Optical materials with non-linear response to electromagnetic radiation.</li> <li>Unit 3. Concepts, model and types of lasers.</li> <li>Unit 4. Characterisation of optical fibre and its associated phenomenology.</li> <li>Unit 5. Photonic devices.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9799001809</b>	Course: <b>Quantum Technologies (Tecnologías cuánticas)</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialties of Computing and Data Analysis, Electronics and Materials <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Introduction to classical information theory . 1.1. The bit. 1.2. Logic gates. 1.3. Information and entropy.</li> <li>Unit 2. Quantum information theory. 2.1. The qubit. The Bloch sphere. Multiple qubits. 2.2. Quantum logic gates. 2.3. Entanglement. 2.4. Density operator. Trace and partial trace. 2.5. Quantum teleportation. Superdense coding. 2.6. No-cloning theorem. 2.7. The monogamy of entanglement.</li> <li>Unit 3. Quantum cryptography. 3.1. The BB84 protocol. 3.2. The E91 protocol.</li> <li>Unit 4. Quantum computing. 4.1. Introduction to quantum algorithms. 4.2. Grover's algorithm. 4.3. Variational quantum algorithms: QAOA and VQE. 4.4. Quantum annealing.</li> <li>Unit 5. Exotic states of matter. 5.1. Introduction to superconductivity. 5.2. Persistent current. 5.3. Perfect diamagnetism. 5.4. Type I and type II superconductors.</li> <li>Unit 6. Introduction to plasma physics. 6.1. Plasma properties. 6.2. The collision cross-section. 6.3. Continuity equations.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001811</b>	Course: <b>Analogue and Digital Electronics</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Electronics <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Operation and application of electronic devices</li> <li>Unit 2. Amplifiers: operation and application</li> <li>Unit 3. Introduction to digital electronics</li> <li>Unit 4. Digital logic families</li> <li>Unit 5. Combinational and sequential circuits</li> </ul>						

Year: <b>3rd</b>	Course code:	Course: <b>Electronic Instrumentation</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Electronics <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Electronic measurement systems</li> <li>Unit 2. Analogue-to-digital converters and digital-to-analogue converters</li> <li>Unit 3. Sensors and actuators</li> <li>Unit 4. Analysis and simulation of systems through virtual instrumentation</li> </ul>						

Year: <b>3rd</b>	Course code:	Course: <b>Communications Electronics</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Electronics <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Communication system model. Channel and noise.</li> <li>Unit 2. Analogue and digital modulation. Data transmission.</li> <li>Unit 3. Basic electronic circuits in modulations.</li> <li>Unit 4. Introduction to advanced telecommunication systems (TDT, LTE, Wi-Fi, internet).</li> <li>Unit 5. Electronic subsystems and components in telecommunication.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001816</b>	Course: <b>Databases (<i>Bases de Datos</i>)</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Computing and Data Analysis <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Foundations of databases . 1.1. Purpose, abstraction, models. 1.2. Types of databases. Instances and schemas. 1.3. DDL and DML. 1.4. Database administrator and users.</li> <li>Unit 2. Conceptual model. 2.1. Entities and entity sets. 2.2. Relationships and relationship sets. 2.3. Attributes and keys. 2.4. Entity-Relationship diagram.</li> <li>Unit 3. Relational model. 3.1. Structure of relational databases. 3.2. Converting ER diagrams into tables. 3.3. Tuples and domains. 3.4. Views, sequences and indexes.</li> <li>Unit 4. Normalisation and physical figures. 4.1. Fundamentals and normal forms. 4.2. Normalisation with functional or multi-valued dependencies. 4.3. Subtype mapping and implementation.</li> <li>Unit 5. SQL language. Database implementation. 5.1. Basic components of an SQL sentence. 5.2. Basic SQL queries. 5.3. Interpretation of queries and operators. 5.4. Set operations. 5.5. Database operation schema.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001817</b>	Course: <b>Data Mining (<i>Minería de Datos</i>)</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Computing and Data Analysis <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Data extraction processes 1.1. Introduction. 1.2. Data sources. 1.3. Phases in the data extraction process. 1.4. Data analysis and interpretation.</li> <li>Unit 2. Data preparation. 2.1. The data transformation process. 2.2. Data validation. 2.3. Data cleaning. 2.4. Transformation. 2.5. Enrichment.</li> <li>Unit 3. Data mining techniques. 3.1. Basic concepts. 3.2. Big Data. 3.3. Algorithms.</li> <li>Unit 4. Machine learning. 4.1. Fundamentals of machine learning. 4.2. Machine learning algorithms. 4.3. Model selection. 4.4. Training. 4.5. Prediction.</li> <li>Unit 5. Model evaluation, diffusion and use. 5.1. Model evaluation. 5.2. Interpretation of results. 5.3. Model fitting. 5.4. Interpretability and machine learning.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9799001818</b>	Course: <b>Advanced Scientific Computing (<i>Computación Científica Avanzada</i>)</b>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Computing and Data Analysis						



**Course content/Units:**

- Unit 1. Data structures (linear, hierarchical, relational and functional).
- Unit 2. Advanced algorithm design techniques. Efficiency and complexity.
- Unit 3. Concurrent programming. Communication and synchronisation mechanisms.
- Unit 4. Introduction to distributed systems.

Year: <b>3rd</b>	Course code: <b>9799001819</b>	Course: <b>Applications of Discrete Mathematics</b> <i>(Aplicaciones de Matemática Discreta)</i>	Program: <b>Bachelor's Degree in Physics</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Computing and Data Analysis

- **Course content/Units:**
- Unit 1. Propositional logic and Boolean algebra.
- Unit 2. Relationships and recurrence.
- Unit 3. Combinatorics and introduction to game theory.
- Unit 4. Graph theory. Trees.
- Unit 5. Languages and grammar. Finite-state machines.
- Unit 6. Turing machines.

## Bachelor's Degree in Biomedical Engineering (*Grado en Ingeniería Biomédica*) (Spanish)

Año	Código	Asignatura	Periodo	Idioma	Ects
1	9953003101	Cálculo I	semestre 1 / fall term (sept–jan)	español	6
1	9953003102	Química	semestre 1 / fall term (sept–jan)	español	6
1	9953003103	Fundamentos de Programación	semestre 1 / fall term (sept–jan)	español	6
1	9953003104	Ética y Eficacia Profesional	semestre 1 / fall term (sept–jan)	español	6
1	9953003105	Bioquímica y Biología Celular	semestre 2 / spring term (jan–jun)	español	6
1	9953003106	Álgebra	semestre 1 / fall term (sept–jan)	español	6
1	9953003107	Programación Avanzada	semestre 2 / spring term (jan–jun)	español	6
1	9953003108	Cálculo II	semestre 2 / spring term (jan–jun)	español	6
1	9953003109	Fundamentos Físicos de la Ingeniería	semestre 2 / spring term (jan–jun)	español	6
1	9953003110	Proyecto de Ingeniería	semestre 2 / spring term (jan–jun)	español	6
2	9953003201	Bioestadística	semestre 1 / fall term (sept–jan)	español	6
2	9953003202	Estructura y Función del Cuerpo Humano I	semestre 1 / fall term (sept–jan)	español	6
2	9953003203	Sistemas Lineales	semestre 1 / fall term (sept–jan)	español	6

Year: <b>2nd</b>	Course code: <b>9953003204</b>	Course: <b>Biomechanics Fundamentals</b> <i>(Fundamentos de Biomecánica)</i>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Mechanics of continuous media. Tensions, deformations.
- Unit 2. Mechanical properties of biological tissues.
- Unit 3. Energy and fluid mechanics considerations applicable to biomechanics.
- Unit 4. Simulation and experimental methods.

2	9953003205	Fundamentos de Circuitos Eléctricos y Electrónicos	semestre 1 / fall term (sept–jan)	español	6
2	9953003206	Electrónica Digital y Microprocesadores	semestre 2 / spring term (jan–jun)	español	6

Year: <b>2nd</b>	Course code: <b>9953003207</b>	Course: <b>Telemedicine Project (Proyecto de Telemedicina)</b>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction
- Unit 2. Software Engineering Tools and Processes. 2.1. Requirements & Use Cases: Requirements Capture. 2.2. Agile methodologies: SCRUM. 2.3. SCRUM boards in Trello for sprint organization . 2.4. Drafting of preliminary engineering projects. 2.5. GitHub as a code repository and release manager
- Unit 3. Software development methodologies and tools. 3.1. Model-view-controller pattern. 3.2. Interaction with text files. 3.3. GUI development. 3.4. Application development using Java at Eclipse. 3.5. Data visualization using different types of graphs
- Unit 4. Development of a system consisting of a desktop application for telecare Elderly and/or disabled people. 4.1. App with 3 different roles: doctor, supervisor and patient. 4.2. Relationships between a patient and their physicians/supervisors. 4.3. Visualization of patient information

2	9953003208	Estructura y Función del Cuerpo Humano II	semestre 2 / spring term (jan–jun)	español	6
2	9953003209	Electrónica Analógica	semestre 2 / spring term (jan–jun)	español	6
2	9953003210	Proyecto de bases de datos	semestre 2 / spring term (jan–jun)	español	6

Year: <b>3rd</b>	Course code: <b>9953003301</b>	Course: <b>Biomedical signals (Señales biomédicas)</b>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Signals and Systems. 1.1. Discrete-time signals, basic signals. 1.2. Discrete-time systems, LTI systems. 1.3. Noise as a stochastic process. 1.4. Representation of discrete signals and systems in the frequency domain. 1.5. Discrete-time signal sampling. 1.6. Representation of sampling in frequency.
- Unit 2: Main biomedical signals.. 2.1. Overview of biomedical signals and their processing. 2.2. EEG. 2.3. ECG. 2.4. EMG
- Unit 3: Filtering of biomedical signals. 3.1. Digital filters. 3.2. Filtering of biomedical signals in time and frequency. (Noise filtering. Removal of unwanted events). 3.3. Practice of detecting QRS complexes.
- Unit 4: Time-Frequency Techniques. 4.1. DTFT and STFT. Application of STFT to spectral analysis of non-stationary signals. 4.2. Separation of biomedical signals. 4.3. Estimation of potential spectral densities. The periodogram

Year: <b>3rd</b>	Course code: <b>9953003302</b>	Course: <b>Human body Biomechanics (Biomecánica del cuerpo humano)</b>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Basics and Statics. 1.1. Basic concepts. 1.2. Centre of mass and centre of gravity. 1.3. Stability and balance
- Unit 2: Movement Patterns and Qualitative Analysis. 2.1. Movement patterns. 2.2. Types of analysis. 2.3. Introduction to filming. 2.4. Guidelines for conducting a qualitative analysis
- Unit 3: Kinematic Biomechanical Analysis. 3.1. Basic Concepts: Kinematic Analysis. 3.2. Projectiles. 3.3. Linear and angular kinematics analysis. 3.4. Practical applications
- Unit 4: Kinetic Biomechanical Analysis. 4.1. Basic concepts: Kinetic analysis. 4.2. Moments of strength . 4.3. Conservation of linear and angular momentum. 4.4. Practical applications

Year: <b>3rd</b>	Course code: <b>9953003303</b>	Course: <b>Signal processing project (Proyecto de procesamiento de la señal)</b>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction
- Unit 2. Clinical case analysis
- Unit 3. Motion Simulation. 3.1. Simulation of the biomechanics of movement. 3.2. Development tools: Matlab
- Unit 4. Signal Processing. 4.1. Development tools: Matlab
- Unit 5. Presentation and defense of the project

Year: <b>3rd</b>	Course code: <b>9953003304</b>	Course: <b>Biomedical sensors and actuators</b> ( <i>Sensores y actuadores biomédicos</i> )	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to measurement systems
- Unit 2. Signal Conditioning
- Unit 3. Different types of sensors (temperature, pressure, force, torque, position, speed, ..)
- Unit 4. Opto-electronic transducers
- Unit 5. Types of Actuators: Hydraulic, Pneumatic and Electric
- Unit 6. Electric motors: DC motors, AC motors, stepper motors and servo motors.
- Unit 7. Electronics in motor control systems

<b>3</b>	<b>9953003305</b>	<b>Genética</b>	<b>semestre 2 / spring term (jan – jun)</b>		<b>español</b>	<b>6</b>
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Year: <b>3rd</b>	Course code: <b>9953003306</b>	Course: <b>Neurorehabilitation project</b> ( <i>Proyecto de neurorehabilitación</i> )	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction
- Unit 2. Project planning
- Unit 3. Sensors & Actuators. 3.1. Development and evaluation of a data acquisition system that allows the monitoring and Simulation of movement. 3.2. Development tools: Matlab; Arduino IDE; Esp 32; Inertial units
- Unit 4. Motion monitoring system from video. 4.1. Development tools: Matlab or Kinovea or similar
- Unit 5. Presentation and defense of the project

Year: <b>3rd</b>	Course code: <b>9953003307</b>	Course: <b>Medical Image Processing</b> ( <i>Procesado de imagen médica</i> )	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Medical Image Processing. 1.1. Image representation. Pixel and voxel concepts. 1.2. Digital imaging, sampling, and color space. 1.3. Histogram-based processing of the image
- Unit 2. Filtering in the space and frequency domain. 2.1. In-space filtering. Convolution and masks. 2.2. Linear filters and non-linear filters for smoothing, enhancement and contour detection. 2.3. Frequency filtering. Fourier transform. 2.4. Anti-aliasing and low-pass filters. 2.5. Enhancement and high-pass filters.
- Unit 3. Segmentation. 3.1. Threshold and adaptive threshold. 3.2. Clustering. 3.3. Regional growth. 3.4. Active contours
- Unit 4. Morphology. 4.1. Morphological operators in binary image: erosion, dilation, opening and closing. 4.2. Morphological reconstruction
- Unit 5. Image Registration. 5.1. Clinical applications. 5.2. Parametric and non-parametric registration
- Unit 6. Image Classification. 6.1. Artificial Intelligence: Convolutional Neural Networks

<b>3</b>	<b>9953003308</b>	<b>Liderazgo-emprendedor</b>	<b>semestre 2 / spring term (jan – jun)</b>		<b>español</b>	<b>6</b>
<b>4</b>	<b>9953003801</b>	<b>Sistemas operativos</b>	<b>semestre 1 / fall term (sept – jan)</b>		<b>español</b>	<b>6</b>

Year: <b>3rd</b>	Course code: <b>9953003802</b>	Course: <b>Data mining in Biomedicine</b> <i>(Minería de datos en biomedicina)</i>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Descriptive Statistics and Data Analysis. 1.1. Introduction to descriptive statistics. 1.2 Centrality measures. 1.3. Dispersion measures. 1.4. Start of programming in R.
- Unit 2. Text mining and natural language processing. 2.1. Natural language processing. 2.2. Sentiment Analysis.
- Unit 3. Introduction to machine learning. 3.1. Introduction to Machine Learning 3.2 Types of learning. 3.3. Training, testing and validation.
- Unit 4. Supervised and unsupervised learning algorithms. 4.1. Introduction to Unsupervised Machine Learning. 4.2. K means. 4.3. LDA. 4.4. Introduction to Supervised Machine Learning. 4.5 Decision Trees. 4.6. Naive Bayes. 4.7. Vectoring support machines. 4.8. Neural networks.
- Unit 5. Social Network Analysis (SNA) and Natural Language Processing (NLP). 5.1. Graph theory. 5.2 Community detection algorithms. 5.3. Visual representation of networks (R and Gephi).

<b>3</b>	<b>9953003803</b>	<b>Redes de ordenadores</b>	<b>semestre 2 / spring term (jan-jun)</b>		<b>español</b>	<b>6</b>
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Year: <b>3rd</b>	Course code: <b>9953003804</b>	Course: <b>Introduction to Nanotechnology</b> <i>(Introducción a la nanotecnología)</i>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Physical principles and structure of nanomaterials.
- Unit 2. Fundamental properties of individual nanoparticles and nanostructured materials.
- Unit 3. Synthesis of nanoparticles and methods for obtaining nanomaterials.
- Unit 4. Main characterization techniques for nanostructured materials.
- Unit 5. Basic applications of nanotechnology.

Year: <b>4th</b>	Course code: <b>9953003403</b>	Course: <b>Técnicas de imagen biomédica</b> <i>(Biomedical Imaging Techniques)</i>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Projective Radiography
- Unit 2: CT Scan
- Unit 3: Magnetic Resonance Imaging
- Unit 4: Nuclear Medicine
- Unit 5: Ultrasound
- Unit 6: Optical Imaging and Microscopy
- Unit 7: DICOM and PACS

Year: <b>4th</b>	Course code: <b>9953003807</b>	Course: <b>Clinical Intervention Systems</b> <i>(Sistemas de Intervención Clínica)</i>	Program: <b>Bachelor's Degree in Biomedical Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Monitoring systems
- Unit 2. Electrical stimulation systems
- Unit 3. Computer-assisted surgery systems
- Unit 4. Non-invasive intervention systems
- Unit 5. Other intervention systems

Year: <b>4th</b>	Course code: <b>9953003808</b>	Course: <b>Mobility systems</b> <i>(Sistemas de movilidad)</i>	Program:	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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			<b>Bachelor's Degree in Biomedical Engineering</b>			
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Design, manufacture and fitting of prostheses</li> <li>Unit 2. Treatment and rehabilitation systems</li> <li>Unit 3. Technical aids for mobility and activities of daily living</li> <li>Unit 4. Ergonomics and disability</li> </ul>						

4	9953003810	Robótica	semestre 1 / fall term (sept - jan)		español	6
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## Bachelor's Degree in Mathematical Engineering applied on Data Analysis (Grado en Ingeniería en Matemática Aplicada al Análisis de Datos) (Spanish)

1	9840001101	Eficacia personal y profesional	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9840001102	Fundamentos de empresa	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9840001103	Marketing y Ventas	Semestre 2 / Spring Term (Jan - Jun)		Español	6
1	9840001104	Fundamentos de programación y computadores	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9840001105	Programación orientada a objetos	Semestre 2 / Spring Term (Jan - Jun)		Español	6
1	9840001106	Bases de datos	Semestre 2 / Spring Term (Jan - Jun)		Español	6
1	9840001107	Principios básicos de la estadística	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9840001108	Álgebra	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9840001109	Cálculo numérico	Semestre 2 / Spring Term (Jan - Jun)		Español	6
1	9840001110	Proyecto De Sistema De Información	Semestre 2 / Spring Term (Jan - Jun)		Español	6
2	9840001201	Impacto e influencia relacional	Semestre 1 / Fall Term (Sept - Jan)		Español	6

Year: <b>2nd</b>	Course code: <b>9840001202</b>	Course: <b>Operations and Human Resources (Operaciones y RRHH)</b>	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Human resources. 1.1. Human Resources Management. 1.2. Motivation in the company. 1.3. Human Resources Forecasting Plan. 1.4. Job descriptions and evaluations. 1.5. Recruitment and selection. 1.6. Training &amp; Development</li> <li>Unit 2. Operations. 2.1. What are operations? 2.2. Process management. 2.3. Digital Process Automation</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9840001203</b>	Course: <b>Data Structures (Estructuras de datos)</b>	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Linear Data Structures (Topics 1, 2 and 3)
- Unit 2. Hierarchical data structures (topic 5)
- Unit 3. Hash Tables (topic 4)

Year: <b>2nd</b>	Course code: <b>9840001204</b>	Course: <b>Artificial Intelligence</b> ( <i>Inteligencia Artificial</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Getting Started and Solving Problems
- Unit 2. Machine learning
- Unit 3. Data mining and intelligent information access systems.
- Unit 4. Supervised learning.
- Unit 5. Regression: linear and logistic
- Unit 6. Classification. Vector support machines. K Nearest Neighbors
- Unit 7. Natural language processing.
- Unit 8. Neural networks.

Year: <b>2nd</b>	Course code: <b>9840001205</b>	Course: <b>Project Management</b> ( <i>Gestión de proyectos</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Fundamentals of Project Management. 1.1. The context of software projects. 1.2. Methodologies for project management . 1.3. Data Life Cycle and Software Development Process Models. 1.4. Managing expectations and communication. 1.5. Relevant institutions and bodies
- Unit 2. Preparation phase of a project. Scoping & Planning. 2.1. Project Life Cycle vs. Software Life Cycle. 2.2. Planning a project. Classic and Agile Approaches. 2.3. Definition of the scope of projects with a procedural approach and based on UML. 2.4. Economic estimation of the project. 2.5. Project proposal. Binding Contract
- Unit 3. Implementation phase. Management, Quality & Service Levels. 3.1 Software quality in the context of project management. Measures of software quality. 3.2 Types and Techniques of Client Meetings. 3.3 Good practices in project management. 3.4 ITIL and Service Levels
- Unit 4. Managing a project's resources and risks . 4.1. Processes for managing the resources of a Software project . 4.2. Fundamentals of risk management in a SW project. Project audits.. 4.3. Techniques and tools
- Unit 5. Introduction to Configuration Management and Change Management. 5.1. Introduction to configuration management. 5.2. Change management. 5.3. User's adoption of the solution
- Unit 6. Process & Tool Management. 6.1. Basic practice with MS Project or similar on a case study. 6.2. Advanced practice with MS Project or similar on a case study

Year: <b>2nd</b>	Course code: <b>9840001206</b>	Course: <b>Discrete Mathematics</b> ( <i>Matemática discreta</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Number Theory
- Unit 2. Boole Algebra
- Unit 3. Set theory
- Unit 4. Relations. Recurrence Relationships
- Unit 5. Combinatorics
- Unit 6. Graph Theory

Year: <b>2nd</b>	Course code: <b>9840001207</b>	Course: <b>Statistical Inference</b> ( <i>Inferencia estadística</i> )	Program: <b>Bachelor's Degree in Mathematical</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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			<b>Engineering applied on Data Analysis</b>			
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 0. Introduction to Statistical Inference. 0.1. Surveys. 0.2. Difference between descriptive and inferential statistics.</li> <li>Unit 1. Probability. Sampling distributions. . 1.1. Discrete and continuous random variables in one and several variables. 1.2. Product random variable and quotient random variable.. 1.3. Moment generator function. 1.4. Gamma function and distribution. 1.5. Central limit theorem. Applications.</li> <li>Unit 2. Point estimation. 2.1. Estimators. Definition and properties. 2.2. Generation of point estimators. Method of moments. Maximum likelihood method. 2.3. Properties of point estimators. Bias and variance. Minimum variance estimators, bounds of Cramer-Rao. 2.4. Sufficiency. Consistency. 2.5. Introduction to Bayesian Estimation</li> <li>Unit 3. Parametric inference. 3.1. Confidence intervals and hypothesis tests. Definition and motivation. First examples: tests and confidence for the mean in normal populations, known variance. 3.2. Statistical significance, p-value. Types of errors.. 3.3. Intervals and tests for mean and variance. Chi-square distribution, Student's t. 3.4. Other tests and testing of hypotheses (proportions).</li> <li>Unit 4. Parametric inference for multiple samples.. 4.1. T-tests for two samples (difference in means, difference in proportions. 4.2. T-test in the case of paired samples. 4.3. Tests for the comparison of variances. Fisher-Snedecor F distribution.</li> <li>Unit 5. Nonparametric inference. 5.1. Multinomial distribution. 5.2. Model fit, chi-square goodness-of-fit test.. 5.3. Contingency tables. Independence and homogeneity tests. 5.4. Other non-parametric tests</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9840001208</b>	Course: <b>Computational Statistics</b> <i>(Estadística computacional)</i>	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Data Exploration Techniques (EDA). 1.1. Organizing and representing data, both one-dimensional and two-dimensional. 1.2. Machine learning algorithms.</li> <li>Unit 2. Simulation of probabilistic models. 2.1. Probabilistic modeling concepts. 2.2. Probability densities from a dataset.</li> <li>Unit 3. Computational Inference Techniques. 3.1. Basic computational inference techniques: Monte Carlo; techniques for data partitioning. 3.2. Problems of Classification</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9840001209</b>	Course: <b>Open Data project I</b> <i>(Proyecto de Open Data I)</i>	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Python programming fundamentals. 1.1. Variables, operators and functions. 1.2. Sequences, Lists, Dictionaries. 1.3. Files.. 1.4. Numpy Bookstore. 1.5. Pandas Bookstore. 1.5. Matplot Library</li> <li>Unit 2. Data cleansing.</li> <li>Unit 3. Data collection. 3.1. HTML, XML and JSON. 3.2. Apis</li> <li>Unit 4. Scrapy. 4.1. Scrapy Python. 4.2. Web scrapping.</li> <li>Unit 5. Visualization. 5.1. The process of visualization. 5.2. How to make a good visualization. 5.3. Visualization tools.</li> <li>Unit 6. Linked data and semantic web. 6.1. Semantic web. 6.2. RDF and SPARQL. 6.3. Ontologies.</li> <li>Unit 7. Security and privacy. 7.1. GDPR. 7.2. Data processing for privacy.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9840001210</b>	Course: <b>Open Dat project II</b> <i>(Proyecto de Open Data II)</i>	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Distributed systems. 1.1. Fundamentals of distributed systems. 1.2. Distributed DB systems with Python.</li> <li>Unit 2. Metadata and Apache Tika. 2.1. Metadata fundamentals. 2.2. Apache tika.</li> <li>Unit 3. Linked Open Data. 3.1. What is linked open data? 3.2. Applicability and use of linked data.</li> <li>Unit 4. Analysis Tools I. 4.1. Power BI.</li> <li>Unit 5. Analysis Tools II. 5.1. Google Looker.</li> </ul>						

- Unit 6 . Distributed computing. 6.1. Distributed computing, architecture. 6.2. Open CL. 6.3. MPI

3	9840001301	Liderazgo-emprendedor	Semestre 2 / Spring Term (Jan–Jun)		Español	6
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Year: <b>3rd</b>	Course code: <b>9840001302</b>	Course: <b>Strategic direction and Financial Analysis</b> ( <i>Dirección estratégica y Análisis Financiero</i> )	Program: <b>Bachelor´s Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Strategic direction.
- Unit 2. Strategic analysis.
- Unit 3. Dashboards.
- Unit 4. The financial activity of a company.
- Unit 5. Financial assets and resources. Financial management.
- Unit 6. Fundamentals of financial operations.
- Unit 7. Basic financial valuation concepts.
- Unit 8. Feasibility analysis.

Year: <b>3rd</b>	Course code: <b>9840001303</b>	Course: <b>Big Data Warehouse</b> ( <i>Almacenamiento masivo de datos</i> )	Program: <b>Bachelor´s Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Fundamentals of Big Data / Data Warehouse
- Unit 2. Big Data / Data Warehouse Architecture & Design
- Unit 3. Fundamentals of big data management.
- Unit 4. ETL
- Unit 5. Design and implementation of unconventional databases.
- Unit 6. Unconventional database design methodologies
- Unit 7. Query procedures in non-conventional databases.
- Unit 8. Hadoop Fundamentals

Year: <b>3rd</b>	Course code: <b>9840001304</b>	Course: <b>Machine Learning</b> ( <i>Aprendizaje Automático</i> )	Program: <b>Bachelor´s Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction. 1.1. Machine Learning Basics.
- Unit 2. Data Mining 2.1. Introduction to Data Mining. 2.2. ETL Process – Learning 2.3. Data Analysis, Profiling and Refinement. 2.4. RAPIDMINER
- Unit 3. Machine learning. 3.1. Supervised Learning. Techniques. 3.2. Unsupervised Learning. Techniques. 3.3. New Paradigms. Neural Networks and Reinforcement Learning

Year: <b>3rd</b>	Course code: <b>9840001305</b>	Course: Data Visualization ( <i>Visualización de datos</i> )	Program: <b>Bachelor´s Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Theoretical Foundations. 1.1. Data Visualization Theory. 1.2. Storytelling with data. 1.3. Visual Perception and Color Psychology. 1.4. The process of visualizing and exploiting data. 1.5. Types of charts and visualizations
- Unit 2: Cartographic Visualization – CART. 2.1. Map construction. 2.2. Cartographic analytics. 2.3. Use Cases



- Unit 3: Business Intelligence Tools. 3.1. Tableau: Basic Visualizations and Dashboards. 3.2. Power BI: Dashboards; Advanced Data Modeling; Integration with Big Data databases and external services
- Unit 4: Databases for dataViz: noSQL. 4.1. ElasticSearch. 4.2. Visualizations and dashboards with Kibana
- Unit 5: Programmatic Visualization. 5.1. Web programming: HTML, CSS, JS. 5.2. Specific programming languages for data visualization: D3.js; Leaflet.js

Year: <b>3rd</b>	Course code: <b>9840001306</b>	Course: <b>Statistical Programming Languages</b> ( <i>Lenguajes de programación estadística</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Statistical Language</li> <li>• Unit 2. Programming of statistical models</li> <li>• Unit 3. Fitting and Calculating Model Errors</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9840001307</b>	Course: <b>Multivariate regression Analysis</b> ( <i>Análisis de regresión multivariable</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Econometrics.</li> <li>• Unit 2. Linear regression model.</li> <li>• Unit 3. Analysis of variance.</li> <li>• Unit 4. Model adjustment and validation techniques.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9840001308</b>	Course: <b>Big Data Project I</b> ( <i>Proyecto de Big Data I</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Fundamentals of Big Data Projects.</li> <li>• Unit 2: Infrastructure design.</li> <li>• Unit 3: Data Acquisition Devices.</li> <li>• Unit 4: Big Data Development Environments (Real Time, Spark, Storm)</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9840001309</b>	Course: <b>Big Data Project II</b> ( <i>Proyecto de Big Data II</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Data traceability.</li> <li>• Unit 2: Integrity and Optimization of Stored Information</li> <li>• Unit 3: Machine Learning Environments for Data Analysis</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9840001310</b>	Course: <b>Big Data Project III</b> ( <i>Proyecto de Big Data III</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Business Tools for Data Visualization</li> </ul>						

Year: <b>4th</b>	Course code: <b>9840001401</b>	Course: <b>Business Information Systems</b> ( <i>Sistemas de información empresarial</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Origins and fundamentals of the Internet and ICTs
- Unit 2. Fundamentals Information Systems
- Unit 3. Strategies in Information Systems
- Unit 4. E-commerce and digital business
- Unit 5. CRMs
- Unit 6. ERPs & SCMs
- Unit 7. Business Processes and Business Intelligence
- Unit 8. Management of business innovation. Data & Knowledge
- Unit 9. Information Systems Infrastructures (Mobile Technologies, Resource Management, knowledge)
- Unit 10: Technological and Social Trends and Innovations in Information Systems

Year: <b>4th</b>	Course code: <b>9840001402</b>	Course: <b>Economics and Digital Marketing</b> ( <i>Economía y marketing digital</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Principles of Economics and Digital Marketing
- Unit 2. Marketing in the company. Strategic & Operational Marketing
- Unit 3. SEO & SEM
- Unit 4. Internet business models.
- Unit 5. Adaptation of a business model to the markets.

Year: <b>4th</b>	Course code: <b>9840001403</b>	Course: <b>Virtualization and security</b> ( <i>Virtualización y seguridad</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Fundamentals of virtualization and security.
- Unit 2: Strategies for safeguarding information
- Unit 3: Distributed architectures
- Unit 4: RAID systems (Redundant array of independent disks)
- Unit 5: Hardware devices to ensure continuity of service
- Unit 6: Cloud Computing

Year: <b>4th</b>	Course code: <b>9840001404</b>	Course: <b>Security and professional Legislation</b> ( <i>Seguridad y Legislación profesional</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Security Fundamentals
- Unit 2: Safety Management Systems
- Unit 3: Risk analysis
- Unit 4: Introduction to Legislation.
- Unit 5: Data protection regulations
- Unit 6: Privacy management
- Unit 7: Risk management

Year: <b>4th</b>	Course code: <b>9840001405</b>	Course: <b>Applications and Trends of Data Analytics</b> ( <i>Aplicaciones y Tendencias del análisis de datos</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Top Trends. 1.1. Industry 4.0. 1.2. Society 5.0. 1.3. IoT. 1.4. Smartcities</li> <li>Unit 2: Rising Technologies and Trends. 2.1. Data Ethics. 2.2. Blockchain. 2.3. Other</li> <li>Unit 3: Case Study</li> </ul>						

Year: <b>4th</b>	Course code: <b>9840001406</b>	Course: <b>Panel Data Analysis</b> ( <i>Estudio de datos de panel</i> )	Program: <b>Bachelor's Degree in Mathematical Engineering applied on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Descriptive techniques of multivariate analysis.</li> <li>Unit 2. Inferential procedures based on the multivariate normal.</li> <li>Unit 3. Time series.</li> <li>Unit 4. Merged Data and Panel Data Models.</li> </ul>						

## Bachelor's Degree in Civil Engineering (*Grado en Ingeniería Civil*) (Spanish)

1	9954002101	Cálculo I	Semestre 1 / Fall Term (Sept–Jan)	Español	6
1	9954002102	Cálculo II	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9954002103	Fundamentos Físicos de la Ingeniería	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9954002104	Sistemas de Representación Y DAO	Semestre 1 / Fall Term (Sept–Jan)	Español	9
1	9954002105	Geología	Semestre 1 / Fall Term (Sept–Jan)	Español	9
1	9954002106	Álgebra y estadística	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9954002107	Mecánica de estructuras	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9954002108	Química de materiales	Semestre 1 / Fall Term (Sept–Jan)	Español	6
1	9954002109	Taller de proyectos: modelado 3d en bim	Semestre 2 / Spring Term (Jan–Jun)	Español	6

Year: <b>2nd</b>	Course code: <b>9954002201</b>	Course: <b>Mathematical models in Engineering</b> ( <i>Modelos matemáticos en ingeniería</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 0. Previous basic notions</li> <li>Unit 1. First-Order Ordinary Differential Equations</li> <li>Unit 2. Ordinary Differential Equations of Order N</li> <li>Unit 3. Systems of Ordinary Differential Equations</li> <li>Unit 4. Dynamic Systems</li> <li>Unit 5. Laplace Transform</li> <li>Unit 6. Fourier series.</li> </ul>						

- Unit 7. Partial Differential Equations: Equations of Mathematical Physics: Wave Equation, Heat Equation, Laplace's Equation. Analytical Methods: Separation of Variables. Methods of Integral Transforms: Fourier transform.
- Unit 8. Analysis of variance

Year: <b>2nd</b>	Course code: <b>9954002202</b>	Course: <b>Business Management</b> <i>(Gestión de empresas)</i>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. The company. The Entrepreneur</li> <li>• Unit 2. The administrative process and planning.</li> <li>• Unit 3. The organizational function of the company. Management &amp; Control</li> <li>• Unit 4. Production</li> <li>• Unit 5. Introduction to Marketing</li> <li>• Unit 6. Financial subsystem</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9954002203</b>	Course: <b>Fluid Physics and Hydraulics</b> <i>(Física de fluidos e hidráulica)</i>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1- Basic principles. General fluid equations. 1.1. Introduction and properties of fluids.. 1.2. Water compressibility. Elastic modulus. 1.3. Atmospheric, local and gauge pressure.</li> <li>• Unit 2- Hydrostatic. 2.1. General Principles of Hydrostatics. 2.2. Hydrostatic pressure. 2.3. Flotation</li> <li>• Unit 3- Hydrodynamics. Open channel hydraulics. 3.1. Basic principles of free-film flow. 3.2. Uniform flow with continuous and localized losses. 3.3. Gradually varied regimen. Backwater curves. 3.4. Hydraulic overhang.</li> <li>• Unit 4- Hydrodynamics. pressure pipe hydraulics. 4.1. Continuous and localized pressure drops. 4.2. Hydraulic machines and cavitation. 4.2. Branched and meshed piping systems. 4.3. Transients in pipes.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9954002204</b>	Course: <b>Topography and Skating out</b> <i>(Topografía y replanteos)</i>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Application of geodesy concepts and cartographic projections: analog and Digital interpretation.</li> <li>• Unit 2. Digital topographic models.</li> <li>• Unit 3. The photogrammetric project.</li> <li>• Unit 4. Surveying methods and instruments. Application of altimetry methods. Tachymetry and polygonation.</li> <li>• Unit 5. Layout of works.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9954002205</b>	Course: <b>Soil &amp; Rock Mechanics</b> <i>(Mecánica de suelo y rocas)</i>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Terrain reconnaissance</li> <li>• Unit 2. Soil mechanics. 2.1. Soil formation and composition. 2.2. Basic properties of soils . 2.3. Soil classification. 2.4. Mechanical behaviour of soils. Compaction, strength, stresses and Deformations in the ground . 2.5. Water flow in the ground</li> <li>• Unit 3. Rock mechanics. 3.1. Classification of rocks. 3.2. Discontinuities in rock massifs. 3.3. The Matrix Rock. 3.4. Behaviour of the rock mass. 3.5. The rock massif</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9954002206</b>	Course: <b>Materials resistance</b> <i>(Resistencia de materiales)</i>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Analysis of the Concept of the Deformable Solid Linked to Real Tensile-Deformational Behavior of the materials. 1.1. Stress-strain diagram and mechanical properties of materials. 1.2. Stress tensor and strain tensor. 1.3. Main stresses and strains. 1.4. Maximum tangential stresses and strains. 1.5. Analytical and graphical methods (Mohr's circle) and breakage criteria.</li> </ul>						

- Unit 2. Development of the basic principles that relate the actions and movements of structures to through sectional behavior. 2.1. Introduction to the concept, design and structural analysis. 2.2. Boundary elements and conditions, fundamental assumptions, overlap. 2.3. Basics of Material Strength. 2.4. Mechanical characteristics. 2.5. Balance of isostatic structures, hyperstatism, symmetry and antimetry, etc. 2.6. Stresses and strains. 2.7. Calculation of normal stresses, deformations and curvature. 2.8. Central core and deflection swerved. 2.9. Calculation of tangential stresses and shear stress centres. 2.10. Homogenization of sections made of different materials.
- Unit 3. Methods of calculating simple structures composed of one-dimensional elements. 3.1. Calculation of stress and stress laws. 3.2. Basic structures I. Beams. 3.3. Basic structures II. Arches (curved guideline) and porticoes. 3.4. Basic structures III. I-bar structures (axial forces). Warp energy. 3.5. Basic structures IV. Bar Structures II. 3.6. Calculation of normal voltages I. 3.7. Calculation of normal voltages II. Deflected bending. Homogenization. Thermal stresses. 3.8. Calculation of tangential stresses I. Shear and flaw. 3.9. Calculation of tangential stresses II. Torsion. Center of shear stresses. 3.10. Calculation of movements. Mohr's theorems.
- Unit 4. Dynamic analysis. Application to earthquake-resistant construction. 4.1. Introduction to the fundamental concepts of structural dynamics applied to buildings seismic resistant. 4.2. Modal overlap method and application.

Year: <b>2nd</b>	Course code: <b>9954002207</b>	Course: <b>Structures Analysis (<i>Análisis de estructuras</i>)</b>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Extension of the Principles and Method Outlined in Strength of Materials to the Analysis of complex structures. 1.1. Structural typologies. 1.2. Articulated and lattice structures. Types. Stability. 1.3. Load mixing. Types of loads. Regulations applied. 1.4. Articulated and lattice structures. Calculation of stresses using the knot and knot method compatibility. 1.5. Articulated structures and the Virtual Work Method. 1.6. Reticulated structures. Hyperstatic. 1.7. Buckling and warping. 1.8. Other typologies: arches and funiculars. 1.9. Plastic calculation in articulated structures. 1.10. Plastic calculation in lattice structures.
- Unit 2. Study of matrix methods for their application to the calculation of lattice structures and Articulated. 2.1. Elementary stiffness matrices. 2.2. Fundamentals of matrix calculus. 2.3. Traditional calculation methods. 2.4. Finite elements. General concepts and practical application to articulated and lattice structures.
- Unit 3. Modelling of real structures. Knowledge of the use of IT tools calculation. 3.1. Modelling of structures with 2D and 3D bars. 3.2. Modelling of structures with sheet elements. 3.3. Practical applications.

Year: <b>2nd</b>	Course code: <b>9954002208</b>	Course: <b>Project Workshop: linear construction (<i>Taller de proyectos: obra lineal</i>)</b>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Treatment of territorial aspects in the definition of the route. 1.1. Generation of territorial models in the identification of project alternatives: Assessment of reception capacity. 1.2. Generation of topographic models. 1.3. Treatment of hydrological aspects in the definition of the route.
- Unit 2. Design of a linear construction. 2.1. Geometric definition of the linear construction layout. 2.2. Definition of drainage elements. 2.3. Definition and pre-dimensioning of structures. 2.4. Design and integration of parameterizable construction elements.
- Unit 3. Integration of BIM models.

Year: <b>2nd</b>	Course code: <b>9954002209</b>	Course: <b>Computational Numerical Calculation (<i>Cálculo numérico computacional</i>)</b>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction. Errors
- Unit 2. Numerical methods of solutions of nonlinear equations.
- Unit 3. Systems of Linear Equations
- Unit 4. Interpolation and curve fitting. Regression Models
- Unit 5. Numerical Derivation and Integration
- Unit 6. Numerical Methods for Ordinary Differential Equations
- Unit 7. Numerical Methods for Partial Differential Equations. Introduction to the Finite Elements

Note: Computer application for programming numerical methods in all of the above topics type Matlab.

Year: <b>2nd</b>	Course code: <b>9954002210</b>	Course: <b>Transport infrastructure I</b> ( <i>Infraestructura del transporte I</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Road networks. 1.1. Track elements . 1.2. Types of routes . 1.3. Road planning . 1.4. Road maintenance. 1.5. Road administrations. 1.6. Vehicles
- Unit 2. Layout. 2.1. Definitions. Key Parameters: Speed and Visibility. 2.3. Layout Instruction: Plan and Elevation. 2.4. Solution optimisation and desig . 2.5. Cross-section. 2.6. Knots and intersections
- Unit 3.-Traffic. 3.1. Definitions . 3.2. Relationships of variables. 3.3. Capacity and Service Levels. 3.4. Knots and intersections
- Unit 4. Earthworks. 4.1. Geotechnical problems on roads. 4.2. Geological and geotechnical studies and surveys. 4.3. Classification of soils and rocks. 4.4. Soil compaction and bearing capacity. 4.5. Establishment of earthworks. 4.6. Formation of esplanades. Soil stabilization.
- Unit 5. Pavements and pavements. 5.1. Constitution of pavements. 5.2. Granular materials. 5.3. Treated layers . 5.4. Surface treatments. 5.5. Binders. 5.6. Bituminous mixtures. 5.7. Concretes. 5.8. Dimensioning of the pavement layers according to the Instruction
- Unit 6. Drainage, signage and other elements. 6.1. Drainage . 6.2. Signage

Year: <b>2nd</b>	Course code: <b>9954002211</b>	Course: <b>Computer Science</b> ( <i>Informática</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit-1: Introduction to Computers
- Unit-2: Representation of Information
- Unit-3: Introduction to Matlab
- Unit-4: Introduction to Databases

Year: <b>3rd</b>	Course code: <b>9954002301</b>	Course: <b>Concrete and metal Structures</b> ( <i>Estructuras de hormigón y metálicas</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Basic concepts of the behavior of concrete and steel materials. 1.1. Relevant Works and Engineers. 1.2. Introduction to current regulations. 1.3. Combination of actions. 1.4. Characteristics of the materials.
- Unit 2. Testing and dimensioning of reinforced and prestressed concrete structures, metallic and mixed. 2.1. Cranks and seatstays. 2.2. Durability, coatings, and material properties. . 2.3. ELU of Exhaustion against Normal Stresses I. 2.4. ELU of Exhaustion against Normal Stresses II. Flexural Test in the Laboratory II. 2.5. ELU Cutting I. 2.6. ELU Shear II, grade and punching shear. 2.7. ELU Balance, ELU Torsion. 2.8. ELU Instability and Buckling. Buckling Test in the Laboratory. 2.9. ELS Fissuring and ELU adhesion. 2.10. Sustainability, rehabilitation and reuse. 2.11. Classification of metal sections, Effective width. 2.12. Bending and Shear in metal structures. 2.13. Calculation of compressive metal structures
- Unit 3. Knowledge of Spanish and European regulations relating to the calculation, verification and Design of reinforced and prestressed concrete, metal and composite structures.
- Unit 4. Sustainability in the field of structures. Rehabilitation. Recycling and reuse.

Year: <b>3rd</b>	Course code: <b>9954002302</b>	Course: <b>Construction Machinery &amp; Electrical Installations</b> ( <i>Maquinaria de construcción e instalaciones eléctricas</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Construction procedures. 1.1. Corridors. 1.2. Ports & Coasts. 1.3. Building
- Unit 2. Machinery and auxiliary equipment. 2.1. Earthworks, tunneling. 2.2. Manufacture and installation of asphalt agglomerate and concrete. 2.3. Other Machinery
- Unit 3. Construction typology. 3.1. Work Units. 3.2. Comprehensive management of available resources. 3.3. Optimized planning of activities.
- Unit 4. Electrical installations in construction. 4.1. Electricity Basics. 4.2. Structure of the electricity system (generation, transformation, transmission, distribution, system loads) electrical). 4.3. Low and High Voltage Regulations

- Unit 5. Electrical Distribution Networks. 5.1. Low-voltage distribution networks. 5.2. Calculation and design of electrical installations: loads, conductors, protection systems, electrical switchgear
- Unit 6. Electricity Rates & Lighting. 6.1. Electricity pricing. 6.2. Lighting systems. 6.3. Electrical project.

Year: <b>3rd</b>	Course code: <b>9954002303</b>	Course: <b>Transport infrastructure II</b> ( <i>Infraestructura del transporte II</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Railways. 1.1. Introduction to Rail Transport. 1.2. Track Structure. 1.3. Mechanics of the Track. 1.4. Layout and Geometry of the Route. 1.5. Railway Dynamics. 1.6. Railway Facilities. 1.7. The Life Cycle of Railway Infrastructure.</li> <li>• Unit 2. Roads. 2.1. Firm and Esplanades. 2.2. Maintenance and operation of roads</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9954002304</b>	Course: <b>Foundations (Cimentaciones)</b>	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Compressibility of soils. Consolidation Theory. 1.1. Consolidation Phenomenon. 1.2. Stress-strain ratio. 1.3. Classification of soils according to their consolidation. 1.4. Clay consolidation processes. 1.5. Edometric module. Edometric test. 1.6. Terzaghi's Consolidation Theory</li> <li>• Unit 2. Surface Foundations. 2.1. Classification of foundations; Rigid and flexible. 2.2. Concept of Boundary States. 2.3. Calculation of ELU of Sinking, Slipping and Overturning. 2.4. Calculation of seats in footings.. 2.6. Foundation slabs. Classification and design.</li> <li>• Unit 3; Slope and slope stability. 3.1. Characterization of movements. 3.2. Investigation and control procedures. 3.3. Stability analysis models; Flat and circular fault. 3.4. Stereographic projections. 3.5. Prevention, stabilization and design</li> <li>• Unit 4. Deep Foundations. 4.1. Classification and typology. 4.2. Design and calculation. Resistance by tip and shaft.. 4.3. Special requests. 4.4. Auxiliary elements</li> <li>• Unit 5. Containment structures. 5.1. Classification of containment structures. 5.2. Thrust Concept. Coulomb and Rankine Methods. 5.3. Rigid structures. Design &amp; Calculation. 5.4. Flexible structures. Continuous concrete walls. Calculation and design. 5.5. Anchoring elements.</li> <li>• Unit 6. Ground improvement and reinforcement . 6.1. Classification and definition. 6.2. Soil improvement treatments: dynamic compaction, preloading, drainage, etc. 6.3. Soil reinforcement treatments: ground injections, grouts, resins, jet-grouting, consolidation, offsetting, deep soil mixing, etc.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9954002305</b>	Course: <b>Territorial and urban Planning</b> ( <i>Ordenación del territorio y urbanismo</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Legal framework for territorial planning.</li> <li>• Unit 2. Methodologies for territorial analysis and valuation. Ordering Models and Integration Methods of information.</li> <li>• Unit 3. Approach to the territorial model to be achieved. Zoning. Regulatory development.</li> <li>• Unit 4. Urban planning. Urban planning regulations. Soil classification.</li> <li>• Unit 5. Execution of planning. Actuation systems. Urban morphology. Urban services.</li> <li>• Unit 6. Preparation of planning documents.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9954002306</b>	Course: <b>Maritime &amp; Coastal Engineering</b> ( <i>Ingeniería marítima y costera</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Sea swings . 1.1. Generation of wind waves. Linear wave theory. General Equations and theoretical solutions. Indefinite and reduced transition depth. Abacus of Kinsmann and Le Méhauté. 1.2. Waves. 1.3. Description of the waves. Relationships between wave heights. 1.4. Statistical procedures. Irregular Waves Description of the wave frequency. Fourier's theorem. 1.5. Wave modifications. Propagation, transformation and extinction. Refraction diffraction and breakage. Methods of observation and prediction or estimation. 1.6. Databases. Wave data on the Spanish coast. ROM Program. 1.7. Mathematical and Physical Models. 1.8. Tides. Astronomical tide. Harmonic components. Weather tide. Wave configuration.</li> </ul>						

- Unit 2. Marine works. 2.1. Ports. 2.2. Maritime works. 2.3. Sloped dikes. Vertical dikes. Elements. 2.4. Docks. Duques of Alba. Floating drawers. 2.5. Design of marine works. Description of ROM 2.0, ROM 3.0. 2.6. Submarine outfalls. 2.7. Dredging. 2.8. Construction of marine works: Sloped dikes. Vertical dikes. Docks
- Unit 3. Coastal engineering . 3.1. Sediment transport. 3.2. Sediment balance and morphodynamic evolution.. 3.3. Coastal forms.. 3.4. Coastal erosion and deposition. 3.5. Bays. Silvester, Hsu & Evans and Tan & Chiew criteria. 3.6. Tools in Coastal Engineering. 3.7. Mathematical and Physical Models. 3.8. CMS Flow

Year: <b>3rd</b>	Course code: <b>9954002307</b>	Course: <b>Project Workshop: Structures</b> ( <i>Taller de proyectos: estructuras</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Analysis of the constraints that the problem imposes on the selection of the structural typology adequate. Conceptual design.
- Unit 2. Calculation bases.
- Unit 3. Pre-dimensioning.
- Unit 4. Structural modelling and dimensioning.
- Unit 5. Construction details.
- Unit 6. Particular aspects of the structures in the Project documents.
- Unit 7. Structural project management in BIM

Year: <b>3rd</b>	Course code: <b>9954002308</b>	Course: <b>Buildings and building services</b> ( <i>Edificación e instalaciones</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Functions and parts of the building. Technical Regulations (CTE, RITE, ITC) . 1.1 Agents involved in the building. 1.2 The Technical Building Code. Analogous international reference standards. 1.3 Functions and parts of the building
- Unit 2. Building structures: foundations, retaining and basement walls, slab structures, masonry load-bearing walls, made of concrete (prefabricated, rationalized solutions). 2.1 Structural safety and ETC. 2.2 Structural approach to the building. 2.3 Floor slabs. 2.4 Frames and trusses. 2.5 Building foundations. 2.6 Retaining Walls, Basement Walls and Walls in Buildings. 2.7 Industrial building. 2.8 Concrete screeds
- Unit 3. Enclosures and finishes. Thermal, acoustic, and fire conditions. Facades partitions, carpentry. Roofs, cladding . 3.1 Construction solutions for enclosures
- Unit 4. Installation systems that affect the building. 4.1 Domestic cold water and DHW. 4.2. Sanitation. 4.3. Ventilation and air conditioning. 4.4. Electrical installations

Year: <b>3rd</b>	Course code: <b>9954002309</b>	Course: <b>Hydraulic works and exploitation</b> ( <i>Obras y aprovechamientos hidráulicos</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction
- Unit 2. Hydraulic planning
- Unit 3. Precipitation. Evapotranspiration. Runoff. Construction of avenues
- Unit 4. Avenues. Regulation. Concept of warranty. Lamination
- Unit 5. Regulation works. Dams
- Unit 6. Channels in free regime
- Unit 7. Pressure pipes. Hydroelectric Power Plants
- Unit 8. Underground catchments

Year: <b>3rd</b>	Course code: <b>9954002310</b>	Course: <b>Transport Engineering Workshop</b> ( <i>Taller de ingeniería de transportes</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Conveyor system. Transport and spatial planning. Transport policies.
- Unit 2. Planning levels. Sectoral, comprehensive and strategic planning. Social evaluation. Financing and transportation management.



- Unit 3. Uses and limits of modelling in planning. Transport Operating Models.
- Unit 4. Development of transport planning models

Year: <b>4th</b>	Course code: <b>9954002401</b>	Course: <b>Environmental Impact Evaluation</b> ( <i>Evaluación de impacto ambiental</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Environmental Impact Assessment as an administrative procedure. 1.1. Concept and nature of the Environmental Impact Assessment. 1.2. Situation and perspective of EIA regulations in Spain. Outline of the procedure.. 1.3. The importance of the early stages of the EIA process. 1.4. Structure and functions of the environmental impact study. 1.5. The role of public participation in the EIA process. 1.6. Influence of EIA. The environmental decision about the project. 1.7. Post-project evaluation: monitoring of environmental impacts.
- Unit 2. The Environmental Impact Study. 2.1. Definition of the project and its actions. . 2.2. The environment in environmental impact studies. Inventory and analysis. 2.3. Identification and assessment of environmental impacts. Assessment of environmental impacts: magnitude and significance of impact. 2.4. Environmental impact assessment techniques. Predictive procedures. 2.5. Treatment of uncertainties in the environmental impact study. 2.6. Reduction and elimination of environmental impacts. Types of measures. Criteria for your definition. 2.7. Elements for the development of an environmental monitoring program.

Year: <b>4th</b>	Course code: <b>9954002402</b>	Course: <b>Health and Safety</b> ( <i>Seguridad y salud</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1.- Basic concepts of occupational Health and Safety
- Unit 2.- Minimum health and safety conditions in the health and safety sector construction
- Unit 3.- Basic elements of prevention management and its application to construction sites
- Unit 4.- General risks and their prevention
- Unit 5.- Specific risks and their prevention in the construction sector
- Unit 6.- First aid

Year: <b>4th</b>	Course code: <b>9954002403</b>	Course: <b>Water supply and sanitation</b> ( <i>Abastecimiento y saneamiento</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 – Water collection systems.. 1.1. Water resources. General information.. 1.2. Types of water on the ground.. 1.3. Areas of the land according to the type of water they contain. 1.4. Land classification.. 1.5. Types of aquifers.. 1.6. Groundwater prospecting methods. 1.7. Surface water harvesting. 1.8. Groundwater harvesting. 1.9. Groundwater exploitation
- Unit 2 – Design, construction and operation of reservoirs and distribution networks. Basics of Drinking water treatment. 2.1. Drinking Water Treatment Basics. 2.2. Design, construction and operation of tanks. 2.3. Design, construction and operation of distribution networks.
- Unit 3 - Design, construction and operation of sewerage and sanitation networks. Basics wastewater treatment.. 3.1. Design, construction and operation of sewerage and sanitation networks. 3.2. Basic aspects of wastewater treatment.

Year: <b>4th</b>	Course code: <b>9954002404</b>	Course: <b>Organization and management of projects and works</b> ( <i>Organización y gestión de proyectos y obras</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Projects. 1.1. The Life Cycle of a project. 1.2. Project Documents.
- Unit2. Contracting. 2.1. The Administrative Contract.
- Unit 3. Works. 3.1. Construction management and management. 3.2. Time, cost and quality management. 3.3. Safety and environmental management.
- Unit 4. BIM. 4.1. BIM Methodology. 4.2. BIM Projects. 4.3. BIM model and project management

Year: <b>4th</b>	Course code: <b>9954002405</b>	Course: <b>History, practice and professional ethics</b> ( <i>Historia, ejercicio y deontología profesional</i> )	Program: <b>Bachelor's Degree in Civil Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. History of engineering, in its field.</li> <li>Unit 2. Ways of exercising the profession, in your field. Organization and structure of companies from a from an ethical point of view. Engineering deontology.</li> <li>Unit 3. On-the-ground knowledge of emblematic works and the history of civil engineering in its Different areas</li> </ul>						

## Bachelor's Degree in System Engineering (*Grado en Ingeniería en Sistemas Industriales*) (Spanish)

<b>1</b>	<b>9834002101</b>	<b>Cálculo-I</b>	<b>Semestre 1 / Fall Term</b> (Sept–Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9834002102</b>	<b>Fundamentos de Informática para la Ingeniería</b>	<b>Semestre 1 / Fall Term</b> (Sept–Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9834002103</b>	<b>Expresión Gráfica para la Ingeniería</b>	<b>Semestre 1 / Fall Term</b> (Sept–Jan)		<b>Español</b>	<b>6</b>

Year: <b>1st</b>	Course code: <b>PANS001104</b>	<b>Ethics and Professional Efficiency</b> ( <i>Ética y Eficacia Profesional</i> )	Program: <b>Bachelor's Degree in Systems Engineering. Mechanical specialty 100% English</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
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Year: <b>1st</b>	Course code: <b>9834002104</b>	<b>Ethics and Professional Efficiency</b> ( <i>Ética y Eficacia Profesional</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Ethical approaches in the different professional activity fields</li> <li>Unit 2. Autonomous learning and self regulation in personal life and professional practice</li> <li>Unit 3. Keys to the organization and management teamwork</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC20. Know the basics of Business ethics</li> </ul>						

<b>1</b>	<b>9834002105</b>	<b>Química para la Ingeniería</b>	<b>Semestre 2 / Spring Term</b> (Jan–Jun)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9834002106</b>	<b>Álgebra</b>	<b>Semestre 1 / Fall Term</b> (Sept–Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9834002107</b>	<b>Ciencia de los Materiales</b>	<b>Semestre 2 / Spring Term</b> (Jan–Jun)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9834002108</b>	<b>Cálculo-II</b>	<b>Semestre 2 / Spring Term</b> (Jan–Jun)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9834002109</b>	<b>Física-Mecánica</b>	<b>Semestre 1 / Fall Term</b> (Sept–Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9834002110</b>	<b>Proyecto Integrador: Física Electromagnética</b>	<b>Semestre 2 / Spring Term</b> (Jan–Jun)		<b>Español</b>	<b>6</b>

Year: <b>2nd</b>	Course code: <b>9834002201</b>	Course: <b>Statistics for Engineering</b> ( <i>Estadística para Ingeniería</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Descriptive Statistics</li> </ul>						

- Unt 2. Probability
- Unit 3. Inferential statistics

**Specific competencies:**

- SC1: Ability to solve mathematical problems that may set out in engineering. Ability to apply knowledge about: linear algebra; geometry; differential geometry; differential and integral calculation; differential and partial derivatives equations; numerical methods; numerical algorithms; statistics and optimization.

Year: <b>2nd</b>	Course code: <b>9834002202</b>	Course: <b>Relational Impact and Influence</b> <i>(Impacto e Influencia Relacional)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Communication in the professional environment
- Unit 2. Emotional intelligence in personal relationships
- Unit 3. The success of change: the ability to adjust

**Specific competencies:**

- SC20. Know the basics of business ethics and social and corporate responsibility of the company.

Year: <b>2nd</b>	Course code: <b>9834002203</b>	Course: <b>Circuit Theory and Electrical Machines</b> <i>(Teoría de Circuitos y Máquinas Eléctricas)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Fundamental Concepts and Magnitudes of Electrical Circuits
- Unit 2. Methods of Analysis of Alternate Circuits
- Unit 3. Alternate Single and Three Phase Systems
- Unit 4. Electric machines

**Specific competencies:**

- CE10. Knowledge and use of principles of circuit theory and electrical machines.

Year: <b>2nd</b>	Course code: <b>9834002204</b>	Course: <b>Integrated Project: Theory of Machines and Mechanisms</b> <i>(Proyecto Integrador: Teoría de Máquinas y Mecanismos)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Introduction to machines and their components
- Unit 2. Kinematics and dynamics
- Unit 3. Passive resistance. Tribology. Wear. Lubrication
- Unit 4. Rigid transmitting elements. Cams, eccentrics and gears.
- Unit 5. Gears. Spur gear trains.
- Unit 6. Springs. Shock absorbers.
- Unit 7. Shafts design. Flywheels and keys

**Specific competencies:**

- SC13. Knowledge of principles of machine and mechanisms theory.

Year: <b>2nd</b>	Course code: <b>9834002205</b>	Course: <b>Fundamentals of Business Organization</b> <i>(Fundamentos de Organización de Empresas)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. The company. The businessman and the entrepreneur
- Unit 2. The administrative process and planning
- Unit 3. The organization of the company
- Unit 4. People management and control
- Unit 5. Operations
- Unit 6. Marketing
- Unit 7. The company's financial system

**Specific competencies:**

- SC6. Adequate knowledge of the concept of company, institutional and legal framework of the company. Organization and management of companies.
- SC15. Basic knowledge of production and manufacturing systems.
- SC16. Basic knowledge and application of environmental technologies and sustainability.
- SC17. Applied knowledge of business organization.
- SC19. Applied knowledge of Quality and Environmental Management Systems.

Year: <b>2nd</b>	Course code: <b>9834002206</b>	Course: <b>Electronic Fundamentals</b> <i>(Fundamentos de Electrónica)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Introduction to electronics. Semiconductor devices
- Unit 2. Electronic and optoelectronic devices. Biasing circuitry
- Unit 3. Introduction to digital electronics. Logic families
- Unit 4. Sequenced and combinational circuits

**Specific competencies:**

- SC11. Knowledge of fundamentals of electronics.

Year: <b>2nd</b>	Course code: <b>9834002207</b>	Course: <b>Integrated Project: Automation and Control</b> (Proyecto integrador: Automatismos y Control)	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Automation Pyramid
- Unit 2. Control systems' basic instrumentation
- Unit 3. Signals and systems
- Unit 4. Introduction to the control and regulation systems

**Specific competencies:**

- SC12 Knowledge of the fundamentals of automatism and control methods.

Year: <b>2nd</b>	Course code: <b>9834002208</b>	Course: <b>Thermodynamics and Heat Transfer</b> <i>(Termodinámica y Transmisión de Calor)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Laws of Thermodynamics. Mass, energy and entropy balances
- Unit 2. Gas and liquid properties. Change of state
- Unit 3. Heat-transfer processes: conduction, convection and radiation

**Specific competencies:**

- SC7. Knowledge of applied thermodynamics and heat transmission. Basic principles and their application to solving engineering problems.

Year: <b>2nd</b>	Course code: <b>9834002209</b>	Course: <b>Fluid Mechanics</b> ( <i>Mecánica de Fluidos</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Basic principles of fluid mechanics. Incompressible fluids. Applications
- Unit 2. Fluid statics: incompressible fluids with steady flow
- Unit 3. Pipes
- Unit 4. Hydrodynamic resistance. Boundary layer
- Unit 5. Unsteady flow

**Specific competencies:**

- SC8 Knowledge of the basic principles of fluid mechanics and their application to solving problems in the field of engineering. Calculation of pipes, channels and fluid systems.

Year: <b>2nd</b>	Course code: <b>9834002210</b>	Course: <b>Business Organization and Industrial Production Systems</b> ( <i>Organización de Empresas y Sistemas de Producción Industrial</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. The Operations Department</li> <li>Unit 2. Organization of Production</li> <li>Unit 3. Process Design</li> <li>Unit 4. Production plant</li> <li>Unit 5. Study of methods. Productivity</li> <li>Unit 6. Supplies. Inventory management</li> <li>Unit 7. Production logistics. Requirements Planning</li> <li>Unit 8. Flow management</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC15. Basic knowledge of production and manufacturing system</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002301</b>	Course: <b>Elasticity and Resistance of Materials I</b> ( <i>Elasticidad y Resistencia de Materiales</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Elastic-solid general theory. Principles and key concepts.</li> <li>Unit 2. Two-dimensional and three-dimensional elasticity. Plain stress and strain. Tensional state. Stress matrix. Mohr's circle</li> <li>Unit 3. Combined mechanical stress.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC14. Knowledge and use of principles of resistance of materials.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002302</b>	Course: <b>Total Quality and Environmental Management</b> ( <i>Calidad Total y Gestión Medioambiental</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Historical evolution of quality.</li> <li>Unit 2. Customer satisfaction process: customer and supplier vision.</li> <li>Unit 3. Total quality management tools.</li> <li>Unit 4. ISO quality policies.</li> <li>Unit 5. Total quality management.</li> <li>Unit 6. Basic concepts of environmental pollution.</li> <li>Unit 7. Environmental legislation.</li> <li>Unit 8. Environmental assessment.</li> <li>Unit 9. Atmospheric, water and waste treatment technology.</li> <li>Unit 10. Environmental management.</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>SC16. Basic knowledge and application of environmental technologies and sustainability.</li> <li>SC19. Applied knowledge of Quality and Environmental Management Systems.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002303</b>	Course: <b>Projects and Legislation</b> ( <i>Proyectos y Legislación</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Project planning</li> <li>Unit 2. Budget</li> <li>Unit 3. Project documentation</li> <li>Unit 4. Project follow-up and management</li> <li>Unit 5. Environmental risk study</li> </ul> <b>Specific competencies:</b>						

- SC18. Knowledge and capabilities to organize and manage projects. Know the organizational structure and functions of a project office.

Year: <b>3rd</b>	Course code: <b>9834002304</b>	Course: <b>Entrepreneurial Leadership</b> ( <i>Liderazgo Emprendedor</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Keys to leadership</li> <li>• Unit 2. Proactive thought and the entrepreneurial spirit</li> <li>• Unit 3. Complex organizations: balancing the domestic and the universal</li> <li>• Unit 4. Local, national and international legislation</li> <li>• Unit 5. Economic and financial aspects of an organization</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002801</b>	Course: <b>Thermal power plants</b> ( <i>Centrales Térmicas</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialties of Mechanical Eng. (M) and Energy Eng. (E)						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Vapor power cycles: simple cycles</li> <li>• Unit 2. Improvement in the vapor power cycles performance: complex cycles</li> <li>• Unit 3. Gas power cycles: simple cycle</li> <li>• Unit 4. Improvement in the gas power cycles performance: complex cycles</li> <li>• Unit 5. Combined cycle</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC_M16 Capacity for the Design, Control and Maintenance of Thermal Power Plants</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002802</b>	Course: <b>Technology of Materials</b> ( <i>Tecnología de Materiales</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Automotion Eng. (A)						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Materials selection</li> <li>• Unit 2. Processing and formation techniques</li> <li>• Unit 3. Bonding technologies</li> <li>• Unit 4. In-service behavior</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC_A8 Knowledge and skills for the application of materials engineering.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002803</b>	Course: <b>Integrated Project: Manufacturing Processes I</b> ( <i>Proyecto Integrador: Procesos de Fabricación I</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialties of Mechanical Eng. (M), Automotion Eng (A), Industrial Organization Eng (OI) and Industrial Technology Eng (T)						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to manufacturing processes. Workflow management and production volume. Tolerances</li> <li>• Unit 2. Manufacturing costs and non-manufacturing costs. Cost analysis and budgets. Productive and non-productive time</li> <li>• Unit 3. Manufacturing Quality. Definition. Quality Control and quality assurance. Continuous processes improvement. Quality tools. Metrology</li> <li>• Unit 4. Metal Forming and Sheet Metalworking. Bulk deformation processes in metalworking, plastic deformation</li> <li>• Unit 5. Joining and Assembly Processes. Joint Technology. Permanent joint and temporary joint</li> <li>• Unit 6. Material Removal Processes</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC_M10_T17_OI12_A6. Applied knowledge of systems and processes of manufacturing, metrology and quality control</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002804</b>	Course: <b>Thermal and Fluid Engineering</b> <i>(Ingeniería Térmica y de Fluidos)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<p><b>Note:</b> course of the specialties of Mechanical Eng. (M) and Energy Eng. (E)</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. Vapor-gas mixtures</li> <li>Unit 2. Psychometric chart</li> <li>Unit 3. Simple Air-conditioning</li> <li>Unit 4. Air conditioning and comfort</li> <li>Unit 5. Refrigeration cycle</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>SC_M4 Applied knowledge of thermal engineering</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002805</b>	Course: <b>Integrated Project for Mechanical Engineering and Manufacturing: CAD CAM CAE Systems</b> <i>(Proyecto Integrador de Ingeniería Mecánica y Fabricación: CAD- CAM-CAE)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<p><b>Note:</b> course of the specialties of Mechanical Eng. (M), Automotion Eng (A), and Robotic Eng (R )</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. 3D drawing and design techniques</li> <li>Unit 2. Component design</li> <li>Unit 3. Component calculation by using finite elements and other calculus methods</li> <li>Unit 4. Parametric design</li> <li>Unit 5. Dynamic simulation</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>SC_M5_A7. Knowledge and skills to apply the fundamentals of the elasticity and resistance of materials to the behavior of real solids</li> <li>SC_M8_A5_R11. Knowledge and skills to apply graphic engineering techniques</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002806</b>	Course: <b>Integrated project: Design of Machines</b> <i>(Proyecto Integrador: Diseño de Máquinas)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<p><b>Note:</b> course of the specialties of Mechanical Eng. (M), Automotion Eng (A), Energy Eng (E ) and Industrial Technology Eng (T)</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. Machine design fundamentals</li> <li>Unit 2. Safety coefficients. Reliability.</li> <li>Unit 3. Static and dynamic calculus. Fatigue. Machine vibrations</li> <li>Unit 4. Friction and roller bearings</li> <li>Unit 5. Brakes and clutches</li> <li>Unit 6. Flexible drivetrain</li> <li>Unit 7. Designing and sizing of fixed and bolted joints</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>SC_M9_A3_E5_T14. Knowledge and skills for calculating, designing and testing machines</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002807</b>	Course: <b>Analog Electronics</b> <i>(Electrónica Analógica)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<p><b>Note:</b> course of the specialties of Electronic and Automatic Eng. (EyA) and Robotic Eng (R)</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. Analog systems.</li> <li>Unit 2. Static and dynamic characteristics of analog systems.</li> <li>Unit 3. Operational Amplifier Applications</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>SC26: Knowledge of the fundamentals and applications of analog electronics.</li> <li>SC27: Ability to design analog electronic systems</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002808</b>	Course: <b>Integrated Project. Control Engineering</b> ( <i>Proyecto Integrador: Informática Industrial</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<p><b>Note:</b> course of the specialties of Electronic and Automatic Eng. (EyA) and Industrial Organization Eng (OI)</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. Automation pyramid</li> <li>Unit 2. Industry's computer systems: the microprocessor and the microcontroller, the Programmable Logic Controller (PLC), the industrial PC</li> <li>Unit 3. Monitoring systems and field networks</li> <li>Unit 4. Computer control system: digital implementation of regulators</li> <li>Unit 5. Real-time systems</li> <li>Unit 6. Real-time systems, programming methodologies</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>SC_EyA13_OI7. Applied knowledge of industrial computing and communications.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002809</b>	Course: <b>Integrated Project. Digital Electronics and Microprocessors</b> ( <i>Proyecto Integrador: Electrónica Digital y Microprocesadores</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<p><b>Note:</b> course of the specialties of Electronic and Automatic Eng. (EyA) and Robotic Eng (R)</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. Introduction to semiconductor memories.</li> <li>Unit 2. Fundamentals of Programmable Logic Devices (FPGA).</li> <li>Unit 3. Introduction to hardware description languages (VHDL).</li> <li>Unit 4. Introduction to Microprocessors and Microcontrollers.</li> <li>Unit 5. Microcontrollers. Analog-to-Digital and Digital-to-Analog converters.</li> <li>Unit 6. Projects using microcontrollers and microprocessors</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>SC_R2_EyA6. Knowledge of the fundamentals and applications of digital electronics and microprocessors.</li> <li>SC_R5_EyA9. Capacity to design analog, digital and power electronic systems.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002810</b>	Course: <b>Automatic Regulation</b> (Regulación Automática)	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<p><b>Note:</b> course of the specialties of Electronic and Automatic Eng. (EyA) and Industrial Technology Eng (T)</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. Mathematical modelling of continuous systems</li> <li>Unit 2. Laplace transform</li> <li>Unit 3. Feedback fundamentals</li> <li>Unit 4. Industrial controllers</li> <li>Unit 5. Time and frequency methods of design</li> <li>Unit 6. Empirical methods for tuning PID controllers</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>SC_EyA10 Knowledge and capacity for modeling and simulation of systems.</li> <li>SC_EyA11 Knowledge of automatic regulation and control techniques and their application to industrial automation.</li> <li>SC_EyA14 Capacity to design control systems and industrial automation.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9834002811</b>	Course: <b>Industrial Automation</b> ( <i>Automatización Industrial</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<p><b>Note:</b> course of the specialties of Electronic and Automatic Eng. (EyA), Industrial Technology Eng (T) and Industrial Organization Eng (OI)</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. Electrical, pneumatic and hydraulic automatisms.</li> <li>Unit 2. State diagrams</li> </ul>						



- Unit 3. Industrial automatons and their programming
- Unit 4. Industrial applications

**Specific competencies:**

- SC\_EyA11 Knowledge of automatic regulation and control techniques and their application to industrial automation.
- SC\_EyA14 Capacity to design control systems and industrial automation.

Year: <b>3rd</b>	Course code: <b>9834002812</b>	Course: <b>Integrated Project: Industrial Robotic</b> <i>(Proyecto Integrador: Robótica Industrial)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Electronic and Automatic Eng. (EyA), Robotic Eng (R) and Industrial Organization Eng (OI)

**Course content/Units:**

- Unit 1. Introduction to industrial robotics
- Unit 2. Robot morphology
- Unit 3. Manipulator kinematics
- Unit 4. Trajectory planning
- Unit 5. Industrial-robot programming

**Specific competencies:**

- SC\_EyA12 Knowledge of principles and applications of robotic systems.
- SC\_EyA16 Applied knowledge of sensors and actuators for robotic applications.

Year: <b>3rd</b>	Course code: <b>9834002813</b>	Course: <b>Renewable Energy (Energías Renovables)</b>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Industrial Technology Eng. (T) and Energy Eng. (E)

**Course content/Units:**

- Unit 1. Sustainable Energy Policy in Europe
- Unit 2. Current energy and regulatory context
- Unit 3. Relation of renewable energies and the environment
- Unit 4. Hydraulic power
- Unit 5. Photovoltaic, thermal and thermoelectric solar energy
- Unit 6. Biomass and biofuels
- Unit 7. Wind energy
- Unit 8. Geothermal
- Unit 9. Energy of the sea
- Unit 10. Hydrogen energy

**Specific competencies:**

- SC\_T16: Ability to analyze and design renewable energy facilities

Year: <b>3rd</b>	Course code: <b>9834002814</b>	Course: <b>Energía del Petróleo y del Gas</b> <b>NO SE OFERTA</b>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>9834002815</b>	Course: <b>Energía Nuclear</b> <b>NO SE OFERTA</b>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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Year: <b>3rd</b>	Course code: <b>9834002816</b>	Course: <b>Operations Research (Investigación de Operaciones)</b>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Industrial Organization Eng (OI)

**Course content/Units:**

- Unit 1. Linear programming: Transport and allocation
- Unit 2. Network and network analysis. PERT and CPM
- Unit 3. Dynamic programming
- Unit 4. Decision analysis
- Unit 5. Game theory

- Unit 6. Queueing theory
- Unit 7. Simulation
- Unit 8. Inventory theory

**Specific competencies:**

- SC\_OI1. Applied knowledge of the tools and techniques of operations design: mathematical programming (allocation and transport), dynamic programming, decision making theory, inventories and queue management.

Year: <b>3rd</b>	Course code: <b>9834002817</b>	Course: <b>Integrated Project: Production Management</b> (Proyecto Integrador: Organización de la Producción)	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Industrial Organization Eng (OI)

**Course content/Units:**

- Unit 1. Functions and objectives of Production Management. Systems of Production.
- Unit 2. Production and Product Strategies. Product design.
- Unit 3. Process Strategy. Process design. Types of processes
- Unit 4. The production plants. Material flow planning.
- Unit 5. Overall production capacity planning and Aggregate Production.
- Unit 6. Facilities design. Layout. Plant and warehousing location.
- Unit 7. Operations program. Planning and control systems.
- Unit 8. Manufacturing engineering. Work and Time Measurement. Methods Study. Continuous improvement. Productivity.
- Unit 9. Industrial equipment management. Maintenance and renewal.

**Specific competencies:**

- SC\_OI5 Knowledge of the procedures to organize and manage production, understanding its contribution to the company's objectives and knowing and classifying the decisions to be taken in Production Organization

Year: <b>3rd</b>	Course code: <b>9834002818</b>	Course: <b>Vehicular Dynamics I</b> ( <i>Dinámica Vehicular I</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Automotion Eng (A)

**Course content/Units:**

- Unit 1. Statics
- Unit 2. Tires
- Unit 3. Longitudinal, vertical and lateral dynamics

**Specific competencies:**

- SC\_A9 Ability to specify the main components that affect the dynamics of the vehicle (vertical, lateral, longitudinal) applied to real components (springs, shock absorbers, rods, pillars, etc.) studying its rigidity, resistance and fatigue

Year: <b>3rd</b>	Course code: <b>9834002819</b>	Course: <b>Vehicular Dynamics II</b> ( <i>Dinámica Vehicular II</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Automotion Eng (A)

**Course content/Units:**

- Unit 1. Mechanical components
- Unit 2. Suspension components and types
- Unit 3. Chassis

**Specific competencies:**

- SC\_A9 Ability to specify the main components that affect the dynamics of the vehicle (vertical, lateral, longitudinal) applied to real components (springs, shock absorbers, rods, pillars, etc.) studying its rigidity, resistance and fatigue

Year: <b>3rd</b>	Course code: <b>9834002820</b>	Course: <b>Mobile and Service Robotics</b> ( <i>Robótica Móvil y de Servicios</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Robotic Eng (R)

**Course content/Units:**

- Unit 1. Locomotion systems
- Unit 2. Structures for mobile robotics

- Unit 3. Tracking systems
- Unit 4. Planning and navigation
- Unit 5. Software platforms for mobile robotics
- Unit 6. Applications for mobile robotics

**Specific competencies:**

- SC\_R13 Applied knowledge of sensors and actuators for robotic applications.
- SC\_R14 Applied knowledge of locomotion systems, trajectory planning and tracking for mobile robots

Year: <b>4th</b>	Course code: <b>9834002821</b>	Course: <b>Structures and Industrial Constructions</b> ( <i>Estructuras y Construcciones Industriales</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Industrial Technology Eng. (T), Energy Eng (E) and Mechanical Eng. (M)

**Course content/Units:**

- Unit 1. Structural concepts. Isostatic and hyperstatic structures
- Unit 2. Load actions and hypothesis
- Unit 3. Articulated, reticulated and mixed structures
- Unit 4. Stiffness and matrix methods
- Unit 5. Industrial construction

**Specific competencies:**

- SC8: Knowledge and skills to calculate and design structures and industrial constructions .

Year: <b>4th</b>	Course code: <b>9834002822</b>	Course: <b>Elasticity and Resistance of Materials II</b> ( <i>Elasticidad y Resistencia de Materiales II</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Industrial Technology Eng. (T), Energy Eng (E), Automotion Eng (A) and Mechanical Eng. (M)

**Course content/Units:**

- Unit 1. Combined loads. Advanced study. Mohr's circle.
- Unit 2. Calculation of specific applications: plates, vessels, rings, etc.
- Unit 3. Measurement and testing techniques

**Specific competencies:**

- SC\_M5\_E11\_A7\_T19: Knowledge and skills to apply the fundamentals of the elasticity and resistance of materials to the behavior of real solids.

Year: <b>4th</b>	Course code: <b>9834002823</b>	Course: <b>Integrated Project. Machine Maintenance</b> ( <i>Proyecto Integrador: Mantenimiento de Máquinas</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Industrial Organization Eng (OI) and Mechanical Eng. (M)

**Course content/Units:**

- Unit 1. Maintenance techniques
- Unit 2. Reliability. maintainability
- Unit 3. Scheduling and maintenance planning
- Unit 4. Maintenance management

**Specific competencies:**

- SC M11: Knowledge and skills for the maintenance and testing of machines.

Year: <b>4th</b>	Course code: <b>9834002824</b>	Course: <b>Internal Combustion Engines</b> ( <i>Motores de Combustión Interna</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Automotion Eng (A) and Mechanical Eng. (M)

**Course content/Units:**

- Unit 1. Introduction
- Unit 2. Basics of thermodynamics.
- Unit 3. Engine Architecture.
- Unit 4. Ideal Cycles

- Unit 5. Combustion and pollutants
- Unit 6. Turbocharging
- Unit 7. Advanced topics

**Specific competencies:**

- SC\_M18 Ability to calculate the operation and basic design of combustion engine components

Year: <b>4th</b>	Course code: <b>9834002825</b>	Course: <b>Integrated Project: Manufacturing Processes II</b> ( <i>Proyecto Integrador: Procesos de Fabricación II</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Automotion Eng (A) and Mechanical Eng. (M)

**Course content/Units:**

- Unit 1. Manufacturing Processes Optimization
- Unit 2. Unconventional and special machining processes.
- Unit 3. Numerical control manufacturing
- Unit 4. Automated manufacturing. Integrated manufacturing

**Specific competencies:**

- SC31: applied knowledge of manufacturing processes and systems, metrology and quality control. (literal transcription of the powers described in order CIN/351/2009, of February 9)

Year: <b>4th</b>	Course code: <b>9834002826</b>	Course: <b>Perception systems for Robotics</b> ( <i>Sistemas de Percepción en Robótica</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Electronic and Automatic (EyA) and Robotic Eng (R)

**Course content/Units:**

- Unit 1. Laser, ultrasonic, and infrared sensors for robotics
- Unit 2. Illumination and imaging capture systems
- Unit 3. Image processing, segmentation and recognition
- Unit 4. Stereoscopic vision
- Unit 5. Robotics applications

**Specific competencies:**

- SC\_R10: Applied knowledge of image and sound recognition for robotic applications.

Year: <b>4th</b>	Course code: <b>9834002827</b>	Course: <b>Computer Aided Circuit Design</b> ( <i>Diseño de Circuitos Asistido por Ordenador</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Electronic and Automatic (EyA) and Robotic Eng (R)

**Course content/Units:**

- Unit 1. Introduction to computer aided circuit design
- Unit 2. Computer Aided Design: analysis and design tools
- Unit 3. Analysis and design of analogue circuits and operational amplifiers
- Unit 4. Analysis and design of digital circuits
- Unit 5. Design of printed circuit boards

**Specific competencies:**

- SC\_EyA8 Applied knowledge of electronic instrumentation.
- SC\_EyA9 Capacity to design analog, digital and power electronic systems.
- SC\_EyA10 Knowledge and capacity for modeling and simulation of systems.

Year: <b>4th</b>	Course code: <b>9834002828</b>	Course: <b>Electrical Engineering</b> ( <i>Electrotecnia</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Industrial Technology Eng. (T), Energy Eng (E) and Electronic and Automation Eng. (EyA)

**Course content/Units:**

- Unit 1. Introduction
- Unit 2. Three-phase circuits
- Unit 3. Transformers

- Unit 4. Asynchronous machines
- Unit 5. Synchronous machines
- Unit 6. Electrical network calculus

**Specific competencies:**

- SC\_EyA4 Applied knowledge of electrical engineering
- SC\_EyA17 Knowledge applied to the design of electrical networks

Year: <b>4th</b>	Course code: <b>9834002829</b>	Course: <b>Control Engineering</b> ( <i>Ingeniería de Control</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Electronic and Automation Eng. (EyA) <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Dynamic systems analysis</li> <li>• Unit 2. The concept of feedback</li> <li>• Unit 3. Controller design through frequency response</li> <li>• Unit 4. Digital implementation of controllers</li> <li>• Unit 5. Controller design through state space</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC12. Knowledge about fundamentals of automatisms and control methods.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9834002830</b>	Course: <b>Power and instrumentation electronics</b> ( <i>Electrónica de Potencia e Instrumentación Electrónica</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialties of Electronic and Automatic (EyA) and Robotic Eng (R) <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Three-phase uncontrolled rectifiers</li> <li>• Unit 2. Controlled and semi-controlled three-phase rectifiers</li> <li>• Unit 3. Conversion DC / AC and DC / DC.</li> <li>• Unit 4. Command and control circuits power electronic systems.</li> <li>• Unit 5. Sensors and actuators.</li> <li>• Unit 6. System analysis and simulation using graphical programming (virtual instruments).</li> <li>• Unit 7. Analysis of the basic system components (amplifiers, filters etc.) and their spectral response</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC_EyA7 Applied knowledge of power electronics.</li> <li>• SC_EyA8 Applied knowledge of electronic instrumentation.</li> <li>• SC_EyA9 Capacity to design analog, digital and power electronic systems.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9834002831</b>	Course: <b>Hydraulic Machines and Hydraulic Power Stations</b> ( <i>Máquinas y Centrales Hidráulicas</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialties of Industrial Technology Eng. (T) and Energy Eng (E) <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Basic principles. General equations of fluids</li> <li>• Unit 2. Pipes in permanent regime</li> <li>• Unit 3. Pipes in transitory regime</li> <li>• Unit 4. Calculation of channels</li> <li>• Unit 5. Turbo machines</li> <li>• Unit 6. Hydroelectric power plants</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC69: Knowledge and ability to calculate and design hydraulic power plants</li> </ul>						

Year: <b>4th</b>	Course code: <b>9834002832</b>	Course: <b>Energy Efficiency and Energy Storage</b> ( <i>Eficiencia Energética y Almacenamiento de Energía</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialties of Industrial Technology Eng. (T) and Energy Eng (E)

**Course content/Units:**

- Unit 1. European Energy Saving and Efficiency Policy.
- Unit 2. Energy Efficiency in Transport.
- Unit 3. Energy Efficiency in Buildings.
- Unit 4. Storage.

**Specific competencies:**

- SC\_E14 Ability to analyse, design and maintain energy efficient systems.

Year: <b>4th</b>	Course code: <b>9834002833</b>	Course: <b>Process Engineering</b> ( <i>Ingeniería de Procesos</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Industrial Organization Eng (OI)

**Course content/Units:**

- Unit 1. Process definition and representation
- Unit 2. Measurement and monitoring
- Unit 3. Process management
- Unit 4. Adoption of sustainability criteria
- Unit 5. Linear programming
- Unit 6. Advanced optimisation methods

**Specific competencies:**

- SC\_OI6. Ability to analyse processes and propose improvements that reduce defects, unnecessary inventories, overproduction and overprocessing.

Year: <b>4th</b>	Course code: <b>9834002834</b>	Course: <b>Logistics Engineering</b> ( <i>Ingeniería Logística</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Industrial Organization Eng (OI)

**Course content/Units:**

- Unit 1. Demand planning
- Unit 2. Purchasing and procurement
- Unit 3. Industrial warehousing
- Unit 4. Inventory management
- Unit 5. Transport and route organisation
- Unit 6. Distribution networks
- Unit 7. Reverse logistics: Returns, reusability

**Specific competencies:**

- SC\_OI9. Knowledge and skills in demand planning, procurement and sourcing.

Year: <b>4th</b>	Course code: <b>9834002835</b>	Course: <b>Commercial management and marketing</b> ( <i>Dirección Comercial y Marketing</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Industrial Organization Eng (OI)

**Course content/Units:**

- Unit 1. Introduction: Definition, field and environment of marketing
- Unit 2. Strategic marketing planning
- Unit 3. Market research
- Unit 4. Competitive analysis
- Unit 5. Consumer's purchasing behavior and business market's behaviour
- Unit 6. Market segmentation
- Unit 7. Product, promotion, price, distribution and communication policies
- Unit 8. Industrial marketing

**Specific competencies:**

- SC\_OI10 Know the commercial and marketing processes of the company, understanding its importance and its relationship with the rest of the processes.

Year: <b>4th</b>	Course code: <b>9834002836</b>	Course: <b>Financial Management</b> ( <i>Gestión Financiera</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Industrial Organization Eng (OI)

**Course content/Units:**

- Unit 1. Learning in portfolio investments
- Unit 2. Financial decisions
- Unit 3. The financial structure. 3.1. Cost of capital, optimal financial structure and dividend policy. 3.2. Cash flows, Balance Sheet and Income Statement. 3.3. Feasibility analysis.

**Specific competencies:**

- SC\_OI11: Ability to design a viable financial plan and a strategic plan for an organization, considering aspects such as the accounting statement.
- SC\_OI11: Ability to define the different aspects of internal management in a company and the strategy to be followed in a global environment

Year: <b>4th</b>	Course code: <b>9834002837</b>	Course: <b>Electric vehicles and other motorizations</b> ( <i>Vehículo Eléctrico y Otras Motorizaciones</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Automotion Eng (A)

**Course content/Units:**

- Unit 1. Differential components of an electric vehicle
- Unit 2. Possible configurations (hybridization – electric)
- Unit 3. Batteries: range, power consumption, charging needs, and battery requirements. refrigeration and others)
- Unit 4. Hydrogen Technology

**Specific competencies:**

- SC\_A10 Ability to specify in a basic way the differential components of a Electric vehicle in its different possible configurations (hybridization – electric)
- SC\_A11 Ability to analyze the behavior of this type of vehicle from the electrical point of view (range, energy consumption, charging needs, refrigeration and other requirements)

Year: <b>4th</b>	Course code: <b>9834002838</b>	Course: <b>Prototype process, simulation and product test</b> ( <i>Prototipado, Simulación y Ensayos</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Automotion Eng (A)

**Course content/Units:**

- Unit 1. Simulation tools: spread sheets, finite elements (resistance, aerodynamics), multibody analysis, and mathematical programs.
- Unit 2. Design and use of prototyping tools
- Unit 3. Engine calibration
- Unit 4. Tests and product validation. Automotive sector homologation, emission measurement

**Specific competencies:**

- SC56. Ability to perform and solve simulation models in order to reduce development times and prototyping costs.
- SC57. Knowledge applied to the most common tests for product validation and homologation in the automotive sector: Engine calibration, emission measurement, etc

Year: <b>4th</b>	Course code: <b>9834002839</b>	Course: <b>Integrated Project: Robot Design and Manufacture</b> ( <i>Proyecto Integrador: Diseño y Fabricación de Robots</i> )	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Robotic Eng (A)

**Course content/Units:**

- Unit 1. Hardware and software architecture for robotic systems
- Unit 2. Communication systems
- Unit 3. Sensory integration

- Unit 4. Actuator integration
- Unit 5. Robot control and programming

**Specific competencies:**

- SC\_R8 Ability to design industrial automation and control systems

Year: <b>4th</b>	Course code: <b>9834002840</b>	Course: <b>Robotics in aerial and marine systems</b> <i>(Robótica en Sistemas Aéreos y Marinos)</i>	Program: <b>Bachelor's Degree in Systems Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Robotic Eng (A)

**Course content/Units:**

- Unit 1. Types and classification of marine and aerial robots. Applications
- Unit 2. Propulsion and lift systems in marine and aerial vessels.
- Unit 3. On-board instrumentation for guidance, navigation and control of vessels.
- Unit 4. Marine and airborne ship dynamics and control
- Unit 5. Telemetry and communication systems in marine and aerial robotics
- Unit 6. Specific hardware and software for control of marine and airborne spacecraft
- Unit 7. Regulations and legislation for aerial and marine systems

**Specific competencies:**

- CE\_R9. Knowledge of principles and applications of robotic systems

## Bachelor's Degree in Computer Science Engineering (*Grado en Ingeniería Informática*) (Spanish)

1	9988004101	Análisis matemático	Semestre 1 / Fall Term (Sept–Jan)	Español	6
1	9988004102	Bases de la informática	Semestre 1 / Fall Term (Sept–Jan)	Español	6
1	9988004103	Fundamentos de programación	Semestre 1 / Fall Term (Sept–Jan)	Español	6

Year: <b>1st</b>	Course code: <b>9988004104</b>	Course: <b>Personal and professional Efficiency</b> ( <i>Eficacia personal y profesional</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Ethical approaches in the different professional activity fields
- Unit 2. Autonomous learning and self regulation in personal life and professional practice
- Unit 3. Keys to the organization and management teamwork

**Specific competencies:**

- SC20. Know the basics of Business ethics

1	9988004105	Fundamentos de redes	Semestre 1 / Fall Term (Sept–Jan)	Español	6
1	9988004106	Álgebra	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9988004107	Programación orientada a objetos	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9988004108	Estructura de computadores	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9988004109	Fundamentos de física para ingeniería	Semestre 2 / Spring Term (Jan–Jun)	Español	6
1	9988004110	Proyecto de ingeniería	Semestre 2 / Spring Term (Jan–Jun)	Español	6
2	9988004201	Estadística y optimización	Semestre 2 / Spring Term (Jan–Jun)	Español	6



Year: <b>2nd</b>	Course code: <b>9988004202</b>	Course: <b>Linear Structures Programming</b> <i>(Programación con estructuras lineales)</i>	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. General programming</li> <li>Unit 2. Advanced Programming Elements</li> <li>Unit 3. Dynamic length arrays</li> <li>Unit 4. Lists and batteries</li> <li>Unit 5. Algorithms. Efficiency. Recursivity</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC3: Ability to understand and master the basic concepts of mathematics discrete, logical, algorithmic and computational complexity and its application for resolution of problems of Engineering.</li> <li>SC12: Knowledge and application of the basic algorithmic procedures of Computer technologies to design solutions to problems, analyzing suitability and complexity of the proposed algorithms</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9988004203</b>	Course: <b>Introduction to Software Engineering</b> <i>(Introducción a la ingeniería del software)</i>	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Software Engineering Fundamentals and Terminology</li> <li>Unit 2. Software Development Workspace</li> <li>Unit 3. Software Systems Modeling</li> <li>Unit 4. Structured development</li> <li>Unit 5. Detailed design. Computer Aided Software Engineering (CASE). Oriented Design</li> <li>Unit 6. Object-oriented and agile design techniques. Static modeling with UML</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC10: Ability to draw up the technical specifications for a computer installation that complies with current standards and regulations.</li> <li>SC14: Capacity to analyze, design, build and maintain applications in a robust way, Safe and efficient, choosing the most appropriate paradigm and programming languages.</li> <li>SC22: Knowledge and application of engineering principles, methodologies and life cycles of software.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9988004204</b>	Course: <b>Impact and Relational influence</b> <i>(Impacto e influencia relacional)</i>	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Communication in the professional field. 1.1. Verbal Communication. 1.2. Non-Verbal Communication. 1.3. How to communicate in the professional environment? 1.4. Written communication</li> <li>Unit 2. Emotional intelligence in interpersonal relationships. 2.1. Emotional Intelligence. 2.2. Time management. 2.3. Stress Management. 2.4. Introduction to NLP as a method of persuasion</li> <li>Unit 3. The success of change: the ability to adapt. 3.1. The reality of the environment. 3.2. Change Management. 3.3. Adaptability and flexibility. 3.4. Resilience</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9988004205</b>	Course: <b>Circuit Analysis</b> <i>(Análisis de circuitos)</i>	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: Basic concepts of electrical circuits in dc.</li> <li>Unit 2: Basic concepts of electrical circuits in ac.</li> <li>Unit 3: Semiconductors and Diodes</li> <li>Unit 4: Operational Amplifiers</li> <li>Unit 5: Bipolar and field-effect amplifiers</li> <li>Unit 6: Introduction to digital electronics. Digital Logic Families</li> </ul> <b>Specific competences:</b>						

- SC2. Understanding and mastery of the basic concepts of fields and waves and electromagnetism, theory of electrical circuits, electronic circuits, physical principle of semiconductors and logic families, electronic and photonic devices, and their application for the resolution of problems specific to the engineering.

Year: <b>2nd</b>	Course code: <b>9988004206</b>	Course: <b>Advanced Programming Techniques</b> ( <i>Técnicas de programación avanzada</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Algorithm efficiency
- Unit 2. Divide and win
- Unit 3. Data types with functional structure: hash tables
- Unit 4. Data types with hierarchical structure: trees
- Unit 5. Data types with relational structure: graphs
- Unit 6. Fast forward
- Unit 7. Turn back

**Specific competences:**

- SC3: Ability to understand and master the basic concepts of mathematics discrete, logical, algorithmic and computational complexity and its application for resolution of problems of Engineering.
- SC12: Knowledge and application of the basic algorithmic procedures of Computer technologies to design solutions to problems, analyzing suitability and complexity of the proposed algorithms
- SC13. Knowledge, design and efficient use of the most important data types and structures suitable for solving a problem.
- SC27. Ability to evaluate the computational complexity of a problem, to know algorithmic strategies that can lead to its resolution and recommend, develop and implement the one that guarantees the best performance according to the requirements established

Year: <b>2nd</b>	Course code: <b>9988004207</b>	Course: <b>Computer Science Project I</b> ( <i>Proyecto de informática I</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction
- Unit 2. Software engineering tools and processes. 2.1. SCRUM boards in Trello for organizing sprints. 2.2. Drafting of preliminary projects in engineering. 2.3. GitHub as code repository and version manager
- Unit 3. Software development methodologies and tolos. 3.1. Model-view-controller pattern . 3.2. Interaction with text files. 3.3. GUI development. 3.4. Development of applications using Java in Eclipse. 3.5. Data visualization using different types of graphs
- Unit 4. Development of a system composed of two desktop applications for telecare
- elderly and/or disabled people

**Specific competences:**

- SC8: Capacity to plan, conceive, deploy and manage projects, services and systems computer scientists in all areas, leading its implementation and continuous improvement and assessing its economic and social impact.
- SC13: Knowledge, design and efficient use of the most important data types and structures appropriate to the resolution of a problem.
- SC14: Capacity to analyze, design, build and maintain applications in a robust way, Safe and efficient, choosing the most appropriate paradigm and programming languages.
- SC19: Knowledge and application of the necessary tools for storage, processing and access to Information Systems, including web-based ones.
- SC20: Knowledge and application of the fundamental principles and basic techniques of Parallel, concurrent, distributed and real-time programming.
- SC22: Knowledge and application of engineering principles, methodologies and life cycles of software.
- SC23: Capacity to design and evaluate human-computer interfaces that guarantee Accessibility and usability to computer systems, services and applications

Year: <b>2nd</b>	Course code: <b>9988004208</b>	Course: <b>Data Bases</b> ( <i>Bases de datos</i> )	Program:	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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			<b>Bachelor's Degree in Computer Science Engineering</b>			
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Database analysis and entity-relationship model</li> <li>Unit 2. Database theory and the relational model</li> <li>Unit 3. Database Design</li> <li>Unit 4. Database Management Systems</li> <li>Unit 5. Relational query languages</li> <li>Unit 6. Fundamental problems in databases</li> <li>Unit 7. Advanced databases.</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC18: Knowledge and application of the characteristics, functionalities and structure of the bases of data, which allow its proper use, and the design and analysis and implementation of applications based on them</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9988004209</b>	Course: <b>Concurrent and distributed Programming (Programación concurrente y distribuida)</b>	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Concurrent programming concepts</li> <li>Unit 2. Synchronisation and communication mechanisms (mutual exclusion, locks, traffic lights and monitors, message passing).</li> <li>Unit 3. Development of N-layer Applications</li> <li>Unit 4. Development of C/S Applications using sockets</li> <li>Unit 5. Multithread programming</li> <li>Unit 6. Remote procedure calls</li> <li>Unit 7. Distributed process management</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC3: Ability to understand and master the basic concepts of mathematics discrete, logical, algorithmic and computational complexity and its application for resolution of problems of Engineering.</li> <li>SC12: Knowledge and application of the basic algorithmic procedures of Computer technologies to design solutions to problems, analyzing suitability and complexity of the proposed algorithms</li> <li>SC13: Knowledge, design and efficient use of the most important data types and structures suitable for solving a problem.</li> <li>SC27: Ability to evaluate the computational complexity of a problem, to know algorithmic strategies that can lead to its resolution and recommend, develop and implement the one that guarantees the best performance according to the requirements established</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9988004210</b>	Course: <b>Computer Science Project II (Proyecto de informática II)</b>	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> the prerequisite of this project is the course <i>Computer Science Project I</i> <b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Introduction to the course</li> <li>Unit 2. Databases. 2.1. Entity-relationship diagrams. 2.2. Relational tables. 2.3. SQLite. 2.4. Modification of the System developed in first semester to work on the database</li> <li>Unit 3. Microcontrollers and sensor signal acquisition. 3.1. Arduino microcontroller. 3.2. Sensors for signal acquisition.. 3.3. Connection of sensors, use of libraries and programming of the acquisition system and Connecting to the remote database</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC8: Capacity to plan, conceive, deploy and manage projects, services and systems computer scientists in all areas, leading its implementation and continuous improvement and assessing its economic and social impact.</li> <li>SC13: Knowledge, design and efficient use of the most important data types and structures appropriate to the resolution of a problem.</li> <li>SC14: Capacity to analyze, design, build and maintain applications in a robust way, Safe and efficient, choosing the most appropriate paradigm and programming languages.</li> </ul>						

- SC19: Knowledge and application of the necessary tools for storage, processing and access to Information Systems, including web-based ones.
- SC20: Knowledge and application of the fundamental principles and basic techniques of Parallel, concurrent, distributed and real-time programming.
- SC22: Knowledge and application of engineering principles, methodologies and life cycles of software.
- SC23: Capacity to design and evaluate human-computer interfaces that guarantee Accessibility and usability to computer systems, services and applications

Year: <b>3rd</b>	Course code: <b>9988004301</b>	Course: <b>Computer Networks</b> ( <i>Redes de ordenadores</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Net Fundamentals</li> <li>• Unit 2. Introduction to VLANs</li> <li>• Unit 3. Static routing</li> <li>• Unit 4. Dynamic routing algorithms</li> <li>• Unit 5. OSPF</li> <li>• Unit 6. Other basic network configurations. 6.1. Basics of Network Security. 6.2. Network Level Security. (ACLs) . 6.3. Dynamic Address Assignment in IPv4 and IPv6. 6.4. VPN and IPSec concepts. 6.5. Address translation: NAT. 6.6. Wireless network concepts</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>• SC5: Knowledge of the structure, organisation, operation and interconnection of systems computer science, the fundamentals of its programming, and its application for problem solving Own engineering</li> <li>• SC17: Knowledge and application of the characteristics, functionalities and structure of the Systems Distributed, Computer Networks and the Internet and design and implement applications based in them</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9988004302</b>	Course: <b>Artificial Intelligence</b> ( <i>Inteligencia artificial</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction and problem solving.</li> <li>• Unit 2. Probability and Bayesian Networks</li> <li>• Unit 3. Data mining and intelligent information access systems.</li> <li>• Unit 4. Machine learning.</li> <li>• Unit 5. Natural Language Processing</li> <li>• Unit 6. Final Project</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>• SC21: Knowledge and application of the fundamental principles and basic techniques of the systems intelligent and its practical application.</li> <li>• SC29: Capacity to acquire, obtain, formalize and represent human knowledge in a computable form for the resolution of problems through a computer system in any Scope, particularly those related to aspects of computation, perception and Performance in intelligent environments or environments.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9988004303</b>	Course: <b>Operating Systems</b> ( <i>Sistemas operativos</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction</li> <li>• Unit 2. Processes and Concurrency</li> <li>• Unit 3. Memory Management</li> <li>• Unit 4. Interlocks and Input/Output Management</li> <li>• Unit 5. File System and Security in Operating Systems</li> <li>• Unit 6. Virtualization and containers</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>• SC11. Knowledge, administration and maintenance of systems, services and applications Computer.</li> </ul>						

- SC16. Knowledge of the characteristics, functionalities and structure of the Systems Operational and design and implement applications based on their services.

Year: <b>3rd</b>	Course code: <b>9988004304</b>	Course: <b>Computing Project I</b> ( <i>Proyecto de computación I</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Use of data mining and text tools on Open Data.</li> <li>• Unit 2. Application to the project of intelligent systems techniques.</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>• SC25: Ability to have a thorough knowledge of fundamental principles and computer models and know how to apply them to interpret, select, evaluate, Model and create new concepts, theories, uses and related technological development with computing.</li> <li>• SC28: Capacity to know the fundamentals, paradigms and techniques of the intelligent systems and analyze, design and build systems, services and applications computer scientists using these techniques in any field of application</li> <li>• SC29: Capacity to acquire, obtain, formalize and represent human knowledge in a computable form for the resolution of problems through a computer system in any Scope, particularly those related to aspects of computation, perception and Performance in intelligent environments or environments.</li> <li>• SC31: Capacity to know and develop computational learning techniques and Design and implement applications and systems that use them, including dedicated ones to automatic extraction of information and knowledge from Big Data.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9988004305</b>	Course: <b>User Interfaces</b> ( <i>Interfaces de usuario</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction to user interfaces</li> <li>• Unit 2. Heuristic evaluation of user interfaces</li> <li>• Unit 3. Empirical Evaluations</li> <li>• Unit 4. Designing user interfaces for desktop applications</li> <li>• Unit 5. Web Interface Design</li> <li>• Unit 6. Group work End of the Subject</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>• SC23: Capacity to design and evaluate human-computer interfaces that guarantee Accessibility and usability to computer systems, services and applications</li> <li>• SC30 Capacity to develop and evaluate interactive and presentation systems Complex information and its application to solving interaction design problems Computer person.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9988004306</b>	Course: <b>Smart systems and knowledne representaton</b> ( <i>Sistemas inteligentes y representación del conocimiento</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Introduction to Intelligent Systems</li> <li>• Unit 2. Natural Language Processing (NLP)</li> <li>• Unit 3. Information Retrieval (IR)</li> <li>• Unit 4. Lexical analysis</li> <li>• Unit 5. Web search</li> <li>• Unit 6. Web Scraping</li> <li>• Unit 7. Recommender Systems</li> <li>• Unit 9. Business intelligence</li> <li>• Unit 10. Intelligent agents</li> <li>• Unit 11. Multi-agent systems</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>• SC21: Knowledge and application of the fundamental principles and basic techniques of the systems intelligent and its practical application.</li> </ul>						

- SC28: Capacity to know the fundamentals, paradigms and techniques of the intelligent systems and analyze, design and build systems, services and applications computer scientists using these techniques in any field of application

Year: <b>3rd</b>	Course code: 9988004307	Course: <b>Computing Projects II</b> ( <i>Proyecto de computación II</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** the prerequisite of this project is the course *Computing Projects I*

**Course content/Units:**

- Unit 1. Advanced design of user interfaces.
- Unit 2. App development
- Unit 3. Web development
- Unit 4. Use of advanced databases

**Specific competences:**

- SC25: Ability to have a thorough knowledge of fundamental principles and computer models and know how to apply them to interpret, select, evaluate, Model and create new concepts, theories, uses and related technological development with computing.
- SC28: Capacity to know the fundamentals, paradigms and techniques of the intelligent systems and analyze, design and build systems, services and applications computer scientists using these techniques in any field of application
- SC29: Capacity to acquire, obtain, formalize and represent human knowledge in a computable form for the resolution of problems through a computer system in any Scope, particularly those related to aspects of computation, perception and Performance in intelligent environments or environments.
- SC30 Capacity to develop and evaluate interactive and presentation systems Complex information and its application to solving interaction design problems Computer person.
- SC31: Capacity to know and develop computational learning techniques and Design and implement applications and systems that use them, including dedicated ones to automatic extraction of information and knowledge from Big Data.

Year: <b>3rd</b>	Course code: <b>9988004308</b>	Course: <b>Web and Apps Development</b> ( <i>Desarrollo web y de apps</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Front-End. 1.1. HTML . 1.2. CSS. 1.3. Diseño adaptative or responsive Design. 1.4. JavaScript
- Unit 2. Back-End. 2.1. Introduction to the Back-end. 2.2. Back-end programming languages . 2.3. Databases
- Unit 3. Apps and other technologies. 3.1. Hybrid applications

**Specific competences:**

- SC5: Knowledge of the structure, organisation, operation and interconnection of systems computer science, the fundamentals of its programming, and its application for problem solving Own engineering
- SC17: Knowledge and application of the characteristics, functionalities and structure of the Systems Distributed, Computer Networks and the Internet and design and implement applications based on them

Year: <b>3rd</b>	Course code: <b>9988004309</b>	Course: <b>Entrepreneurial leadership</b> ( <i>Liderazgo emprendedor</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Keys to Leadershi. 1.1. Introduction to Leadership. 1.2. Persuasive communication. 1.3. Teamwork. 1.4. Fundamentals of leadership.
- Unit 2. Proactive Thinking and Entrepreneurship. 2.1. Proactive versus reactive. 2.1.The laws of the entrepreneur. 2.2. Personal branding. 2.3. Social entrepreneurship.
- Unit 3. Complex organizations. Balance between the domestic and the global. 3.1. Diversity management. 3.2. Knowledge management. 3.3. Conflict management and negotiation. 3.4. Global complexity in the organizations

Year: <b>4th</b>	Course code: <b>9988004401</b>	Course: <b>Big Data</b> ( <i>Grandes volúmenes de datos</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Big Data systems
- Unit 2. HADOOP Ecosystem
- Unit 3. Storage systems and non-SQL databases
- Unit 4. Apache Spark
- Unit 5. Streaming Data processing
- Unit 6. Visualization of Big Data

**Specific competences:**

- SC31: Capacity to know and develop computational learning techniques and Design and implement applications and systems that use them, including dedicated ones to automatic extraction of information and knowledge from Big Data.

Year: <b>4th</b>	Course code: <b>9988004402</b>	Course: <b>Systems Administration</b> ( <i>Administración de sistemas</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Multi-user environments
- Unit 2. The roles and responsibilities of an administrator.
- Unit 3. Servers and workstations in a networked environment
- Unit 4. The different users of a system.
- Unit 5. Backups.
- Unit 6. The programming of the shells.
- Unit 7. Security in the systems.
- Unit 8. Administration and security of databases.
- Unit 9. Virtualization. Cloud computing

**Specific competences:**

- SC11. Knowledge, administration and maintenance of systems, services and applications Computer.
- SC16. Knowledge of the characteristics, functionalities and structure of the Systems Operational and design and implement applications based on their services.

Year: <b>4th</b>	Course code: <b>9988004403</b>	Course: <b>Software Engineering</b> ( <i>Ingeniería del software</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction. Software process
- Unit 2. Acquisition (Elicitation) and viability in software projects
- Unit 3. Bases of Analysis and Design Strategies
- Unit 4. Architectural design in software projects
- Unit 5. Unit 6. Deployment design and testing

**Specific competences:**

- SC10: Ability to draw up the technical specifications for a computer installation that complies with current standards and regulations.
- SC14: Capacity to analyze, design, build and maintain applications in a robust way, Safe and efficient, choosing the most appropriate paradigm and programming languages.
- SC22: Knowledge and application of engineering principles, methodologies and life cycles of software.

Year: <b>4th</b>	Course code: <b>9988004404</b>	Course: <b>Compilers and Formal Languages</b> ( <i>Compiladores y lenguajes formales</i> )	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Compilers and Formal Languages. 1.1. Compiler Foundation. 1.2. Formal languages. 1.3. Turing machines.
- Unit 2. Lexical analysis. 2.1. Basic concepts of lexical analysis. 2.2. Regular expressions. 2.3. Finite automata. 2.4. From regular expression to AFD.
- Unit 3. Syntactic Analysis I. 3.1. Grammars. 3.2. Parsers. 3.3. FIRST and NEXT sets. 3.4. Top-down parsing LL(1).
- Unit 4. Syntactic Analysis II. 4.1. SLR. 4.2. LR1. 4.3. LALR. 4.4. Generator of ascending parsers.

- Unit 5. Semantic Analysis. 5.1. Grammars of attributes and types. 5.2. Table of symbols. 5.3. ETDS vs DDS. 5.4. Type checking.
- Unit 6. Code generation. 6.1. Three-way code. 6.2. Examples for different data structures. 6.3. Memory and parameters. 6.4 Code optimization

**Specific competences:**

- SC26: Capacity to know the theoretical foundations of programming languages and associated lexical, syntactic and semantic processing techniques, and know how to apply them for the Language creation, design and processing

4	9988004405	Empresa y legislación	Semestre 1 / Fall Term (Sept–Jan)	Español	6
4	9988004801	Desarrollo para dispositivos móviles	Semestre 1 / Fall Term (Sept–Jan)	Español	6
4	9988004802	Robótica móvil	Semestre 1 / Fall Term (Sept–Jan)	Español	6

Year: <b>4th</b>	Course code: <b>9988004805</b>	Course: <b>IT Security (<i>Seguridad informática</i>)</b>	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Regulations and data protection.
- Unit 2. Physical and Logical Security.
- Unit 3. Network Security
- Unit 4. Cryptography.
- Unit 5. Forensics.

**Specific competences:**

- SC18: Knowledge and application of the characteristics, functionalities and structure of the bases of data, which allow its proper use, and the design and analysis and implementation of applications based on them
- SC21: Knowledge and application of the fundamental principles and basic techniques of the systems intelligent and its practical application.
- SC23: Capacity to design and evaluate human-computer interfaces that guarantee Accessibility and usability to computer systems, services and applications.
- SC26: Capacity to know the theoretical foundations of programming languages and associated lexical, syntactic and semantic processing techniques, and know how to apply them for the Language creation, design and processing
- SC28: Capacity to know the fundamentals, paradigms and techniques of the intelligent systems and analyze, design and build systems, services and applications computer scientists using these techniques in any field of application
- SC29: Capacity to acquire, obtain, formalize and represent human knowledge in a computable form for the resolution of problems through a computer system in any Scope, particularly those related to aspects of computation, perception and Performance in intelligent environments or environments.
- SC30 Capacity to develop and evaluate interactive and presentation systems Complex information and its application to solving interaction design problems Computer person.
- SC31: Capacity to know and develop computational learning techniques and Design and implement applications and systems that use them, including dedicated ones to automatic extraction of information and knowledge from Big Data

Year: <b>4th</b>	Course code: <b>9988004806</b>	Course: <b>Digital Transformation Management (<i>Dirección de transformación digital</i>)</b>	Program: <b>Bachelor's Degree in Computer Science Engineering</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Information systems management
- Unit 2. Emerging technologies
- Unit 3. New technologies
- Unit 4. Digital transformation

**Specific competences:**

- SC10: Ability to draw up the technical specifications for a computer installation that complies with current standards and regulations.
- SC14: Capacity to analyze, design, build and maintain applications in a robust way, Safe and efficient, choosing the most appropriate paradigm and programming languages.
- SC22: Knowledge and application of engineering principles, methodologies and life cycles of software.





## School of Biomedical and Health Sciences (*Facultad de Ciencias Biomédicas y de la Salud*)

### Bachelor's Degree in Medicine (*Grado en Medicina*) (Spanish)

Year: <b>3rd</b>	Course code: <b>9998001301</b>	Course: <b>Medical Management &amp; Public Health</b> ( <i>Gestión sanitaria y salud pública</i> )	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>4 ECTS</b>
<p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>Unit 1. Healthcare management. 1.1. Health Systems. 1.2. Information Systems for Management and Planning.. 1.3. Concepts in clinical management and health planning. Economic evaluation. 1.4. Guidelines, Protocols, and Clinical Pathways. 1.5: Variability in Clinical Practice and Process Management. 1.6 Quality of Care.</li> <li>Unit 2. Public health. 2.1. Public health in the macro context of health. Surveillance systems. 2.2. Health promotion and disease prevention. 2.3. Food, Nutrition, Physical Activity and Public Health. 2.4. Tobacco and Health. 2.5. Drug Dependence and Health. 2.6. Alcohol and health. 2.7. Environment and health</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>SC12: Know the principles and apply the methods of preventive medicine and health Public. Risk factors and prevention of the disease. Recognizing the Determinants of Health of the population. Health indicators. Planning, programming and evaluation of Health programs. Prevention and protection against diseases, injuries and accidents.</li> <li>SC13: Evaluation of the quality of care and patient safety strategies. Vaccines. Epidemiology. Demography. Know the health planning and administration worldwide, European, Spanish and autonomous. Understand the economic and social implications medical performance, considering criteria of efficacy and efficiency. Health and the environment. Food safety. Occupational health.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9998001303</b>	Course: <b>General Pathological Anatomy</b> ( <i>Anatomía patológica general</i> )	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
<p><b>Course content/Units:</b></p> <p>SYSTEMIC GENERAL PATHOLOGICAL ANATOMY</p> <ul style="list-style-type: none"> <li>Unit 1. Inagural lesson.</li> <li>Unit 2. General aspects of cell injury and death.</li> <li>Unit 3. Reversible cell lesions. cellular response.</li> <li>Unit 4. Intraceluar deposits.</li> <li>Unit 5. Acute inflammation I.</li> <li>Unit 6. Acute inflammation II.</li> <li>Unit 7. Acute inflammation III.</li> <li>Unit 8. Chronic inflammation.</li> <li>Unit 9. repair: regeneration and healing.</li> <li>Unit 10. inflammatory pathology of infectious origin.</li> <li>Unit 11. granulomatous diseases of infectious etiology I.</li> <li>Unit 12. granulomatous diseases of infectious etiology II.</li> <li>Unit 13. hemodynamic disorders I.</li> <li>Unit 14. hemodynamic disorders II.</li> <li>Unit 15. metabolic diseases I.</li> <li>Unit 16. metabolic diseases II.</li> <li>Unit 17. diseases of the immune system I.</li> <li>Unit 18. diseases of the immune system II.</li> <li>Unit 19. general aspects of neoplasms I.</li> <li>Unit 20. overview of neoplasms II.</li> <li>Unit 21. overview of neoplasms III.</li> <li>Unit 22. carcinogenesis and molecular basis of cancer I.</li> </ul>						

- Unit 23. carcinogenesis and molecular basis of cancer II.
- Unit 24. epithelial tumors.
- Unit 25 soft tissue tumors I
- Unit 26 soft tissue tumors II.
- Unit 27 peripheral nerve tumors.
- Unit 28 melanocytic tumors.
- Unit 29 tumors of the neuroendocrine system.
- Unit 30 embryonal tumors.

**GENERAL PATHOLOGICAL ANATOMY BY ORGANS AND APPARATUS**

- Unit 31 vascular pathology i: arteriosclerosis.
- Unit 32 vascular pathology ii. vasculitis.
- Unit 33 cardiac pathology.
- Unit 34 acute and chronic respiratory processes.
- Unit 35 lung tumors I.
- Unit 36 lung tumors II.
- Unit 37 mediastinal pathology.
- Unit 38 thoracic compartment syndromes.
- Unit 39 lymphomas I.anatomical pathology learning guide
- Unit 40 lymphomas II.
- Unit 41 lymphomas III.
- Unit 42 diseases of the esophagus and stomach.
- Unit 43 tumors of the esophagus and stomach.
- Unit 44 small intestine.
- Unit 45 large intestine.
- Unit 46 pathology of the liver and bile duct I.
- Unit 47 pathology of the liver and bile duct II.
- Unit 48 pancreatic and salivary gland pathology.
- Unit 49 endocrine pathology I.
- Unit 50 endocrine pathology II.
- Unit 51 endocrine pathology III.
- Unit 52 pathology of the female genital tract I.
- Unit 53 pathology of the female genital tract II
- Unit 54 pathology of the male genital tract.
- Unit 55 breast pathology I.
- Unit 56 breast pathology II.
- Unit 57 glomerular renal pathology (glomerulopathies) I.
- Unit 58 glomerular renal pathology (glomerulopathies) II.
- Unit 59 tumors of the kidney and urinary tract
- Unit 60 pathological anatomy of bone and joints I.
- Unit 61 pathological anatomy of bone and joints II.
- Unit 62 neuropathology I.
- Unit 63 neuropathology II

**Specific competencies:**

- SC42: Know the indications for biochemical, haematological and immunological tests, microbiological, pathological, and imaging.
- SC43: Know the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation.
- SC44: Alterations in cell growth.
- SC45: Pathological anatomy of the different apparatuses and systems.
- SC46: Biochemical, cytogenetic and molecular biology markers applied to diagnosis clinical.Anatomical Pathology Learning Guide
- SC60: Know how to obtain and process a biological sample for study using the Different Diagnostic Procedures

Year: <b>3rd</b>	Course code: <b>9998001304</b>	Course: <b>Image-Based Diagnosis (<i>Diagnóstico por imagen</i>)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
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**Course content/Units:**

**BASIC CONCEPTS**

- Topic 1 Presentation. Subject-assessment content.

- Topic 2 Physical Characteristics of RX. Radiation protection.
- Topic 3 Drugs in X-ray, Contrast
- Topic 4 Simple X-ray, Computed Tomography and Fluoroscopy
- Topic 5 Ultrasound and Magnetic Resonance Imaging
- Topic 6 Nuclear Medicine, Molecular Imaging, Hybrid Techniques.

#### THORACIC RADIOLOGY

- Topic 7 Essential Anatomy of the Thorax.
- Topic 8 Semiology of the Thorax.
- Topic 9 Pulmonary Collapse-Atelectasis
- Topic 10 Alveolar injury. Lung infection
- Topic 11 Interstitial lesion. Airway pathology
- Topic 12 Pulmonary nodule. Pulmonary neoplasm
- Topic 13 Mediastinal Pathology
- Topic 14 Pathology of the pleura, wall, diaphragm
- Topic 15 Heart failure. Thoracic ICU. Tubes and catheters.

#### ABDOMINAL RADIOLOGY

- Topic 16 Essential Anatomy of the Abdomen
- Topic 17 Semiology of the Abdomen
- Topic 18 Gastrointestinal Tract Pathology
- Topic 19 Pathology of the liver and gallbladder
- Topic 20 Pathology of the Pancreas and Spleen
- Topic 21 Acute abdomen
- Topic 22 Urinary System. Renal masses
- Topic 23 Genital Apparatus (Female and Male)

#### CARDIAC AND VASCULAR

- Topic 24 Cardiac-Pericardial Pathology
- Topic 25 Vascular pathology

#### CENTRAL NERVOUS SYSTEM RADIOLOGY

- Topic 26 Essential Anatomy of the CNS
- Topic 27 CNS semiology
- Topic 28 Traumatic Brain Injury
- Topic 29 CNS Tumors
- Topic 30 Vascular Pathology and CNS Interventional Diseases
- Topic 31 White Matter Pathology. Hydrocephalus. Advanced Imaging
- Topic 32 Nasosinusal, orbital and auditory pathology
- Topic 33 Anatomy and Pathology of the Neck

#### MUSCULOSKELETAL RADIOLOGY

- Topic 34 Anatomy and Imaging Methods in Musculoskeletal
- Topic 35 Semiology in musculoskeletal. Fractures
- Topic 36 Arthropathies (degenerative, inflammatory, deposition, etc.)
- Topic 37 Bone and Soft Tissue Tumors
- Item 38 Spine
- Item 39 Shoulder. Elbow, Wrist, Hand
- Topic 40 Bone pelvis, hip
- Topic 41 Knee. Ankle, Foot

#### MISCELLANEOUS

- Item 42 Polytrauma
- Topic 43 Pediatric chest radiology. Abused child
- Topic 44 Pediatric Abdominal Radiology.
- Topic 45 Mom. Basic semiology. Mammography-Ultrasound-MRI
- Topic 46 Functional Imaging in Oncology

#### Specific competencies:

- SC4 1.1: Assess the risk/benefit ratio of diagnostic and therapeutic procedures.
- SC4.1.9: Know the basics of the interaction of radiation with the human body. Image Radiological. Basic radiological semiology of the different apparatus and systems. Know other techniques Diagnostic imaging. Assess the indications and contraindications of the studies Radiological.
- SC4.1.10: Have the ability to apply radiation protection criteria in procedures diagnostic and therapeutic use of ionizing radiation.

- SC4.2.4: Know how to interpret a radiological image by means of systematic reading. Know how to use the various drugs appropriately. Know how to perform and interpret an electrocardiogram and electroencephalogram.

Year: <b>3rd</b>	Course code: <b>9998001305</b>	Course: <b>General Pharmacology &amp; Therapeutic Procedures</b> ( <i>Farmacología General y Procedimientos Terapéuticos</i> )	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>11 ECTS</b>
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**Course content/Units:**
**GENERAL PHARMACOLOGY**

- Topic 1: Concept of Pharmacology. Current Division of Pharmacology. Historical development.
- Topic 2. The drug development process. Pre-clinical and clinical periods. Clinical trials. Drug utilization studies. Pharmacoeconomic studies.
- Topic 3. Pharmacodynamics. Mechanism of action of drugs. Drug-receptor interactions.
- Topic 4. Mechanism of production of adverse drug reactions. Types of Reactions Adverse. Pharmacovigilance.
- Topic 5. Pharmacokinetics I: Routes of drug administration. Absorption. Distribution.
- Topic 6. Pharmacokinetics II: Metabolism. Elimination.
- Item 7. Pharmacokinetics III: Clinical pharmacokinetics. Individualization of treatment. Drug use in special situations. Drug monitoring.
- Item 8. Drug interactions. Production mechanisms. Interactions with greater relevance clinic.

**PHARMACOLOGY OF THE AUTONOMIC AND PERIPHERAL NERVOUS SYSTEM**

- Item 9. Pharmacology of the autonomic nervous system I: Drugs that modify sympathetic activity. Adrenergic agonist drugs. Adrenergic antagonist drugs.
- Item 10. Autonomic Nervous System Pharmacology II: Drugs That Modify Transmission Cholinergic. Cholinergic agonist drugs
- Item 11. Drugs that block the motor plate.
- Item 12. Local anesthetics.

**PHARMACOLOGY OF THE CIRCULATORY SYSTEM**

- Item 13. Pharmacology of heart failure.
- Item 14. Antihypertensive drugs.
- Item 15. Drugs used in ischemic heart disease.
- Item 16. Antiarrhythmic drugs.
- Item 17. Pharmacology of hemostasis, coagulation and fibrinolysis.

**PHARMACOLOGY OF THE RESPIRATORY SYSTEM**

- Item 18. Pharmacology of bronchial asthma.

**PHARMACOLOGY OF THE DIGESTIVE SYSTEM**

- Item 19. Pharmacology of gastric acid secretion. Antiulcer medications.
- Item 20. Pharmacology of the motility of the digestive system. Antiemetics

**PHARMACOLOGY OF THE DIGESTIVE SYSTEM**

- Item 19. Pharmacology of gastric acid secretion. Antiulcer medications.
- Item 20. Pharmacology of the motility of the digestive system. Antiemetics

**CENTRAL NERVOUS SYSTEM PHARMACOLOGY**

- Item 23. Opioid painkillers.
- Item 24. Anxiolytic and hypnotic drugs.
- Item 25. Antiepileptic drugs.
- Item 26. Neuroleptic drugs.
- Item 27. Antidepressant drugs.
- Item 28. General anesthetic drugs.
- Item 29. Parkinson's pharmacology. Pharmacology of dementias

**ENDOCRINE-METABOLIC PHARMACOLOGY**

- Item 30. Steroid hormones: hormonal contraceptives and corticosteroids.
- Item 31. Thyroid hormones and antithyroid drugs.
- Item 32. Pharmacology of diabetes. Insulin. Oral and non-insulin hypoglycemic agents.
- Item 33. Lipid-lowering drugs. Pharmacology of gout.
- Item 34. Pharmacology of osteoporosis. Bisphosphonates.

**ANTINEOPLASTIC PHARMACOLOGY**

- Item 35. Antineoplastic chemotherapy.

**PHARMACOLOGY OF INFECTIOUS PROCESSES**

- Item 36. General principles of the use of anti-infectives. Antiseptics and disinfectants.
- Item 37. Beta-lactam antibiotics.
- Item 38. Aminoglycoside antibiotics
- Item 39. Glycopeptide antibiotics. Daptomycin. Linezolid.
- Item 40. Macrolide antibiotics. Lincosamides.
- Item 41. Other antibiotics: Tetracyclines. Metronidazole.
- Item 42. Quinolones and sulfonamides.
- Item 43. Anti-tuberculosis drugs.
- Item 44. Antiviral drugs.
- Item 45. Antifungal drugs.
- Item 46. Antiparasitic drugs

**THERAPEUTIC PROCEDURES**

- Topic 47: Introduction to Therapeutic Procedures in Medicine.

**Specific competencies:**

- SC51 (4.1; 4.2; 4.3; 4.5; 4.6; 4.13): Know the main groups of drugs, doses, routes of administration and pharmacokinetics. Interactions and adverse effects. Prescription and pharmacovigilance. Pharmacology of the different apparatuses and systems. Analgesic, antineoplastic drugs, antimicrobials and anti-inflammatories.
- SC53 (4.8): Nutrition and diet therapy.
- SC57 (4.10): Transfusions and transplants.
- SC58 (4.11): Know the principles and indications of radiotherapy.
- SC59 (4.12): Know the fundamentals of rehabilitation, the promotion of personal autonomy, functional adaptation of the environment, and other physical procedures in morbidity, for the Improved quality of life
- SC63 (4.1; 4.2; 4.3; 4.5; 4.6): Know how to interpret a radiological image by means of systematic reading. Know how to use the various drugs properly. Know how to perform and interpret an electrocardiogram and electroencephalogram.
- SC64 (4.4): Write correct medical prescriptions, adapted to the situation of each patient and the legal requirements.
- SC65 (4.9): Assess nutritional status and develop a diet appropriate to different circumstances

Year: <b>3rd</b>	Course code: <b>9998001307</b>	Course: <b>General Principles of Surgery (<i>Bases generales de la cirugía</i>)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

**BASICS OF SURGERY**

- Topic 1. Fundamentals of Surgery: History. Surgical pathology.
- Topic 2. Biological response to aggression. Cicatrization.
- Topic 3. Hemostasis in surgery. Bleeding control.
- Topic 4. Anesthesia: types and techniques.
- Topic 5 Resuscitation and Support Techniques in the Surgical Patient. Alterations Hydroelectrolyte tests of the surgical patient. Serum therapy.

**OPERATING BASES**

- Topic 6: Preoperative. Surgical risk. Complications in surgery.
- Topic 7 Antithrombotic prophylaxis and thromboembolic complications.
- Topic 8 Treatment of postoperative pain.
- Topic 9 Nutrition and metabolism in the surgical patient.
- Topic 10 Ethics in Surgery.

**TRANSPLANTATION**

- Topic 11 Immunological basis of transplantation. Immunosuppression.
- Topic 12 Transplantation: Basic Concepts and Types of Transplantation.
- Topic 13 Brain death. Organ Donation

**TRAUMA**

- Topic 14 Mechanical trauma. Wounds, bites, and stings.
- Topic 15 Trauma by physical and chemical agents.
- Topic 16 Burns and frostbite.
- Topic 17 Care for polytrauma patients. Disaster medicine.
- Topic 18 Explosive injuries. Barotrauma. Crush syndrome

**SURGICAL INFECTIONS**

- Topic 19 Asepsis and antisepsis. Clothing, hand washing. Sterilization.
- Topic 20 Basis of antibiotic therapy in surgery. Prophylaxis of surgical infection.
- Topic 21 Skin and soft tissue infections: phlegmons, abscesses, gangrene.

**ONCOLOGICAL SURGERY**

- Topic 22 Tumor biology. Tumor markers. Tumor spread. Basics of Surgery Oncology

**Specific competencies:**

- SG 4.1.12: Know the general principles of anaesthesia and resuscitation.
- SC 4.1.15: Know the pathophysiology of wounds (including burns, frostbite and other types of wounds). Cicatrization. Surgical bleeding and prophylaxis Thromboembolic.
- CE 4.1.16: Know the general surgical indications, the preoperative risk and the postoperative complications.
- SC4.1.17: Transfusions and transplants.
- SC4.2.3: Handle disinfection and sterilization techniques.
- SC4.2.7: Practice elementary surgical procedures: cleaning, hemostasis, and suturing of wounds

Year: <b>4th</b>	Course code: <b>9998001401</b>	Course: <b>Clinical Bioethics &amp; Legal Medicine</b> <i>(Bioética Clínica y Medicina Legal)</i>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
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**Course content/Units:**

**CLINICAL BIOETHICS**

- Unit 1. Introduction to clinical bioethics.
- Unit 2. Methodology of work in clinical ethics. Ethics Committees for Health Care.
- Unit 3. Competence and capacity. The mature youngest.
- Unit 4. Limitation of effort and therapeutic obstinacy.
- Unit 5. Palliative care. Sedation, euthanasia, and assisted suicide.
- Unit 6. Living will.
- Unit 7. Persistent and permanent vegetative state.
- Unit 8. Triage.
- Unit 9. Organ Transplants
- Unit 10. Privacy, Confidentiality and Medical Secrecy.
- Unit 11. Refusal of Treatment. The duty of non-abandonment.
- Unit 12. Conscientious objection.
- Unit 13. Management ethics. Distribution of health resources.
- Unit 14. Conflicts of interest in medicine. Relations with the pharmaceutical industry.
- Unit 15. Research on human subjects.
- Unit 16. Voluntary termination of pregnancy.
- Unit 17. Assisted reproduction techniques. Antenatal diagnosis.
- Unit 18. Gene therapy. Stem cell research.
- Unit 19. Clinical Genetics and Genetic Counseling

**FORENSIC MEDICINE**

- Unit 20. Concept and organization of forensic medicine.
- Unit 21. Legal Aspects of Patients' Rights and Duties: Informed Consent, History clinic, professional secrecy.
- Unit 22. Healthcare professional liability. Medico-legal problems of the MIRs.
- Unit 23. Medico-legal documents: medical certificates, injury report, sick leave report and prescription Medical
- Unit 24. Occupational medicine: occupational accidents and occupational diseases. Incapacity for work and its tuition.
- Unit 25. Forensic toxicology. Forensic biology. Sample collection and shipment.
- Unit 26. Injuries in the Penal Code. The medico-legal assessment of the injuries.
- Unit 27. Violence and abuse.
- Unit 28. Offences against sexual freedom.
- Unit 29. Diagnosis of death. Natural death, suspected of criminality and violent.
- Unit 30. The investigation of the scene of the crime and the removal of the body.
- Unit 31. Cadaveric phenomena and the calculation of the date of death.
- Unit 32. Judicial/clinical autopsy. Thanatopraxia.
- Unit 33. Bruises
- Unit 34. Stab wounds.
- Unit 35. Gunshot wounds.
- Unit 36. Injuries from physical and chemical agents.
- Unit 37. Asphyxiation.
- Unit 38. Sudden Death in Adults
- Unit 39. Sudden infant death syndrome.
- Unit 40. Forensic psychiatry.

**Specific competencies:**

- SC2.1.2 Recognize, diagnose and guide the management of physical and mental damage.
- SC 2.1.3 Social and legal implications of death.
- SC 2.1.4 Know and recognize the normal evolution of the corpse. Postmortem diagnosis. Fundamentals of Medical Criminology
- SC 2.1.5 Be able to draft medico-legal documents
- SC 2.2.1 Know the fundamentals of medical ethics. Bioethics. Resolve ethical conflicts. Apply the professional values of excellence, altruism, sense of duty, responsibility, integrity and honesty in the exercise of the profession.
- SC 2.2.2 Recognize the need to maintain professional competence. Know how to deal with the Professional practice respecting the patient's autonomy, beliefs and culture.

Year: <b>4th</b>	Course code: <b>9998001406</b>	Course: <b>Cardiovascular system (Aparato cardiovascular)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>8 ECTS</b>
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**Note 1:** the course consists of 4 ECTS theoretical + 4 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

**CARDIOLOGY AND CARDIAC SURGERY**

- Unit 1. Cardiovascular risk. Primary and secondary prevention. Arteriosclerosis.
- Unit 2. Essential high blood pressure.
- Unit 3. Heart failure.
- Unit 4. Treatment of heart failure.
- Unit 5. Cardiogenic shock.
- Unit 6. Arrhythmias I. Bradycardias and blockages.
- Unit 7. Arrhythmias II. Atrial arrhythmias.
- Unit 8. Arrhythmias III. WPW syndrome and AV nodal tachycardia
- Unit 9. Arrhythmias IV. Ventricular arrhythmias.
- Unit 10. Arrhythmias V. Syncope and sudden death. Pacemakers and defibrillators.
- Unit 11. Ischemic heart disease I. Myocardial ischemia. Introduction.
- Unit 12. Ischemic heart disease II. Chronic coronary artery disease. Stable angina.
- Unit 13. Non-ST-segment elevation acute coronary syndrome (ACS). Unstable angina.
- Unit 14. ST-segment elevation acute coronary syndrome (ACS). I and II.
- Unit 15. Valvular heart disease I. Rheume fever. Mitral valve disease: mitral stenosis.
- Unit 16. Valvular heart disease II. Mitral valve disease II: mitral regurgitation.
- Unit 17. Valvular heart disease III. Aortic valve disease I: aortic stenosis.
- Unit 18. IV valvular heart disease. Aortic valve disease II: aortic regurgitation.
- Unit 19. V. Tricuspid and pulmonary valve disease. Multivalvular disease. Prosthesis heart valves.
- Unit 20. Myocarditis and cardiomyopathies.
- Unit 21. Dilated, hypertrophic, and restrictive cardiomyopathy.
- Unit 22. Congenital heart disease I. Short circuits i-d.
- Unit 23. Congenital heart disease II: d-i short circuits. Obstructive anomalies.
- Unit 24. Pericardium disease: acute and chronic pericarditis/constriction. Pericardial effusion/tamponade.
- Unit 25. Tumors and cardiac trauma.

**VASCULAR SURGERY**

- Unit 1. Acute and chronic arterial ischemia.
- Unit 2. Diabetic foot and amputations.
- Unit 3. Vascular trauma. Arteriovenous fistulas.
- Unit 4. Acute aortic syndrome.
- Unit 5. Aortic aneurysm. Thoracic and thoraco-abdominal aneurysms. Peripheral aneurysms and Visceral.

**Specific competencies:**

- SC 3.1.7 Recognize, diagnose and guide the management of the main pathologies Cardiocirculatory
- SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning
- SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to



most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>4th</b>	Course code: <b>9998001407</b>	Course: <b>Respiratory system (Aparato respiratorio)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>8 ECTS</b>
<p><b>Note 1:</b> the course consists of 4 ECTS theoretical + 4 ECTS of Clinical Stays</p> <p><b>Note 2:</b> a level of Spanish B2 is required</p> <p><b>Course content/Units:</b></p> <p><b>PNEUMOLOGY</b></p> <ul style="list-style-type: none"> <li>• Unit 1. Respiratory failure: concept, classification, etiopathogenesis.</li> <li>• Unit 2. Acute respiratory failure.</li> <li>• Unit 3. Functional respiratory examination I: spirometry and bronchodilator test.</li> <li>• Unit 4. Chronic obstructive pulmonary disease (COPD) I: concept, diagnosis, etiopathogenesis, clinical and classification.</li> <li>• Unit 5. Chronic Obstructive Pulmonary Disease (COPD) II: Treats</li> <li>• Unit 6. Chronic obstructive pulmonary disease (COPD) II: treatment. Smoking. Oxygen therapy</li> <li>• Unit 7. Bronchial Asthma I</li> <li>• Unit 8. Bronchial Asthma II</li> <li>• Unit 9. Hypersensitivity lung disease. Chronic cough.</li> <li>• Unit 10. Upper respiratory infections/tracheobronchitis. Pneumonias: concept, Etiopathogenesis and classification.</li> <li>• Unit 11. Community-acquired pneumonia. Nosocomial pneumonias. Aspiration pneumonia. Lung abscess: bronchoscopy.</li> <li>• Unit 12. Lung infections in immunocompromised patients. Other Respiratory infections: fungi, parasites.</li> <li>• Unit 13. Pulmonary tuberculosis: epidemiology, etiopathogenesis and clinical forms, diagnosis and treatment. Nontuberculous mycobacteria. Techniques in the diagnosis of respiratory infection.</li> <li>• Unit 14. Bronchiectasis. Adult cystic fibrosis. Hemoptysis.</li> <li>• Unit 15. Sleep apnea syndrome.</li> <li>• Unit 16. Breathing disturbances during sleep. Mechanical ventilation does not Invasive</li> <li>• Unit 17. Diffuse interstitial lung disease: concept and classification. Differential diagnosis. Idiopathic pulmonary fibrosis. Sarcoidosis.</li> <li>• Unit 18.- Pulmonary Involvement in Systemic Diseases I: Eosinophilias pulmonary, vasculitis. Pulmonary hemorrhages.</li> <li>• Unit 19. Pulmonary Involvement in Systemic Diseases II: connective tissue diseases. Pneumoconiosis. Other little (histiocytosis X, lymphangioleiomyomatosis, vascular malformations).</li> <li>• Unit 20. Thromboembolic disease.</li> <li>• Unit 21. Pulmonary hypertension: etiopathogenesis, clinical, diagnosis and treatment.</li> <li>• Unit 22. Lung cancer: epidemiology, risk factors. staging and Evaluation of the patient with pulmonary nodules.</li> <li>• Unit 23. Solitary pulmonary nodule. Preoperative assessment of the patient with lung cancer.</li> <li>• Unit 24. Pleural pathology: study and diagnosis. Pleural Pathology: Pathology infectious, systemic.</li> </ul> <p><b>THORACIC SURGERY</b></p> <ul style="list-style-type: none"> <li>• Unit 1. Surgical pleural pathology.</li> <li>• Unit 2. Surgical pathology of the diaphragm and chest wall.</li> <li>• Unit 3. Chest trauma.</li> <li>• Unit 4. Congenital pulmonary malformations.</li> <li>• Unit 5. Surgical pathology of the mediastinum.</li> <li>• Unit 6. Surgical Tracheobronchial Pathology and Lung Transplantation</li> <li>• Unit 7. Staging of lung carcinoma. Neuroendocrine carcinomas of lung.</li> <li>• Unit 8. Treatment of non-small cell bronchogenic carcinoma.</li> <li>• Unit 9. Lung metastases and other benign and malignant lung tumors.</li> </ul> <p><b>Specific competencies:</b></p> <ul style="list-style-type: none"> <li>• SC 3.1.11 Recognize, diagnose and guide the management of the main pathologies of the Respiratory system.</li> <li>• SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning</li> <li>• SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning</li> <li>• SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to</li> </ul>						

most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>4th</b>	Course code: <b>9998001409</b>	Course: <b>Digestive system (Aparato digestivo)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>8 ECTS</b>
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**Note 1:** the course consists of 4 ECTS theoretical + 4 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

**ESOPHAGEAL MODULE**

- Unit 1. Esophageal diseases. Gastroesophageal reflux disease. Barrett's esophagus.
- Unit 2. Other causes of esophagitis.
- Unit 3. Dysphagia and other motor disorders of the esophagus.
- Unit 4. Esophageal surgery

**STOMACH MODULE**

- Unit 5. Acute and chronic gastritis. Hypersecretory states. Helicobacter pylori infection.
- Unit 6. Dyspepsia. Gastroduodenal peptic ulcer. Gastropathy due to NSAIDs. Upper gastrointestinal bleeding.
- Unit 7 Gastric Surgery.
- Unit 8. Lower Gastrointestinal Bleeding and Gastrointestinal Bleeding of Occult Origin.

**INTESTINE MODULE**

- Unit 9. Chronic constipation. Chronic diarrhea. Irritable bowel syndrome.
- Unit 10. Acute diarrhea. Intestinal infections.
- Unit 11. Malabsorption and Maldigestion Syndrome. Celiac disease.
- Unit 12. Inflammatory bowel disease. Crohn's disease. Ulcerative colitis.
- Unit 13. Polyps, polyposis, and hereditary syndromes. Colorectal Cancer Screening
- Unit 14. Colorectal cancer.
- Unit 15. Surgical pathology of the small intestine, colon and rectum.
- Unit 16. Intestinal and colonic ischemia.
- Unit 17. Acute abdomen and abdominal trauma.
- Unit 18. Pathology of the abdominal wall, splenic pathology and retroperitoneum.

**LIVER MODULE**

- Unit 19. Liver diseases. Diagnosis of liver diseases. Cytolysis, cholestasis and jaundice.
- Unit 20. Viral hepatitis.
- Unit 21. Autoimmune liver diseases. Hemochromatosis and other metabolic storage diseases.
- Unit 22. Alcoholic liver disease. Non-alcoholic steatosis and steatohepatitis.
- Unit 23. Cirrhosis of the liver.
- Unit 24. Complications of liver cirrhosis.
- Unit 25. Toxic hepatitis. Acute liver failure. Medical indications for liver transplantation.
- Unit 26. Hepatic vascular disease.
- Unit 27. Liver surgery

**PANCREAS MODULE**

- Unit 28. Acute and chronic pancreatitis.
- Unit 29. Bile duct pathology.
- Unit 30. Pancreatic surgery

**Specific competencies:**

- SC 3.1.8 Recognize, diagnose and guide the management of the main pathologies of the apparatus digestive
- SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning
- SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>4th</b>	Course code: <b>9998001410</b>	Course: <b>Hemantology (<i>Hematología</i>)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
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**Note 1:** the course consists of 3,5 ECTS theoretical + 3,5 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

- Item 1. Introduction to hematology. Structure and function of hematopoietic organs: hematopoiesis. Morphology and function of erythrocytes, granulocytes, monocytes, lymphocytes and platelets.
- Item 2. Iron metabolism disorders: iron deficiency anemia. Hemochromatosis. Anemias congenital sideroblastics.
- Item 3. Megaloblastic anemias. Anemia associated with chronic disorders. Mechanism anemias multiple (anemias associated with systemic diseases). Dyserythropoietic anemias Congenital.
- Item 4. Disorders of hemoglobin synthesis. Structural hemoglobinopathies. Thalassemias/thalassemia syndromes. Porphyrias.
- Item 5. Hemolytic anemias I: concept, general aspects, classification. Hemolytic anemias Congenital: membranopathies, enzymopathies.
- Item 6. Acquired hemolytic anemias II: immune. Non-immune (mechanical, microangiopathy). Thrombotic thrombocytopenic purpura. Hemolytic uremic syndrome.
- Item 7. Non-neoplastic alterations of the hematopoietic multipotent progenitor cell: classification. Bone marrow aplasia. Paroxysmal nocturnal hemoglobinuria.
- Item 8. Neutropenia, neutrophilia, agranulocytosis. Functional alterations of granulocytes.
- Item 9. Pathology of the mononuclear phagocytic system: histiocytosis, hemophagocytic syndromes, Storage Diseases
- Item 10. Drugs and therapeutic strategy in oncohematology.
- Item 11. General aspects of chronic myeloproliferative neoplasms: polycythemia vera, secondary polyglobulias.
- Item 12. Chronic myeloproliferative syndromes/neoplasms: chronic myeloid leukemia. Essential thrombocythemia.
- Item 13. Chronic myeloproliferative syndromes/neoplasms. Primary/idiopathic myelofibrosis. Eosinophilia and eosinophilic syndromes. Mastocytosis.
- Item 14. Myelodysplastic syndromes. Myelodysplastic/myeloproliferative syndromes (pictures intermediate).
- Item 15. Acute leukemias: definition, general aspects, classifications/types. Myeloid leukemia acute.
- Item 16. Acute lymphoid leukemia.
- Item 17. Classification of lymphocyte diseases. Lymphocytosis and lymphopenia. Immunodeficiencies. Mononucleotic syndromes. Polyadenopathic syndromes
- Item 18. Chronic lymphoproliferative syndromes. Chronic lymphocytic leukemia. Other syndromes Symphonatives with leukemic expression (tricholeukemia, prolymphocytic leukemia, others).
- Item 19. Lymphomas: general aspects, classifications, diagnostic studies, prognostic indices.
- Item 20. LNH B indolent. Cutaneous lymphomas.
- Item 21. Aggressive NHL B.
- Item 22. Hodgkin lymphoma.
- Item 23. Monoclonal gammopathies: general aspects, diagnostic studies. Classifications. Monoclonal gammopathy of uncertain significance. Multiple myeloma.
- Item 24. Other monoclonal gammopathies: waldenström's macroglobulinemia, amyloidosis primary diseases, heavy chain diseases, monoclonal cryoglobulinemias, POEMS.
- Item 25. Hematopoietic transplantation: definition and general aspects.
- Item 26. Physiology of coagulation. Clinical and laboratory examination of hemostasis. Classification of hemostasis disorders.
- Item 27. Platelet abnormalities: thrombocytopenias, thrombocytosis, thrombocytopathies. Purple Vascular.
- Item 28. Coagulation disorders: congenital and acquired coagulopathies.
- Item 29. Thrombosis and hypercoagulability. Thrombophilia/hypercoagulability states. Prophylaxis and Antithrombotic treatment: antiplatelets, anticoagulants and fibrinolytics.
- Item 30. Blood transfusion: immunological principles (immunoematology). Groups Blood. Procurement, storage and clinical use of blood products. Procedures Cytapheresis and plasmapheresis

**Specific competencies:**

- SC 3.1.2: Recognize, diagnose and guide the management of the main pathologies of the blood.
- SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning
- SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to

most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>4th</b>	Course code: <b>9998001411</b>	<b>Infectious pathology &amp; Clinical microbiology</b> ( <i>Patología Infecciosa y Microbiología Clínica</i> )	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>8 ECTS</b>
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**Note 1:** the course consists of 5 ECTS theoretical + 3 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

**MODULE 1. INTRODUCTION TO INFECTIOUS DISEASES (11%)**

- Item 1. Host-microbe relationship.
- Item 2. Fever. Fever of unknown origin. Fever and rash.
- Item 3. Prevention and vaccines.
- Item 4. Laboratory and infectious diseases.
- Item 5: Antibiotics.

**MODULE 2. ORGAN AND SYSTEM INFECTIONS (45%)**

- Item 6. Upper respiratory infections.
- Item 7. Flu and respiratory viruses.
- Item 8. Lower respiratory tract infections.
- Item 9. Endovascular infections I: bacteremia. Infective endocarditis.
- Item 10. Endovascular Infections II: Catheter-Associated Infections endovascular.
- Item 11. Sepsis and septic shock
- Item 12. Digestive tract infections I: oral infections, pharyngeal infections, esophagitis, and infectious gastritis.
- Item 13. Digestive tract infections II: viral hepatitis. Infections Intestinal.
- Item 14. Digestive tract infections III: intra-abdominal infections.
- Item 15. Urinary tract infections.
- Item 16. Sexually transmitted infections
- Item 17. Skin and soft tissue infections I.
- Item 18. Skin and soft tissue infections II.
- Item 19. Osteoarticular infections I: osteomyelitis. Infections of the spine vertebral.
- Item 20. Osteoarticular infections II: infectious arthritis. Infections associated with Joint prostheses. Diabetic foot associated infections.
- Item 21. Central Nervous System and Eye Infections

**MODULE 3: AGENT-SPECIFIC INFECTIONS (31%)**

- Item 22. Tuberculosis and other mycobacteria.
- Item 23. Typhoid fever. Brucellosis. Q fever.
- Item 24. Leptospirosis. Borreliosis. Yersinia infections.
- Item 25. Rickettsiosis. Chlamydia and Mycoplasma infections.
- Item 26. Herpes virus infections%)
- Item 27. Fungal infections.
- Item 28. Protozoan infections.
- Item 29. Helminth infections.
- Item 30. HIV infection.

**MODULE 4: INFECTIONS IN PATIENTS WITH UNDERLYING PATHOLOGIES (9%)**

- Item 31. Infections in immunosuppressed I.
- Item 32. Infections in immunosuppressed II.
- Item 33. Infections and surgery: surgical prophylaxis.

**MODULE 5: OTHER INFECTIOUS DISEASE TOPICS (4%)**

- Item 34. Infectious diseases and travel.
- Item 35. Emerging infectious diseases. Bioterrorism.
- Item 36. Vector-borne infectious diseases.
- Item 37. Infectious diseases associated with health care. Infections and Blood.

**Specific competencies:**

- SC 3.1.14 Know the main infectious agents and their mechanisms of action. Recognize diagnose and guide the management of the main infectious pathologies in the different organs and appliances. Recognize, diagnose and guide the management of the main pathologies of the immune system.
- SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning

- SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>4th</b>	Course code: <b>9998001412</b>	<b>Endocrine system</b> ( <i>Sistema endocrino</i> )	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
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**Note 1:** the course consists of 3,5 ECTS theoretical + 3,5 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

ENDOCRINOLOGY

DIABETES

- Item 1. Diabetes mellitus. Classification. Diagnosis. DM 1; Monogenic DM, DM Gestational, lipodystrophic DM.
- Item 2. Type 2 DM. Insulin resistance syndrome. Chronic complications of DM (Part 1).
- Item 3. Chronic complications of DM (Part 2).
- Item 4. Acute complications of DM.
- Item 5. Treatment of DM

THYROID AND PHOSPHOCALCIUM METABOLISM

- Topic 6. Thyroid physiology. Evaluation of thyroid function.
- Item 7. Hypothyroidism. Hyperthyroidism.
- Item 8. Thyroiditis.
- Item 9. Simple goiter. Benign and malignant thyroid neoplasms.
- Item 10. Hypercalcemia.
- Item 11. Hypocalcemia

HYPOTHALAMIC-PITUITARY PATHOLOGY

- Item 12. Functional examination of the pituitary gland.
- Item 13. Hypopituitarism. Nonfunctioning pituitary tumors.
- Item 14. Functioning pituitary tumors.
- Item 15. Pathology of the Neurohypophysis.
- Item 16. Impaired growth and puberty.

PATHOLOGY OF THE ADRENAL GLANDS

- Item 17. Physiology and functional exploration of the adrenal glands. Adrenal incidentaloma.
- Item 18. Congenital adrenal hyperplasia. Hirsutism.
- Item 19. Adrenal cortex disease. Cushing's syndrome.
- Item 20. Hypermineralocorticism. Primary hyperaldosteronism.
- Item 21. Adrenal insufficiency. Addison's disease
- Item 22. Adrenal medulla. Pheochromocytoma and paragangliomas.

MISCELLANEOUS

- Item 23. Male hypogonadism. Gynecomastia. Female hypogonadism.
- Item 24. Autoimmune polyglandular syndrome.
- Item 25. Lipoprotein metabolism disorder.
- Item 26. Nutrition & Va
- Item 27. Obesity.
- Item 28. Micronutrients: vitamins and minerals.
- Item 29. Eating disorders.
- Item 30. Neuroendocrine and gastroenteropancreatic tumors.

**Specific competencies:**

- SC 3.1.12. Recognize, diagnose and guide the management of the main pathologies of the system endocrine. Pathologies of nutrition
- SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning
- SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning

- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>4th</b>	Course code: <b>9998001413</b>	<b>Nephrology, Urology and the Male Genital System</b> ( <i>Nefrología, Urología y Aparato Genital Masculino</i> )	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
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**Note 1:** the course consists of 3,5 ECTS theoretical + 3,5 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

**NEPHROLOGY**

- Item 1. Anatomophysiological recollection.
- Item 2. Hydroelectrolyte and acid-base disorders.
- Item 3. Diagnostic orientation of patients with renal pathology and classification Syndromic.
- Item 4. Acute renal failure.
- Item 5. Chronic renal failure.
- Item 6. Glomerular nephropathy.
- Item 7. Renal involvement in systemic diseases.
- Item 8. Hereditary nephropathies.
- Item 9. Diabetic nephropathy.
- Item 10. The kidney in special situations.
- Item 11. High blood pressure.
- Item 12. Vascular nephropathy.
- Item 13. Tubulointerstitial nephropathy.
- Item 14. Tubulopathies.

**UROLOGY**

- Item 1. Urological propaedeutics. Diagnostic methods.
- Item 2. Obstructive uropathy: hydronephrosis.
- Item 3. Obstructive uropathy: prostatism.
- Item 4. Urinary incontinence.
- Item 5. Neurogenic bladder. Enuresis.
- Item 6. Urinary lithiasis. Renal colic.
- Item 7. Congenital anomalies of the urinary system.
- Item 8. Urinary tract infection I.
- Item 9. Urinary tract infection II.
- Item 10. Renal cell carcinoma.
- Item 11. Urothelial carcinoma.
- Item 12. Prostatic adenocarcinoma.
- Item 13. Testicular neoplasia. Penile carcinoma.
- Item 14. Genitourinary trauma.
- Item 15. Impotence and erectile dysfunction.

**Specific competencies:**

- SC 3.1.9 Recognize, diagnose and guide the management of the main pathologies nephrological.
- SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning
- SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>5th</b>	Course code: <b>9998001507</b>	Course: <b>Traumatology</b> ( <i>Traumatología</i> )	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
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**Note 1:** the course consists of 3.5 ECTS theoretical + 3.5 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

- Unit 1: bone and muscle physiology
- Unit 2: fracture overview, etiopathogenesis. classification of fractures, pathophysiology, clinical
- Unit 3: healing process, general treatment of fractures. complications.
- Unit 4: treatment of fractures: orthopedic; surgical: osteosynthesis, internal fixation, endomedullary nails, external fixators. open fractures
- Unit 5: fractures in children: bone physis, etiology, pathophysiology, classification and treatment
- Unit 6: joint trauma: closed and open. trauma of soft tissues: peripheral muscles, tendons, and nerves
- Unit 7: polytrauma
- Unit 8: compartment syndromes. pathology of the slides and gorges
- Unit 9: osteodystrophies and osteodysplasia. complex regional pain syndrome
- Unit 10: neuromuscular pathology in pediatric orthopedics. general principles of treatment
- Unit 11: adult brachial plexus palsy. brachial palsy obstetrics
- Unit 12: infections of the musculoskeletal system. arthritis, osteomyelitis, implant infections. infections of the spine: osteomyelitis, tuberculosis, implant infections
- Unit 13: aseptic bone necrosis. osteonecrosis, osteochondrosis, osteochondritis
- Unit 14: musculoskeletal system tumors i: primary bone tumors benign and malignant
- Unit 15: musculoskeletal system tumors ii: secondary bone tumors (metastasis). tumors of the spine
- Unit 16: musculoskeletal system tumors iii: soft tissue tumors benign and malignant
- Unit 17: pseudotumoral lesions
- Unit 18: shoulder girdle trauma: clavicle, scapula, dislocations of the shoulder, proximal end of the humerus, and humeral shaft
- Unit 19: elbow trauma: fractures and dislocations. fractures of forearm
- Unit 20: non-traumatic pathology of the shoulder girdle and elbow: shoulder painful, epitrochleitis, epicondylitis
- Unit 21: wrist and hand trauma: extreme distal ulna fracture and radio. carpal fractures and dislocations, fractures and dislocations of the metacarpals and phalanges
- Unit 22: non-traumatic pathology of the hand: congenital hand, hand rheumatics, rhizarthrosis, dupuytren's disease and pathology of parts soft
- Unit 23: pelvic girdle trauma: sacrum, pelvis, dislocation of the hip
- Unit 24: growing hip pathology i: developmental dysplasia. perthes disease
- Unit 25: growing hip pathology ii: femoral epiphysiolysis proximal. angular deformities of mmii in childhood
- Unit 26: fractures of the proximal end of the femur: subcapitals, pertrochanteres and femoral shaft
- Unit 27: non-traumatic hip pathology: hip osteoarthritis, necrosis avascular, painful hip of young adult, soft tissue pathology
- Unit 28: knee trauma: fractures of the distal end of the kneefemur, proximal end of tibia, fractures and dislocations of the patella
- Unit 29: soft tissue pathology of the knee: pathology of the apparatus extensor, meniscal and ligamentous injuries
- Unit 30: knee osteoarthritis, avascular necrosis
- Unit 31: leg and ankle trauma: diaphyseal fractures of the tibia, tibial pilon fractures, ankle fractures and dislocations, injuries ligamentous and tendon
- Unit 32: fractures and dislocations of the foot
- Unit 33: foot malformations and deformities: flat feet, cavus feet and foot zambo
- Unit 34: hallux-valgus, rigidus, metatarsalgia, hammertoes, fasciitis planting, talalgia
- Unit 35: spinal deformities and deviations: scoliosis, kyphosis, spondylolisthesis
- Unit 36: traumatic spinal injuries: fractures and cervical, dorsal and lumbar spine dislocations
- Unit 37: neck pain, low back pain, intervertebral disc pathology, nerve injuries

**Specific competencies:**

- SC 3.1.10 Recognize, diagnose and guide the management of the main pathologies traumatology of the musculoskeletal system.
- SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning
- SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to

most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>5th</b>	Course code: <b>9998001508</b>	Course: <b>Reumatology (<i>Reumatología</i>)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
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**Note 1:** the course consists of 3.5 ECTS theoretical + 3.5 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

- Unit 1: Rheumatology. Classification of diseases. Epidemiology
- Unit 2: Rheumatoid Arthritis I
- Unit 3: Rheumatoid Arthritis II. Palindromic rheumatism. RS3PE Syndrome
- Unit 4: Spondyloarthritis I: Concept. Classification according to ASAS criteria. Axial and peripheral spondyloarthropathies and undifferentiated spondyloarthropathy. Spondylitis
- Unit 5: Spondyloarthritis II: Psoriatic Arthropathy, Reactive Arthritis and Disorders rheumatology associated with ulcerative colitis and Crohn's disease
- Unit 6: Rheumatological Pathology in Paediatrics
- Unit 7: Crystal Arthritis I: Gout
- Unit 8: Crystal Arthritis II: Crystal Deposition Disease
- Unit 9: Infectious Arthritis I: Bacterial Arthritis. Special Clinical Forms: Arthritis Neisseria, brucellosis, acute spondylodiscitis and others
- Unit 10: Infectious Arthritis II: Osteoarticular Tuberculosis. Lyme Disease Arthritis Infectious III. Viral arthritis. Rheumatological manifestations of virus infection of human immunodeficiency
- Unit 11: Systemic Vasculitis I: Concept. Chapel Hill classification. Vasculitis of the vessel big
- Unit 12: Systemic Vasculitis II: Polyarteritis Nodosa Vasculitis. Granulomatosis eosinophilic with polyangiitis. Microscopic polyangiitis. Granulomatosis with polyangiitis
- Unit 13: Systemic Vasculitis III: Small Vessel Vasculitis
- Unit 14: Connective Tissue Diseases: Classification. LES I
- Unit 15: LES II
- Unit 16: Inflammatory Myopathies
- Unit 17: Systemic sclerosis and related conditions
- Unit 18: Sjögren's syndrome. Overlapping syndromes
- Unit 19: Osteoarthritis I
- Unit 20: Metabolic Bone Diseases I: Osteoporosis
- Unit 21: Metabolic Bone Diseases II: Osteomalacia. Paget's Disease of Bone
- Unit 22: Fibromyalgia
- Unit 23: Hereditary Connective Tissue Diseases
- Unit 24: Drugs in rheumatology

**Specific competencies:**

- SC 3.1.10 Recognize, diagnose and guide the management of the main pathologies rheumatology of the musculoskeletal system.
- SC 3.2.1 - Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning
- SC 3.2.2 - Know how to perform a physical examination using apparatus and systems, as well as a psychopathological exploration, interpreting its meaning
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>5th</b>	Course code: <b>9998001510</b>	Course: <b>Nervous system (<i>Sistema nervioso</i>)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>7 ECTS</b>
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**Note 1:** the course consists of 3.5 ECTS theoretical + 3.5 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**



- Unit 1. Neurology. 1.1: Approach of the patient with neurological disease. Headaches. 1.2: Epilepsy. 1.3: Cerebral vascular pathology. 1.4: Disorders of consciousness. 1.5: Dementias. 1.6: Movement disorders or diseases of the extrapyramidal system. 1.7: Hereditary and acquired ataxias. 1.8: Autoimmune inflammatory diseases of the CNS.. 1.9: Motor neuron diseases. Amyotrophic lateral sclerosis. 1.10: Pathology of the Peripheral Nervous System (PNS). 1.11: Neuromuscular junction diseases: Myasthenia gravis and other syndromes Myastheniformes. 1.12: Muscular diseases: Myopathies. 1.13: Electrophysiological diagnosis of neuromuscular pathology. 1.14: Polysomnography. Neurological sleep disorders. 1.15: Diagnostic imaging of the pathology of the nervous system. 1.16: Neurological pathology associated with systemic and toxic-metabolic disease.
- Unit 2. Neurocirughy. 2.1: Main cranioencephalic and spinal malformations (spina bifida). 2.2: Hydrocephalus and other alterations of the circulation of cerebrospinal fluid. 2.3: Subarachnoid hemorrhage. Aneurysms and arteriovenous malformations Intraparenchymal hemorrhages. 2.4: Brain tumors. 2.5: Spinal cord tumors. 2.6: Traumatic brain injury: general aspects. Fractures. Cerebral edema posttraumatic. 2.7: Spinal cord injuries. 2.8: Degenerative pathology of the cervical and lumbar spine. 2.9: Functional neurosurgery. Surgical treatment of pain, epilepsy and Parkinson's disease.
- Unit 3. Neurology seminars. SEMINAR 1: STUDY OF CEREBROSPINAL FLUID. SEMINAR 2: NEUROLOGICAL EXAMINATION. SEMINAR 3: EEG AND EMG. SEMINAR 4: Evaluation of cognitive functions. SEMINAR 5: Clinical evaluation of the patient with stroke

**Specific competences:**

- SC 3.1.13 Recognise, diagnose and guide the management of the main pathologies of the system central and peripheral nervous.
- SC 3.2.1 Know how to make a complete anamnesis, centered on the patient and oriented to the various pathologies, interpreting their meaning.
- SC 3.2.2 Know how to perform a physical examination by apparatus and systems, as well as an examination psychopathological, interpreting its meaning.
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year:	Course code:	Course:	Program:	Term:	Teaching Language:	Cr:
5th	9998001511	Psychiatry ( <i>Psiquiatría</i> )	Bachelor's Degree in Medicine	Semester 1 or Semester 2	Spanish	7 ECTS

**Note 1:** the course consists of 3.5 ECTS theoretical + 3.5 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

- Unit 1: Introduction. Historical and Conceptual Aspects of Psychiatry.
- Unit 2: Fundamentals of Psychiatry I. BIOLOGICAL.
- Unit 3: Fundamentals of Psychiatry II. PSYCHOLOGICAL.
- Unit 4: Fundamentals of Psychiatry III. SOCIAL.
- Unit 5: Psychiatric interview. Psychopathological examination and complementary tests.
- Unit 6: Psychopathological syndromes.
- Unit 7: Classifications in psychiatry.
- Unit 8: Organic Mental Disorders. Dementias (mild-severe neurocognitive disorder), delirium (confusional syndrome) and non-drug-induced organic amnesic disorder Psychotropic.
- Unit 9: Disorders related to the use of psychotropic substances: Alcohol.Psychostimulants. Cannabis. Cocaine. Hallucinogens. Opiates. Volatile solvents. Nicotine.
- Unit 10: Schizophrenia and other psychotic disorders.
- Unit 11: Mood disorders. Bipolar disorder and cyclothymia, unipolar depression and others.
- Unit 12: Generalized anxiety disorders. Panic disorders. Phobias. OCD (OCD Disorder) Obsessive Compulsive). Acute and post-traumatic stress disorder. Adjustment disorders.
- Unit 13: Dissociative and Conversion Disorders.
- Unit 14: Somatoform disorders.
- Unit 15: Eating disorders.
- Unit 16: Sleep disorders.
- Unit 17: Sexual dysfunctions and gender identity disorder. Disorders control of Impulses.
- Unit 18: Personality disorders.
- Unit 19: Child psychiatry.
- Unit 20: Psychiatric emergencies.

- Unit 21: Psychogeriatrics
- Unit 22: Normal and Pathological Grief
- Unit 23: Psychiatric treatments.
- Unit 24: Hospital and community psychiatric care.
- Unit 25: Ethics and legislation.

**Specific competences:**

- SC 27 Recognize, diagnose and guide the management of the main pathologies of the central nervous system and peripheral.
- SC 3.1.16. Know the biological, psychological, and social foundations of personality and behavior.
- Recognize, diagnose and guide the management of psychiatric disorders. Psychotherapy.
- SC 3.2.1 Know how to make a complete anamnesis, centered on the patient and oriented to the various pathologies, interpreting their meaning.
- SC 3.2.2 Know how to perform a physical examination by apparatus and systems, as well as an examination psychopathological, interpreting its meaning.
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>5th</b>	Course code: <b>9998001512</b>	Course: <b>Pediatrics (<i>Pediatría</i>)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>12 ECTS</b>
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**Note 1:** the course consists of 6 ECTS theoretical + 6 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

- Topic 1 Introduction to the study of pediatrics.
- Topic 2 Nutritional requirements in pediatrics. Infant, infant and child feeding Adolescent Alterations in nutrition. Malnutrition. Obesity. Anorexia. Bulimia.
- Topic 3: Somatometry. Assessment of growth and nutritional status. Detection of Pathology in weight-statural development. Growth and study of alterations of the most common growth disorders
- Topic 4 Sexual differentiation and maturation. Normal and pathological puberty. States Intersex.
- Topic 5 Prenatal pathology. General concepts. Monogenic diseases. Advice genetic. Prenatal diseases caused by exogenous agents.
- Topic 6 Most common chromosomal pathies. Disease prevention and treatment Congenital. Newborn screening.
- Topic 7 Concept and characteristics of the newborn. Preterm newborn. Newborn underweight. Most common metabolic disorders in the neonate.
- Topic 8 Perinatal asphyxia. Hypoxic-ischemic encephalopathy. Obstetric Trauma: Prevention and treatment.
- Topic 9 Respiratory pathology in the newborn.
- Topic 10 Infections of the fetus and newborn.
- Topic 11 Neonatal jaundice. Hematologic disorders of the newborn
- Topic 12 The rights of the child. Informed consent. Child Abuse
- Topic 13 The Healthy Child. Health habits and prevention. Health screenings. Immunizations in childhood. Sudden infant death
- Topic 14 Normal psychomotor development. Intellectual disability. Psychopathology in childhood. ADHD.
- Topic 15 Adolescence. Prevention of risky behaviors. Behavioral disturbances Food.
- Topic 16 Accidents and poisonings in childhood. Prevention and treatment.
- Topic 17 Pediatric patient care in the emergency room. Pediatric Evaluation Triangle. Severe clinical syndromes most common in paediatric emergency departments.
- Topic 18 Seminar class. Fever without focus. Fever of unknown origin and relapsing fever
- Topic 19 Sepsis in Childhood: Septic Shock.
- Topic 20 Meningitis and encephalitis.
- Topic 21 Exanthematous diseases
- Topic 22 Protozoan infections. Parasitosis. Other viral infections: Adenovirus, virus respiratory diseases, enteroviruses. Influenza (A and B), EBV, CMV.
- Topic 23 Immune system in the child. Congenital immunodeficiencies. Immunodeficiencies
- Acquired. Infections in the immunocompromised child. AIDS
- Topic 24 Collagenosis: Juvenile Idiopathic Arthritis. Vasculitis: Kawasaki disease.

- Topic 25 Seminar class. Most common orthopedic disorders in children. Lameness in the child. Synovitis. Arthritis. Osteomyelitis
- Topic 26 Pathology of the upper airway. Upper respiratory distress. Croup. Acute laryngotracheobronchitis. Epiglottitis. Bacterial tracheitis. Body strange. Pharyngotonsillitis. adenoiditis, otitis, sinusitis.
- Topic 27 Pathology V. Inferior Resp I: Acute Bronchiolitis. Acute bronchitis. Pertussis.
- Topic 28 Asthma. Cystic fibrosis.
- Topic 29 Pneumonia in childhood. Tuberculosis in childhood.
- Topic 30 Cardiological examination. Heart failure. Syncopes
- Topic 31 Most common heart diseases in childhood.
- Topic 32 Vomiting in the infant. Gastroesophageal reflux. Allergy to cow's milk proteins.
- Topic 33 Acute diarrhoea. Acute gastroenteritis. Malabsorption of sugars. Dehydration.
- Topic 34 Chronic diarrhoea. Malabsorption syndrome. Celiac disease.
- Topic 35 Acute, chronic and recurrent abdominal pain. Acute abdomen. Constipation.
- Topic 36 Acute and chronic hepatitis. Pathology
- Topic 37 Metabolic diseases.
- Topic 38 Diabetes Mellitus.
- Topic 39 Thyroid Pathology. Cortico-adrenal pathology.
- Topic 40 Disorders of bone metabolism. Alterations in phosphocalcium metabolism. Rickets. More common bone dysplasias.
- Topic 41 Urinary tract infection (UTI). Vesicoureteral reflux. Chronic renal failure.
- Topic 42 Hematuria. Glomerulonephritis. HTA. Acute renal failure
- Topic 43 Proteinuria and Nephrotic Syndrome.
- Topic 44 Tubulopathies. Polycystic disease
- Topic 45 Convulsions in Childhood. Epilepsy.
- Topic 46 Headache. Intracranial hypertension. Coma
- Topic 47 Neuromuscular pathology.
- Topic 48 Anemia in childhood. Coagulopathies, thrombopathies and angiopathies
- Topic 49 Leukemias and Lymphomas.
- Topic 50 Solid tumors. Kidney tumors. CNS tumors. Wilms. Neuroblastomas
- Topic 51 Most important surgical malformations in pediatrics. Surgical Calendar

**Specific competences:**

- SC 3.1.15 Know the morphofunctional characteristics of the newborn, the child and the adolescent. Growth. Premature newborn. Recognize, diagnose and guide the management of the main paediatric pathologies. Child nutrition. Diagnosis & Genetic counseling. Cognitive, emotional and psychosocial development in childhood and adolescence.
- SC 3.2.1 Know how to make a complete anamnesis, centered on the patient and oriented to the various pathologies, interpreting their meaning.
- SC 3.2.2 Know how to perform a physical examination by apparatus and systems, as well as an examination psychopathological, interpreting its meaning.
- SC 3.3.3 Know how to assess the modifications of the clinical parameters in the different Ages.
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>5th</b>	Course code: <b>9998001513</b>	Course: <b>Dermatology (Dermatología)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>8 ECTS</b>
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**Note 1:** the course consists of 4 ECTS theoretical + 4 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

- Topic 1: Dermatological medical history. Primary Clinical Elemental Injuries
- Topic 2 Zooparasitosis: pediculosis, scabies, dermatoses by insects and arachnids. Button fever. Leishmaniasis. Diagnosis and therapeutic management.
- Topic 3 Most common superficial cutaneous mycoses: Pityriasis versicolor, dermatophytosis and mucocutaneous candidiasis
- Topic 4 Bacterial skin infections.

- Topic 5 Leprosy. Cutaneous tuberculosis. Atypical mycobacteriosis
- Topic 6 Diseases caused by viruses
- Topic 7 Sexually transmitted diseases
- Topic 8: Urethritis. Main manifestations of HIV infection
- Topic 9 Psoriasis
- Topic 10 OTHER SQUAMOUS ERYTHEMATOUS DERMATOSES: Lichen ruber planus. Gibert's Pityriasis Rososa
- Topic 11 ERYTHRODERMA
- Topic 12 Keratinization Disorders
- Topic 13 BULLOUS I.- Autoimmune bullous dermatoses: pemphigus
- Topic 14 BULLOUS II.- Autoimmune bullous dermatoses: Pemphigoids, dermatitis herpetiformis, linear IgA bullous dermatitis (infantile and adult)
- Topic 15 Acne vulgaris. Acneiform rashes. Rosacea. Perioral dermatitis. Hidradenitis
- Topic 16 Diseases of the hair and pilosebaceous follicle.
- Topic 17 Pigmentation disorders
- Topic 18 Eczema. Seborrheic dermatitis
- Topic 19 Irritative and allergic contact eczema
- Topic 20 Urticaria and angioedema
- Topic 21 Toxicoderma. Photodermatosis
- Topic 22 Panniculitis and Vasculitis
- Topic 23 Autoimmune connective tissue diseases
- Topic 24 Most common benign skin tumors
- Topic 25 Malignant epithelial tumors
- Topic 26 Benign Melanocytic Tumors
- Topic 27 Cutaneous melanoma
- Topic 28 Cutaneous T and B lymphomas: mycosis fungoides, Sézary syndrome, lymphoma primary cutaneous b. Lymphomatoid papulosis
- Topic 29 Systemic and haematological diseases
- Topic 30 Sarcoidosis and Mastocytosis

**Specific competences:**

- SC 3.1.1. Recognize, diagnose and guide the management of the main skin pathologies
- SC 3.2.1 Know how to make a complete anamnesis, centered on the patient and oriented to the various pathologies, interpreting their meaning.
- SC 3.2.2 Know how to perform a physical examination by apparatus and systems, as well as an examination psychopathological, interpreting its meaning.
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>5th</b>	Course code: <b>9998001505</b>	Course: <b>Medical Therapeutics (Terapéutica Médica)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Semester 1 or Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

BETTER USE OF MEDICATIONS AND INDIVIDUALIZED PRESCRIPTION.

- Unit 1. Clinical pharmacokinetics and pharmacodynamics.
- Unit 2. Physiological situations that modify the response.
- Unit 3. Pathological situations that modify the response. Kinetic and dynamic changes.

EVALUATION OF THE SAFETY, EFFICACY AND EFFICIENCY OF MEDICINES.

- Unit 4. Adverse drug reactions. Pharmacovigilance Systems

CRITERIA FOR CORRECT PRESCRIBING IN THE MOST PREVALENT THERAPEUTIC GROUPS.

- Unit 5. Importance of the vegetative system.
- Unit 6. Criteria for the selection and use of drugs in the treatment of inflammation.
- Unit 7. Management of acute pain and chronic pain.
- Unit 8. Insomnia management. Depression and anxiety
- Unit 9. Management of antihypertensive drugs. Management of HTA
- Unit 10. Diuretics. Renal impairment

- Unit 11. Heart Failure
- Unit 12. Ischemic heart disease.
- Unit 13. Criteria for the selection and use of drugs in respiratory pathology. Asthma and COPD
- Unit 14. Management of beta-blockers (BB) and calcium channel blockers (CCBs)
- Unit 15. Management of antiplatelet and anticoagulation. Managing Bleeding by Treatment anticoagulant.
- Unit 16. Venous thromboembolic disease.
- Unit 17. Management of Digestive System Disorders I: Gastrointestinal Bleeding
- Unit 18. Management of Digestive System II Disorders: Liver Cirrhosis and Its Complications
- Unit 19. Comprehensive Management of Cardiovascular Risk Factors I: Diabetes
- Unit 20. Comprehensive Management of Cardiovascular Risk Factors II: Dyslipidemia and Global Assessment
- Unit 21. Criteria for the selection and use of antibiotics. Kinetic and dynamic criteria. PKPD indicators. Post-antibiotic effect. Prophylaxis. Antibiotic associations. Sequential therapy with antimicrobials.
- Unit 22. Antianemics. Iron. Vitamin B12. Folic acid. Erythropoiesis-stimulating agents. Indications for transfusions.
- Unit 23. Hydroelectrolyte disorders and fluid therapy management.
- Unit 24. Osteoporosis and antigouts

**Specific competences:**

- SC 4.1.1 Assess the risk/benefit ratio of diagnostic and therapeutic procedures.
- SC 4.2.4 Know how to interpret a radiological image by means of systematic reading. Know how to use the various drugs appropriately. Know how to perform and interpret an electrocardiogram and electroencephalogram
- SC 4.2.5 Write correct medical prescriptions, adapted to the situation of each patient and the
- Legal Requirements

Year: <b>6th</b>	Course code: <b>9998001608</b>	Course: <b>Gynecology and Obstetrics</b> <i>(Ginecología y obstetricia)</i>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>8 ECTS</b>
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**Note 1:** the course consists of 5 ECTS theoretical + 3 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

OBSTETRICS

I: Normal pregnancy and childbirth

- Unit 1: Normal gestation. Maternal adaptations to normal gestation. Fetal physiology. Physiology of the placenta and ovular appendages.
- Unit 2: Antenatal care of normal gestation.
- Unit 3: Prenatal diagnosis. Congenital anomalies and aneuploidies. Teratology
- Unit 4: Genetics in prenatal diagnosis. Legal Termination of Pregnancy
- Unit 5: Evolution and phases of normal labor.
- Unit 6: Attendance at normal childbirth. Management of the partogram.

II: Pathology of childbirth and tocurgia.

- Unit 7: Induction of labor: indications and methods.
- Unit 8: Dystocias of birth: dynamic, situational, fetal and bone.
- Unit 9: Instrumental childbirth. Caesarean section.
- Unit 10: External cephalic version. Delivery by previous cesarean section. Uterine rupture
- Unit 11: Perineal Tears: Classification and Management. Amniotic fluid embolism.
- Unit 12: Assessment of intrapartum fetal well-being. Risk of loss of fetal well-being.
- Unit 13: Physiological puerperium. Nursing. Pathology of childbirth. Pathology of the puerperium and Nursing.

III-Fetal pathology

- Unit 14. Intrauterine growth retardation. Large fetus. Doppler in obstetrics.
- Unit 15: Congenital infections. Toxoplasmosis. Parvovirus B19. Syphilis. HIV. Herpesvirus, chickenpox. Rubella. Viral hepatitis. Hepatitis B and C.
- Unit 16: Congenital infections: CMV. Emerging infections (Zika, Chagas).
- Unit 17: Rh Isoimmunization.

IV-Pathology of pregnancy

- Unit 18: Pregnancy of uncertain location. Abortion. Ectopic gestation. Trophoblastic disease of the gestation (TSG).
- Unit 19. Placental pathology. Abnormalities of the amniotic fluid and umbilical cord. Premature rupture of Membranes.
- Unit 20. Threat of preterm labor.
- Unit 21. Multiple gestation

V-Maternal pathology associated with pregnancy

- Unit 22. Hypertensive states of pregnancy.

- Unit 23. Immunizations and pregnancy.
- Unit 24. Diabetes and pregnancy. Preimplantation genetic diagnosis (PGD).
- Unit 25. Cardiorespiratory, haematological and gestation pathologies
- Unit 26. Nephrourological and digestive pathology and pregnancy.
- Unit 27. Autoimmune, thyroid, neuropsychiatric, dermatological and gestational pathologies.
- Unit 28. Surgical pathology and trauma. Maternal oncology and pregnancy.

#### GINECOLOGY

- Unit 31. Gynecological screening. Diagnostic techniques in Gynecology.
- Unit 37. Amenorrhea (I). Amenorrhea of central and endocrine origin.
- Unit 38. Amenorrhea (II). Polycystic ovary syndrome. Peripheral hyperandrogenisms.
- Unit 39. Amenorrhea (III). Early ovarian failure. Uterine amenorrhea.
- Unit 39. Amenorrhea (III). Early ovarian failure. Uterine amenorrhea.
- Unit 42. Intersex states. Malformations of the female genital tract
- Unit 33. Contraception (I). Classification of contraception. Natural methods. Barrier methods. Intrauterine contraception. Occlusion techniques.
- Unit 34. Contraception (II). Hormonal contraception. Postcoital contraception
- Unit 35. Menopause
- Unit 36. Dysfunctional uterine bleeding.
- Unit 37. Benign pathology of the uterine body. Myomas.
- Unit 38. Dysmenorrhea. Chronic pelvic pain. Sexual dysfunctions
- Unit 39. Endometriosis
- Unit 40. Sterility. Study of the infertile couple.
- Unit 41. Assisted reproduction techniques
- Unit 44. Pelvic floor pathology. Genital fistulas.
- Unit 45. Genital infections (I). Vulvovaginitis.
- Unit 46. Genital infections (II). Human papillomavirus. Herpes. Chancroid.
- Unit 47. Genital infections (III). Gonorrhea and chlamydia. Pelvic inflammatory disease
- Unit 48. Vulvar dystrophies. Preneoplastic diseases of the vulva and vagina.
- Unit 49. Malignant tumor pathology of the vulva and vagina
- Unit 50. Benign tumors of the cervix. Cervical preneoplastic lesions.
- Unit 51. Invasive cancer of the cervix.
- Unit 52. Benign endometrial lesions. Endometrial hyperplasias.
- Unit 54. Adenocarcinoma of the endometrium. Uterine sarcomas.
- Unit 55. Gestational trophoblastic pathology. Trophoblastic tumors.
- Unit 56. Ovarian tumor pathology (I). Epithelial tumors.
- Unit 57. Ovarian tumor pathology (II). Other ovarian tumors.
- Unit 58. Benign breast pathology.
- Unit 59. Breast cancer (I). Epidemiology and risk factors. Clinic. Diagnosis
- Unit 60. Breast cancer (II). Clinical management. Recurrences. Prevention.

#### Specific competencies:

- SC 3.1.3 Normal and pathological pregnancy and childbirth. Puerperium. Sexually transmitted diseases. Recognize, diagnose and guide the management of the main gynecological pathologies. Contraception and fertilization.
- SC 3.2.1 Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning.
- SC 3.2.2 Know how to perform a physical examination by apparatus and systems, as well as an examination psychopathological, interpreting its meaning.
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>6th</b>	Course code: <b>9998001611</b>	Course: <b>Emergency and Toxicology</b> <i>(Urgencias y toxicología)</i>	Program: <b>Bachelor's Degree in</b> <b>Medicine</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note 1:** the course consists of 3 ECTS theoretical + 3 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

- Unit 1. Emergency Services.
- Unit 2. Headaches. Management of dizziness, syncope, and vertigo.
- Unit 3. Patient in coma.
- Unit 4. Delirium and confusional syndrome.
- Unit 5. Neurological emergencies.
- Unit 6. Cardiology emergencies I.
- Unit 7. Cardiology emergencies II.
- Unit 8. Vascular emergencies.
- Unit 9. Respiratory emergencies.
- Unit 10. Digestive-abdominal emergencies. Gastrointestinal bleeding. Gastrointestinal bleeding
- Unit 11. Urological emergencies
- Unit 12. Acute renal failure, electrolyte imbalances, and acid-base disorders.
- Unit 13. Sepsis.
- Unit 14. Shock, anaphylaxis, and urticaria-angioedema.
- Unit 15. Urgent endocrinological disorders.
- Unit 16. Care for polytrauma and burn patients:
- Unit 17. Toxicology. General principles.
- Unit 18. Drug poisoning.
- Unit 19. Intoxication by drugs of abuse.
- Unit 20. Poisoning by man-made and natural environmental agents

**Specific competencies:**

- SC3.1.17 Recognize, diagnose and guide the management of the main Poisoning. Palliative medicine.
- SC3.1.20 Recognize, diagnose and guide the management of risk situations vital.
- SC 3.2.1 Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning.
- SC 3.2.2 Know how to perform a physical examination by apparatus and systems, as well as an examination psychopathological, interpreting its meaning.
- SC3.2.3 Know how to assess the modifications of the clinical parameters in the different Ages.
- SC3.2.6 Know how to perform basic and advanced life support manoeuvres.
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

Year: <b>6th</b>	Course code: <b>9998001612</b>	Course: <b>Oncology, Geriatry and Palliative care (Oncología, geriatría y cuidados paliativos)</b>	Program: <b>Bachelor's Degree in Medicine</b>	Term: <b>Annual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note 1:** the course consists of 3 ECTS theoretical + 3 ECTS of Clinical Stays

**Note 2:** a level of Spanish B2 is required

**Course content/Units:**

**ONCOLOGY AND PALLIATIVE CARE**

General module.

- Unit 1: Molecular and cellular biology of cancer.
- Unit 2: Etiology and epidemiology of cancer.
- Unit 3: General principles of cancer treatment.
- Unit 4: Chemotherapy and Immunotherapy.
- Unit 5: Hormonal Therapy and Biological Therapies. Radiotherapy

Specific module

- Unit 6: Lung cancer.
- Unit 7: Breast cancer.
- Unit 8: Colorectal Cancer
- Unit 9: Non-colorectal digestive tumors.
- Unit 10: Pancreatic cancer. Liver cancer. Cancer of the biliary tree
- Unit 11: Gynecological tumors. Ovarian cancer, fallopian tube, peritoneal cancer, and Gestational trophoblastic disease. Uterine cancer.
- Unit 12: Kidney cancer. Testicular cancer.

- Unit 13: Bladder cancer. Prostate cancer.
- Unit 14: Head and neck cancer. Bone and soft tissue sarcomas. Melanoma.
- Unit 15: Tumors of unknown origin. Paraneoplastic syndromes

**Palliative care**

- Unit 16: General Principles of Symptom Management and Assessment.
- Unit 17: Psycho-emotional aspects. Attention to the family.
- Unit 18: Situation of the last few days. Palliative sedation.
- Unit 19: Pain.
- Unit 20: Symptom control.

**GERIATRY**

**Fundamentals of geriatric care**

- Unit 1: Geriatrics: definition. Fundamentals of the organization of geriatric care and levels of care.
- Unit 2: Comprehensive geriatric assessment.
- Unit 3: Fragility. Function. Functional impairment.
- Unit 4: Characteristics of the disease in the elderly. Geriatric syndromes. Hospitalization and its consequences.
- Unit 5: Fundamentals of pharmacotherapy in geriatrics.
- Unit 6: Nutrition. Physical exercise.
- Unit 7: Principles of rehabilitation in the elderly.

**Most common age-related diseases.**

- Unit 8: Cardiovascular risk factors in the elderly.
- Unit 9: Diabetes mellitus.
- Unit 10: Cardiovascular pathology: heart failure, atrial fibrillation, stroke.
- Unit 11: Most prevalent infections in the elderly: pneumonia and urinary tract infection. Infections in nursing homes.
- Unit 12: Osteoporosis. Hip fracture. Orthogeriatrics.

**Geriatric syndromes.**

- Unit 13: Dementia.
- Unit 14: Delirium.
- Unit 15: Depression.
- Unit 16: Falls.
- Unit 17: Sarcopenia.
- Unit 18: Immobility Syndrome
- Unit 19: Urinary incontinence.
- Unit 20: Non-oncological palliative care. Elder abuse and mistreatment. Ethical dilemmas common in geriatric care

**Specific competencies:**

- SC 3.1.5 Know the tumour disease, its diagnosis and management.
- SC 3.1.17 Recognize, diagnose and guide the management of the main Poisoning. Palliative medicine.
- SC 3.1.18 Recognize the characteristics of the prevalent pathology in people Greater
- SC 3.2.1 Know how to carry out a complete, patient-centred and patient-oriented anamnesis pathologies, interpreting their meaning.
- SC 3.2.2 Know how to perform a physical examination by apparatus and systems, as well as an examination psychopathological, interpreting its meaning.
- SC3.2.3 Know how to assess the modifications of the clinical parameters in the different Ages.
- SC3.2.6 Know how to perform basic and advanced life support manoeuvres.
- SC 5.1.1 Professional practices, in the form of an independent clinical rotation and with a final evaluation of competences, in Health Centers, Hospitals and other centers assistance and that allows to incorporate professional values, communication skills care, clinical reasoning, clinical management and critical judgment, as well as attention to most prevalent health problems in the areas of Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Psychiatry and other clinical areas.

**Bachelor's Degree in Biotechnology (*Grado en Biotecnología*)**  
**(Spanish)**

1	9970002101	Química-General	Anual	Español	9
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1	9970002102	Técnicas instrumentales básicas	Semestre 2 / Spring Term (Jan–Jun)		Español	9
1	9970002103	Biología	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9970002104	Genética	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9970002105	Matemáticas	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9970002106	Biofísica	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9970002107	Informática	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9970002108	Bioquímica	Anual		Español	6
1	9970002110	Organización y gestión de Empresas Biotecnológicas	Semestre 2 / Spring Term (Jan–Jun)		Español	6

Year: <b>2nd</b>	Course code: <b>9970002201</b>	Course: <b>Animal and Plant Physiology</b> <i>(Fisiología animal y vegetal)</i>	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Cell physiology. 1.1: Introduction to physiology: homeostasis and regulation. body fluids. 1.2.- Membrane dynamics: transport. membrane potential. 1.3.- Intercellular communication: signaling pathways. 1.4.- Blood. composition and function. homeostasis. 1.5.- Introduction to the nervous system. 1.6.- Neurophysiology I: transmission of nerve impulses .1.7.- Neurophysiology II: synapses. sensory physiology. autonomic nervous system. 1.8.- Muscle tissue I. description of muscle tissues. musculoskeletal contraction. 1.9.- Muscle tissue II</li> <li>Unit 2: Physiology of systems. 2.1.- Endocrine system I. 2.2.- Endocrine system II. 2.3.- Endocrine system III. 2.4.- Respiratory system. 2.5.- Cardiovascular system. 2.6.- Digestive system. 2.7.- Excretory system.</li> <li>Unit 3: Plant physiology. 3.1.- Plant structure. 3.2.- Plant nutrition. absorption and transport. 3.3.- Plant hormones. 3.4.- Photosynthesis.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9970002202</b>	Course: <b>Ethics (Ética)</b>	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Ethics. Morality and professional ethics</li> <li>Unit 2. Birth and History of Bioethics</li> <li>Unit 3. Informed Consent and Humanization</li> <li>Unit 4. Clinical research. Codes of Ethics and Research with Humans and Animals</li> <li>Unit 5. Ethics Committees</li> <li>Unit 6. Environmental Ethics</li> <li>Unit 7. Neuroethics. Transhumanism and Posthumanism</li> <li>Unit 8. Genetics. Genetically modified organisms</li> <li>Unit 9. Bioethics in the origin of life. Voluntary termination of pregnancy, reproductive techniques, Assisted Living and Surrogacy</li> <li>Unit 10. Bioethics at the end of life. Palliative care and euthanasia</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9970002203</b>	Course: <b>Biochemical Engineering Fundamentals</b> <i>(Fundamentos de Ingeniería Bioquímica)</i>	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to biochemical engineering.</li> <li>Unit 2. Phenomena and mechanisms of transport in biochemical engineering.</li> <li>Unit 3. Transport velocity equations and transport properties.</li> <li>Unit 4. Balances of matter and energy.</li> <li>Unit 5. Enzyme and cell culture kinetics</li> <li>Unit 6. Confined and Immobilized Biocatalysts (Cells and Enzymes): Characteristics and Applications</li> </ul>						

- Unit 7. Introduction to Bioreactor Design
- Unit 8. Introduction to Separation Sequences

Year: <b>2nd</b>	Course code: <b>9970002204</b>	Course: <b>Organic Chemistry</b> ( <i>Química Orgánica</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Organic Compounds. 1.1. Structure and Properties of Organic Compounds. 1.2. Stereoisomerism. 1.3. Introduction to the reactivity of organic compounds.</li> <li>• Unit 2. Properties and Reactivity of Functional Groups I. 2.1. Alkanes and cycloalkanes. 2.2. Alkenes. 2.3. Alcohols, ethers and sulphur derivatives</li> <li>• Unit 3. Properties and Reactivity of Functional Groups II. 3.1. Aldehydes and ketones. 3.2. Carboxylic acids and derivatives. 3.3. Amines and nitrogenous compounds.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9970002205</b>	Course: <b>Molecular Genetics</b> ( <i>Genética molecular</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Organization of the eukaryotic genome. Genome structure and classification. Recombination. Recombination strategies and enzymes involved.</li> <li>• Unit 2. Replication. The replication complex. Molecular mechanism.</li> <li>• Unit 3. Transcription and control. Flow of biological information.</li> <li>• Unit 4. Repair and modification-restriction. Preservation of the structure of genetic material. Mechanisms repair.</li> <li>• Unit 5. Mutation. Spontaneous and induced mutagenesis. Genetic and evolutionary analysis of mutagenesis.</li> <li>• Unit 6. Genetic recombination. Molecular mechanisms: proteins involved and proposed mechanisms. Transposition.</li> <li>• Unit 7. Basic biochemical techniques for genetic analysis at the molecular level.</li> <li>• Unit 8. Fundamentals of Gene Therapy</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9970002206</b>	Course: <b>General Microbiology</b> ( <i>Microbiología General</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Overview of Microbiology. 1.1. Introduction to microbiology. 1.2. Morphology and structure of prokaryotes and fungi. 1.3. Microbial metabolism. 1.4. Microbial genetics. 1.5. Microbial diversity, taxonomy and ecology. 1.6. Microbiota. 1.7. Microbial infections and poisonings. 1.8. Antimicrobial therapy</li> <li>• Unit 2. Microbiological diversity. 2.1. Eukaryotic microorganisms: fungi, protists and algae. 2.2. Gram-positive bacteria: Firmicutes. 2.3. Gram-positive bacteria: lactic acid bacteria. 2.4. Gram-positive bacteria: actinobacteria. 2.5. Other phyla of gram-positive bacteria. 2.6. Gram-negative bacteria: proteobacteria. 2.7. Gram-negative bacteria: spirochetes. 2.8. Other phyla of gram-negative bacteria. 2.9. Archaea.</li> <li>• Unit 3. Virology. 3.1. Classification of viruses and subviral agents. 3.2. Viral structure. 3.3. Viral genetics. 3.4. Viral infection cycle. 3.5. Biotechnological applications of viruses. 3.6. Bacteriophage viruses. 3.7. Viral infection patterns. 3.8. Human Pathogenic Viruses* (*This topic will include subsections corresponding to the major orders and viral families).</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9970002207</b>	Course: <b>Industrial Microbiology</b> ( <i>Microbiología Industrial</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to industrial microbiology. Basics. 1.1. Introduction to Industrial Microbiology. 1.2. Main microbial products and processes of interest</li> <li>• Unit 2. Microorganisms of industrial interest. fermentation. 2.1. Microorganisms for industrial use. 2.2. Estimation of bacterial biomass: mass counting and estimation of the number of individuals 2.3. Fermentation systems</li> <li>• Unit 3. Food microbiology 3.1. Food Microbiology. 3.2. Foodborne Illnesses. 3.3. Microbiology of Fermented Foods</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9970002208</b>	Course: <b>Thermodynamics and Chemical Kinetics</b> ( <i>Termodinámica y Cinética Química</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Kinetics and catalysis. 1.1. Chemical Kinetics. 1.2. Complex Reactions and Reaction Mechanisms. 1.3. Catalysis</li> <li>Unit 2. Thermodynamics. 2.1. Fundamentals of Thermodynamics. 2.2. Principles of Thermodynamics. 2.3. Gibbs Free Energy and Chemical Equilibrium</li> <li>Unit 3. Dissolutions. 3.1. Real and Ideal Dissolutions</li> <li>Unit 4. Surface Phenomena. 4.1. Adsorption phenomena</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9970002209</b>	Course: <b>Biostatistics</b> ( <i>Bioestadística</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Descriptive statistics, probability, probability distributions, and estimate. 1.1. Application of statistics to health sciences and biotechnology. 1.2. Descriptive statistics. 1.3. Probability. Bayes' theorem (diagnostic test).. 1.4. UNIT 4. Probability distributions. 1.5. Sampling and estimation of a mean, confidence intervals, and size of the Samples.</li> <li>Unit 2: Inferential statistics. 2.1. Inferential Statistics and Hypothesis Testing. Basics. 2.2. Hypothesis tests for the comparison of qualitative variables. 2.3. Hypothesis tests for the comparison of quantitative variables.. 2.4. Correlation and regression. Multivariate analysis: regression and multiple covariance analysis. 2.5. Models of scientific studies in biological research</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9970002301</b>	Course: <b>Bioinformatics</b> ( <i>Bioinformática</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Bioinformatics. 1.1 Introduction to Bioinformatics</li> <li>Unit 2. Bibliographic databases. 2.1. Basic Concepts of Bibliographic Databases. 2.2. OMIM</li> <li>Unit 3. Nucleic Acid Databases. 3.1. Nucleic Acid Sequence Databases. 3.2. DNA Sequence Analysis</li> <li>Unit 4. Protein Databases. 4.1. Protein Sequence Databases. 4.2. Protein Structure Databases. 4.3. Protein Sequence Analysis. 4.4. Sequence Alignment by Pair Comparison. 4.5. Multiple Sequence Alignment. 4.6. Databases of Domains and Protein Families</li> <li>Unit 5. Special software in life sciences. 5.1. Small Molecule Databases</li> <li>Unit 6. Computer-aided structural design</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9970002302</b>	Course: <b>Molecular Genetic Engineering</b> ( <i>Ingeniería Genética Molecular</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Genetic Engineering. 1.1. Overview. 1.2. History and regulation.</li> <li>Unit 2. Basic genetic engineering tools . 2.1. Basic nucleic acid treatment techniques. 2.2. DNA Enzymology</li> <li>Unit 3. Recombinant DNA technology: vectors and hosts . 3.1. Methodology for the creation of recombinant molecules 3.2. Hosts for cloning vectors</li> <li>Unit 4. Recombinant dna technology: cloning strategies. 4.1. Cloning Strategies: PCR and Chemical Synthesis. 4.2. Construction of genomic and cDNA libraries.</li> <li>Unit 5. Recombinant dna technology: identification and analysis of cloned DNA (Screening). 5.1. Structural Analysis: Restriction Maps, DNA Hybridization and Sequencing. Usefulness of the Bioinformatics. . 5.2. Functional Analysis</li> <li>Unit 6. Applications of genetic Engineering. 6.1. Genetic modification of animals . 6.2. Genetic modification of plants . 6.3. Genetic modification of microorganisms. 6.4. Genetic modification in medicine</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9970002303</b>	Course: <b>Chemistry and Protein Engineering</b> ( <i>Química e Ingeniería de Proteínas</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
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**Course content/Units:**

- Unit 1: General Fundamentals of Structure, Folding, and Molecular Interactions. 1.1. Contextualization and introduction. 1.2. Primary Structure. 1.3. From DNA to Proteins: Life Cycle. 1.4. Three-dimensional shaping
- Unit 2: Structure Determination. Databases. 2.1. Techniques for Determining Protein Structure. 2.2. Structural Databases. 2.3. Catalytic activity. 2.4. Other molecular activities. 2.5. Dynamic Aspects of the Structure. 2.6. Interactions. 2.7. Regulatory mechanisms
- Unit 3: Structure Prediction. Modelling. Optimisation. 3.1. Prediction of structures using computational methods
- Unit 4: Protein Engineering. Heterologous expression. Rational modification of proteins. 4.1. Protein production. 4.2. Protein Design & Engineering
- Unit 5: Applications of biotechnological interest (biomedicine, agriculture, industry). Cases Practical. 5.1. Applications of biotechnological interest (biomedicine, agriculture, industry) 5.2. Case Studies

Year: <b>3rd</b>	Course code: <b>9970002304</b>	Course: <b>Advanced Instrumental Techniques (Técnicas Instrumentales Avanzadas)</b>	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. General application techniques. 1.1. Introduction. 1.2. Radiochemical Methods.
- Unit 2. Structural analysis techniques. 2.1. Nuclear Magnetic Resonance. 2.2. Mass spectrometry. 2.3. X-ray diffraction.
- Unit 3. Structural observation techniques. 3.1. Optical Microscopy. 3.2. Electron Microscopy

Year: <b>3rd</b>	Course code: <b>9970002305</b>	Course: <b>Immunology (Inmunología)</b>	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Immunology.
- Unit 2. Physiology of the immune system: cells, organs, and tissues.
- Unit 3. Mechanisms and molecular basis of the immune response. 3.1. Phagocytic cells. 3.2. Complement System. 3.3. Antibodies. 3.4. Antigenic presentation. 3.5. T lymphocytes. 3.6. B lymphocytes. 3.7. Adhesion molecules. 3.8. Cytokines.
- Unit 4. Mechanisms of genetic variability of the immune system.
- Unit 5. Introduction to Immune System Disorders: Hypersensitivity, Autoimmunity, immunodeficiencies.
- Unit 6. Immunomodulatory drugs.
- Unit 7. Applications of the immune system in therapy.
- Unit 8. Biotechnological techniques based on immunology.

Year: <b>3rd</b>	Course code: <b>9970002306</b>	Course: <b>Cell Culture &amp; Tissue Engineering (Cultivos Celulares e Ingeniería de Tejidos)</b>	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
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**Course content/Units:**

- Unit 1: Cell cultures. 1.1. Biological safety of cell cultures in Biotechnology. 1.2. Introduction to the cell culture technique. 1.3. Cell culture requirements. subculture. 1.4. Dissociated cells: primary cultures and cell lines. 1.5. Quantification of cellular parameters and cycle analysis. 1.6. Industrial applications of cell cultures
- Unit 2: Biomaterials and Tissue Engineering. 2.1. Introduction to biomaterials. 2.2. Biomaterials and supports for cell cultures. 2.3. Biological Response

Year: <b>3rd</b>	Course code: <b>9970002307</b>	Course: <b>Pharmacology (Farmacología)</b>	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
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**Course content/Units:**

- Unit 1: General
- Unit 2: Pharmacology of the autonomic nervous system
- Unit 3: Central Nervous System
- Unit 4: Analgesics, anti-inflammatories and anesthetics
- Unit 5: Anti-infectives
- Unit 6: Pharmacology of the cardiovascular system and endocrine system
- Unit 7: Pharmacology of the respiratory and digestive system

- Unit 8. Other medications

Year: <b>3rd</b>	Course code: <b>9970002308</b>	Course: <b>Functional Genomics and Transcriptomics</b> ( <i>Genómica Funcional y Transcriptómica</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Eukaryotic and prokaryotic genomes. Classification of species and molecular evolution.</li> <li>• Unit 2: Comparison of genomes. Genomic maps.</li> <li>• Unit 3: Human genomic variation. Population studies.</li> <li>• Unit 4: Concepts and bases of gene expression. Regulation of gene expression in eukaryotes and prokaryotes. Epigenetics</li> <li>• Unit 5: Technologies applied in Genomics and Transcriptomics</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9970002309</b>	Course: <b>Molecular Pathology</b> ( <i>Patología Molecular</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Introduction and Molecular Basis of Genetic Diseases. 1.1. Molecular origin of the disease and types of molecular pathologies. 1.2. Pathogenesis and Diagnosis of Genetic Diseases. 1.3. General Molecular Diagnostic Methods and Techniques. 1.4. Treatment of genetic diseases</li> <li>• Unit 2: Molecular Basis of Metabolic Alterations. 2.1. Alterations in carbohydrate metabolism. 2.2. Alterations in lipid metabolism. 2.3. Alterations in amino acid metabolism. 2.4. Alterations in the metabolism of nitrogenous compounds. 2.5. Alterations in heme and iron metabolism</li> <li>• Unit 3: Molecular Basis of Systemic Alterations. 3.1. Molecular Basis of Cancer. 3.2. Molecular Basis of Aging. 3.3. Molecular Basis of Some Neurodegenerative Diseases. 3.4. Molecular Basis of Some Autoimmune Diseases. 3.5. Pathogenesis and Diagnosis of Infectious Disease</li> <li>• Unit 4: Applications of Molecular Pathology in Biotechnology. 4.1. Molecular Aspects of Pharmacological Treatment</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9970002310</b>	Course: <b>Plant Biotechnology</b> ( <i>Biotecnología Vegetal</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Morphology and structure of plant organisms.</li> <li>• Unit 2. Plant reproduction.</li> <li>• Unit 3. In vitro vegetable culture.</li> <li>• Unit 4. Conventional genetic improvement.</li> <li>• Unit 5. Biotechnological genetic improvement.</li> <li>• Unit 6. Legal and social aspects of genetically modified crops.</li> <li>• Unit 7. Photosynthetic metabolism.</li> <li>• Unit 8. Secondary metabolism.</li> <li>• Unit 9. Phytopathology: biotic stress.</li> <li>• Unit 10. Phytopathology: abiotic stress.</li> <li>• Unit 11. Plant development responses.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9970002311</b>	Course: <b>Experimental Biotechnology</b> ( <i>Biotecnología Experimental</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Strategic design of purification of an enzyme of industrial interest. 1.1. Safety in the microbiology and genetic engineering laboratory. 1.2. Isolation and manipulation of plasmids and DNA fragments. 1.3. Heterologous expression of wild and mutant proteins. 1.4. Purification and characterization of recombinant proteins. 1.5. Activity analysis of the wild and mutant enzyme. 1.6. Good laboratory practices</li> <li>• Unit 2. Functional characterization in cell cultures. 2.1. In vitro culture technique of different eukaryotic cell lines. 2.2. Characterization of cell lines. Flow cytometry. Western-Blot. Densitometry. 2.3. Immunocytochemistry. Protein titration. MTT method. 2.4. Cell Culture Laboratory Safety and Biological Waste Management</li> </ul>						

Year: <b>4th</b>	Course code: <b>9970002401</b>	Course: <b>Biotechnological products and processes</b> ( <i>Procesos y Productos Biotecnológicos</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction: Analysis of biotechnological processes. 1.1. Introduction to bioprocesses. Analysis of biotechnological processes. 1.2. Microbial metabolism. Heterotrophic, photoautotrophic, and photoautotrophic metabolism pathways Chemolithotroph.</li> <li>Unit 2. Food production by biotechnological processes. Food industry. 2.1. Food production by biotechnological processes. 2.2. Other products intended</li> <li>Unit 3. Biofuels and biodegradable products. 3.1. Biofuels. Bioethanol. 3.2. Bioplastics and other biomaterials. 3.3. Antibiotic production. 3.4. Production of therapeutic proteins on an industrial scale. 3.5. Bioprocess modeling. Introduction to Mathematical Modeling</li> </ul>						

Year: <b>4th</b>	Course code: <b>9970002402</b>	Course: <b>Bioreactors</b> ( <i>Biorreactores</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Processes and sequences of separation and purification of products. Separation strategies.</li> <li>Unit 2. Types of bioreactors. Basic Equations for Ideal Reactor Design</li> <li>Unit 3. Design of real reactors (batch and continuous). Feeding systems. Serial reactors. Change of scale.</li> <li>Unit 4. Instrumentation and control of bioprocesses.</li> <li>Unit 5. Biosensors: types and operation. Applications of biosensors.</li> <li>Unit 6. Bioprocess technology</li> </ul>						

Year: <b>4th</b>	Course code: <b>9970002403</b>	Course: <b>Pharmaceutical Biotechnology</b> ( <i>Biología Farmacéutica</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Pharmaceutical Biotechnology. 1.1. Biologic/biotech drugs. 1.2. Economic considerations. 1.3. Regulation of biosimilar drugs</li> <li>Unit 2. Recombinant Proteins. 2.1. Recombinant DNA design, biophysical and biochemical analysis. 2.2. Production and purification, formulation of biotechnological products. 2.3. PD/PK of therapeutic proteins. 2.4. Immunogenicity of therapeutic proteins</li> <li>Unit 3. Monoclonal antibodies with therapeutic application. 3.1. Characteristics. 3.2. mAb-based therapy: cancer, solid organ transplantation</li> <li>Unit 4. Biotech drugs. 4.1. Hormones: insulin, FSH, growth hormone, hematopoietic factors</li> <li>Unit 5. Advanced Therapies. 5.1. Gene therapy. 5.2. Cell therapy. 5.3. Tissue engineering</li> <li>Unit 6. Clinical Research. 6.1. Development of new drugs. 6.2. Clinical trials. 6.3. Biomarkers. 6.4. Personalized medicine</li> </ul>						

Year: <b>4th</b>	Course code: <b>9970002404</b>	Course: <b>Proteomics and Metabolomics</b> ( <i>Proteómica y Metabolómica</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction</li> <li>Unit 2. General concepts and technologies applied in proteomics</li> <li>Unit 3. Functional proteomics</li> <li>Unit 4. Metabolomics</li> <li>Unit 5. Integration of omics sciences</li> </ul>						

Year: <b>4th</b>	Course code: <b>9970002803</b>	Course: <b>Food Biotechnology</b> ( <i>Biología Alimentaria</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to food biotechnology. food and nutrition. Technological properties of nutrients.</li> <li>Unit 2. Food additives.</li> </ul>						

- Unit 3. Biotechnology of novel foods. nutrigenetics and nutrigenomics. Biotech foods.
- Unit 4. Genetically modified foods and other genetic modifications
- Unit 5. Foods obtained with biocatalysts, "fermented".
- Unit 6. Biotechnological aspects of food analysis. Biosensors. Biosafety Food & legislation

Year: <b>4th</b>	Course code: <b>9970002804</b>	Course: <b>Environmental Biotechnology</b> ( <i>Biotecnología Ambiental</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Environmental Biotechnology.</li> <li>• Unit 2. Pollution of the aquatic environment.</li> <li>• Unit 3. Air pollution.</li> <li>• Unit 4. Bioremediation and biodegradation of natural compounds and industrial waste.</li> <li>• Unit 5. Biosensors in environmental control.</li> <li>• Unit 6. Phytoremediation.</li> <li>• Unit 7. Biotechnology for the production of clean energy.</li> <li>• Unit 8. Bioplastics and biomaterials</li> <li>• Unit 9. Biocontrol Basics</li> </ul>						

Year: <b>4th</b>	Course code: <b>9970002808</b>	Course: <b>Pharmacogenetics and pharmacogenomics</b> ( <i>Farmacogenética y Farmacogenómica</i> )	Program: <b>Bachelor's Degree in Biotechnology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Introduction to Genomic Medicine. 1.1: Genetic bases applied to pharmacogenetics and medicine Custom. 1.2: Biomarkers and techniques applied to their detection.</li> <li>• Unit 2: Pharmacogenomics and Pharmacogenetics. 2.1: Genes involved in drug metabolism. 2.2: Target genes for the therapeutic response of the drug.</li> <li>• Unit 3: Applications of Personalized Medicine. 3.1: Pharmacogenetics in the pharmaceutical industry. 3.2: Pharmacogenetics in Oncology. 3.3: Pharmacogenetics in Psychiatry. 3.4: Pharmacogenetics in cardiovascular diseases. 3.5: Pharmacogenetics in other diseases. 3.6: Personalized Medicine.</li> <li>• Unit 4: Genomic Medicine and Society. 4.1: Ethical aspects derived from the advancement of personalized medicine</li> </ul>						

## Bachelor's Degree in Nursing (*Grado en Enfermería*) (Spanish)

<b>1</b>	<b>9997002101</b>	<b>Estructura y función del cuerpo humano I</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9997002102</b>	<b>Fundamentos biológicos, bioquímicos y nutricionales</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9997002103</b>	<b>Fundamentos de la Enfermería: Historia, bases teóricas y metodológicas</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9997002104</b>	<b>Psicología aplicada al cuidado de la salud</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>

Year: <b>1st</b>	Course code: <b>9997002105</b>	Course: <b>Ethics and Professional Responsibility</b> ( <i>Ética y responsabilidad profesional</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Ethics, conduct and responsibility. the nursing profession. 1.1. Law, ethics and bioethics. Code of conduct. 1.2. Professional ethics. Responsibility of nurses. 1.3. Conscientious objection of professionals. Ethical issues at the beginning of life.</li> </ul>						

- Unit 2. The rights and duties of users. 2.1. Respect for privacy and confidentiality. Humanisation of care. Health information systems: the medical history. Professional secrecy. Data protection. 2.2. Patient autonomy. The right to be informed. Informed consent. 2.3. Ethical issues at the end of life. Rights of the terminally ill.
- Unit 3. Moral dilemmas in the practice of the profession. 3.1. Moral reasoning. Deliberation. Healthcare Ethics Committees

±	9997002106	Estructura y función del cuerpo humano II	Semestre 2 / Spring Term (Jan -Jun)		Español	6
±	9997002107	Salud Pública y Sistema Sanitario	Semestre 2 / Spring Term (Jan -Jun)		Español	6
±	9997002108	Práctica basada en la evidencia científica	Semestre 2 / Spring Term (Jan -Jun)		Español	6
±	9997002109	Valoración de Salud y Enfermedad: Integración de procesos de cuidados I	Semestre 2 / Spring Term (Jan -Jun)		Español	6

Year: <b>2nd</b>	Course code: <b>9997002201</b>	Course: <b>Disease Mechanisms and Processes I</b> ( <i>Mecanismos y procesos de enfermedad I</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> <b>ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Pathophysiology of Cardiovascular Disorders. 1.1. Ischemic heart disease. 1.2. High blood pressure. 1.3. Syncope. 1.4. Heart failure. 1.5. Valvular heart disease. 1.6. Inflammatory heart disease. 1.7. Vascular disease. 1.8. Arrhythmias</li> <li>• Unit 2. Pathophysiology of Respiratory Disorders. 2.1. Pathophysiological mechanisms in acid-base balance disturbances. 2.2. Respiratory tract infections. 2.3. Gas Ventilation and exchange disorders</li> <li>• Unit 3. Pathophysiology of Digestive Disorders. 3.1. Upper Digestive Tract Disorders. 3.2. Lower Digestive Tract Disorders. 3.3. Disorders of the hepatobiliary system and pancreas</li> <li>• Unit 4. Pathophysiology of Renal and Genitourinary Disorders. 4.1. Urinary tract infections. 4.2. Obstructive uropathies. 4.3. Nephron disorders. 4.4. Renal impairment. 4.5. Disorders of the external genitalia and vagina. 4.6. Disorders of the uterus, tubes, and ovaries. 4.7. Breast disorders. 4.8. Prostate Disorders. 4.9. Sexually Transmitted Diseases</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9997002202</b>	Course: <b>Pharmacology and use of medicines and medical devices</b> ( <i>Farmacología y uso de medicamentos y productos sanitarios</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> <b>ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: General Pharmacology and Drug Safety. 1.1. Pharmacokinetics and pharmacodynamics. 1.2. Drug interactions and ADRs</li> <li>• Unit 2: Autonomic Nervous System Pharmacology. 2.1. Pharmacology of the Autonomic Nervous System. SNS. 2.2. Pharmacology of the Autonomic Nervous System. SNP</li> <li>• Unit 3: Pharmacology of the Cardiovascular System. 3.1. Antianginals, antihypertensives, antiarrhythmics, heart failure. 3.2. Anticoagulants, antiplatelet agents, fibrinolytics, topical hemostats</li> <li>• Unit 4: Pharmacology of the Respiratory System. 4.1. Antiasthmatics, cough suppressants, mucolytics, expectorants</li> <li>• Unit 5: Pharmacology of the Digestive System. 5.1. Antiulcers, antiemetics, laxatives. 5.2. Enteral and Parenteral Nutrition</li> <li>• Unit 6: Endocrine-metabolic pharmacology. 6.1. Antidiabetics</li> <li>• 6.2. Contraceptives, other (thyroid) hormones</li> <li>• Unit 7: Medical Devices. 7.1. Medical devices</li> <li>• Unit 8: Pharmacology of the Central Nervous System. 8.1. Benzodiazepines and Antidepressants. 8.2. Antimigraines, antiepileptics, antiparkinsonians, neuroleptics. 8.3. Antihistamines</li> <li>• Unit 9: Pharmacology of Analgesia. 9.1. Opioid Analgesics. 9.2. NSAIDs and corticosteroids</li> <li>• Unit 10: Pharmacology of Infectious Processes. 10.1. Antibacterial and anti-tuberculosis drugs</li> <li>• 10.2. Antivirals, antifungals and antiparasitics</li> <li>• Unit 11: Other Pharmacological Groups. 11.1. Immunomodulators and vaccines. 11.2. Cytostatic or antineoplastic. 11.3. Fluid Therapy</li> <li>• Unit 12: Pharmacological Poisoning. 12.1. Activated carbon, enemas, antidotes. 12.2. Pharmacological errors</li> <li>• Unit 13: Drugs for application in the operating room. 13.1. Local Anesthetics, General Anesthesia, and Neuromuscular Blockers</li> </ul>						



Year: <b>2nd</b>	Course code: <b>9997002203</b>	Course: <b>Adult Care I</b> ( <i>Cuidados del adulto I</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course contents/Units:**

- Unit 1. Nursing care for people with cardiovascular disorders. 1.1 Focused assessment. 1.2 Key Symptoms of Cardiovascular Disease. 1.3 Main Techniques and Procedures. 1.4 Identification and care in life-threatening situations.
- Unit 2. Nursing care for people with respiratory disorders. 2.1 Focused assessment. 2.2 Key Respiratory Pathology Symptoms. 2.3 Main Techniques and Procedures. 2.4 Identification and care in life-threatening situations
- Unit 3. Nursing care for people with digestive disorders. 3.1 Focused assessment. 3.2 Key Digestive Pathology Symptoms. 3.3 Main Techniques and Procedures. 3.4 Identification and care in life-threatening situations.
- Unit 4. Nursing care for people undergoing surgery. 4.1 Preoperative patient and his/her environment. 4.2 Intraoperative Environment, Types of Anesthesia, Surgical Check List. 4.3 Post-surgical patient: Immediate and late postoperative. Identification of life-threatening, as well as more relevant post-surgical complications

Year: <b>2nd</b>	Course code: <b>9997002204</b>	Course: <b>Health Promotion and Risk Reduction: Integration of Care Processes II</b> ( <i>Promoción de salud y reducción de riesgos: integración de procesos de cuidados II</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course contents/Units:**
**BLOCK 1: COMMUNITY HEALTH PROMOTION**

- Unit 1. community action and participation.

**BLOCK 2: INDIVIDUAL HEALTH PROMOTION**

- Unit 2. Programme of preventive and health promotion activities.
- Unit 3. Control of communicable diseases through vaccination.

**BLOCK 3: SAFETY CULTURE**

- Unit 4. Patient safety
- Unit 5. Risk management and reporting systems.

**BLOCK 4: DIAGNOSIS AND PREVENTION OF RISK IN CLINICAL PRACTICE.**

- Unit 6. Safe practices. 6.1. Effective interprofessional communication. 6.2. Patient and professional safety in communicable diseases. 6.3. Patient Safety in Procedures. 6.4. Patient Safety in the Use of Medications.
- Unit 7. Health literacy and active patient.
- Unit 8. Patient safety related to disease monitoring chronicles. continuity of care.
- Unit 9. Patient safety in the surgical setting

Year: <b>2nd</b>	Course code: <b>9997002205</b>	Course: <b>Communication and Relational impact</b> ( <i>Comunicación e impacto relacional</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course contents/Units:**

- Unit 1. Foundations and theoretical basis of human communication.
- Unit 2. Emotional Intelligence in Interpersonal Relationships
- Unit 3. Tools for effective communication.
- Unit 4. Communication in a professional environment. 4.1. The therapeutic relationship with individuals, families and groups. 4.2. Application / adaptation of the therapeutic relationship and communication techniques.
- Unit 5. Successful change: Adaptability.
- Unit 6. Tools for public speaking

Year: <b>2nd</b>	Course code: <b>9997002206</b>	Course: <b>Disease Mechanisms and Processes II</b> ( <i>Mecanismos y procesos de enfermedad II</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course contents/Units:**

- Unit 1. Pathophysiology of Endocrine Disorders. 1.1. Pituitary disorders. 1.2. Thyroid disorders. 1.3. Adrenal gland disorders. 1.4. Pancreatic disorders. 1.5. Disorders of the gonads
- Unit 2. Pathophysiology of Neurological Disorders. 2.1. Pain. 2.2. Headaches. 2.3. Central nervous system infections. 2.4. Chronic neurological and/or neurodegenerative disorders. 2.5. Traumatic brain injury

- Unit 3. Pathophysiology of Musculoskeletal Disorders. 3.1. Trauma and structural injuries. 3.2. Bone infections. 3.3. Metabolic alterations. 3.4. Rheumatic conditions
- Unit 4. Pathophysiology of Hematologic Disorders. 4.1. Erythrocyte disorders. 4.2. Hemostasis disorders. 4.3. White Blood Cell Disorders. 4.4. Hematopoietic Precursor Transplantation
- Unit 5. Pathophysiology of Oncological Disorders: General Principles of Cancer. 5.1. Cancer Biology. 5.2. Oncogenesis. 5.3. Clinic. 5.4. Special Oncology

Year: <b>2nd</b>	Course code: <b>9997002207</b>	Course: <b>Primary and Community Care Nursing</b> ( <i>Enfermería de atención primaria y comunitaria</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course contents/Units:**

- Unit 1 Foundations, structure and organization of the primary level of care.
- Unit 2 Roles and activities of the primary care team and the community nurse.
- Unit 3 Portfolio of services.
- Unit 4 Health programs at different stages of life.
- Unit 5: Individual and group health education.
- Unit 6 Nursing Assessment and Care in Primary Care.

Year: <b>3rd</b>	Course code: <b>9997002301</b>	Course: <b>Mental health disorders throughout the life cycle</b> ( <i>Alteraciones de la salud mental a lo largo del ciclo vital</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course contents/Units:**

- Unit 1. Introduction to mental health. Key concepts and processes. Services and multidisciplinary team.
- Unit 2. Top Mental Health Problems Throughout the Life Cycle: Children, Adolescents, Adults, Elderly
- Unit 3. Nursing care for patients with health problems in different disorders.
- Unit 4. Everyday life and mental health.
- Unit 5. Stigmatization of mental illness.
- Unit 6. Safety in the care of patients with mental health problems.

Year: <b>3rd</b>	Course code: <b>9997002302</b>	Course: <b>Geriatric Nursing</b> ( <i>Enfermería geriátrica</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course contents/Units:**

- Unit 1. General aspects of aging. Explanatory theories of the aging process. Demographics. Social and health resources for the elderly in the Spanish Health System.
- Unit 2. Description of the aging process. Physical, psychological, and social changes.
- Unit 3. Assessment of the state of health of the elderly. The use of rating scales.
- Unit 4. Healthy Elderly: Current Needs and Demands.
- Unit 5. Main geriatric syndromes.
- Unit 6. Care in situations of illness that lead to dependency.

Year: <b>3rd</b>	Course code: <b>9997002303</b>	Course: <b>Adult Care II</b> ( <i>Cuidado del adulto II</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course contents/Units:**

- Unit 1: Nursing care for people with neurological disorders.
- Unit 2: Nursing care for people with endocrine disorders
- Unit 3: Nursing care for people with musculoskeletal disorders and Dermatological
- Unit 4: Nursing care for people with nephrourological disorders
- Unit 5: Nursing Care for People with Hematological Disorders
- Unit 6: Nursing Care in Critically Ill Patients

Year: <b>3rd</b>	Course code: <b>9997002304</b>	Course: <b>Health Maintenance and Recovery: Integration of Care Processes III</b> ( <i>Mantenimiento y recuperación</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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		<i>de la salud: Integración de procesos de cuidados III)</i>				
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Patient Safety</li> <li>• Unit 2. Nursing Care for Adult Patients</li> <li>• Unit 3. Nursing Care for Elderly Patients</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9997002305</b>	Course: <b>Maternity and Reproductive Health</b> ( <i>Maternidad y Salud Reproductiva</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Female Reproductive Cycle</li> <li>• Unit 2. Nursing care for women and families during pregnancy. 2.1. Fetal genesis and development. 2.2. Changes in the pregnant woman and prenatal care. 2.3. Most common health problems during pregnancy</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9997002306</b>	Course: <b>Health and Disease in Childhood and Adolescence</b> ( <i>Salud y Enfermedad en la Infancia y la adolescencia</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Growth and development. Nursing process in the child and adolescent population.</li> <li>• Unit 2. Assessment and care of the newborn</li> <li>• Unit 3. Assessment and care of the newborn at risk</li> <li>• Unit 4. Nursing care of children or adolescents with more pathophysiological respiratory processes Frequent.</li> <li>• Unit 5. Nursing care of the child or adolescents with congenital heart disease</li> <li>• Unit 6. Nursing care of the child or adolescents with more pathophysiological digestive processes Frequent.</li> <li>• Unit 7. Nursing care of children or adolescents with more pathophysiological neurological processes Frequent.</li> <li>• Unit 8. Nursing care of children or adolescents with more pathophysiological oncological processes Frequent.</li> <li>• Unit 9. Nursing care of the child or adolescents with the most frequent infectious processes.</li> <li>• Unit 10. Safe use of the drug in paediatrics: dose calculation</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9997002308</b>	Course: <b>Health Maintenance and Recovery II: Integration of Care Processes IV</b> ( <i>Mantenimiento y recuperación de la Salud II: Integración de procesos de cuidados IV</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Pediatric Nurse Care</li> <li>• Unit 2. Nursing care for women in relation to sexual and reproductive health and Obstetric-gynecology problems</li> <li>• Unit 3. Nursing care of patients at risk of life</li> </ul>						

Year: <b>4th</b>	Course code: <b>9997002402</b>	Course: <b>Palliative care</b> ( <i>Cuidados paliativos</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Evolution, foundations and objectives of palliative care.</li> <li>• Unit 2. Structure and organization of palliative care teams. Competencies and functions of the nurse.</li> <li>• Unit 3. Communication with the patient and family. End-of-life information.</li> <li>• Unit 4. Multidisciplinary approach to the patient's problems: assessment and control of symptoms . 4.1. Pain. 4.2. Respiratory problems. 4.3. Digestive Problems. 4.4. Deletion Issues. 4.5. Skin and mucous membrane problems. 4.6. Neuro-psychological problems. 4.7. Discomfort.</li> <li>• Unit 5. Comprehensive care plans.</li> <li>• Unit 6. Care for the patient and family in the dying phase. Terminal sedation.</li> <li>• Unit 7. Ethical-legal aspects of death.</li> </ul>						

- Unit 8. Grief work in the family.

4	Course code: <b>9997002405</b>	<b>Entrepreneurial Leadership and Career Guidance</b> ( <i>Liderazgo emprendedor y Orientación profesional</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Anual</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Personal Skills. 1.1. Self-awareness. 1.2. Communication</li> <li>• Unit 2. Leadership Skills. 2.1. Group work. 2.2. Leadership and team management</li> <li>• Unit 3. Management in Health Institutions. Nursing Management. 3.1. Care management. 3.2. Resource management. 3.3. Quality management. 3.4. Knowledge management</li> <li>• Unit 4. Professional Entrepreneurship. 4.1. Areas of professional development in the nursing field. 4.2. Mechanisms for access to Postgraduate Education. 4.3. Tools and facilitators for access to the world of work. 4.4. Professional social networks</li> </ul>						

Year: <b>4th</b>	Course code: <b>9997002801</b>	Course: <b>Medical Anthropology</b> ( <i>Antropología de la salud</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to social and cultural anthropology. Anthropology, health and illness.</li> <li>• Unit 2. General concepts of medical anthropology. Medical models. The health/illness/care process. Social and cultural aspects of care.</li> <li>• Unit 3. Culture and health in a global environment. Globalisation and cultural diversity. Immigration and health. Gender and health.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9997002802</b>	Course: <b>Emergency and critical nursing care</b> ( <i>Atención enfermera en urgencias y emergencias</i> )	Program: <b>Bachelor's Degree in Nursing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Hospital Emergency Services and Comprehensive Emergency and Emergency Systems Out-of-hospital services: concepts, organization and triage</li> <li>• Unit 2. Life Support. Basic Life Support. Advanced Life Support in Adults and Pediatrics. Post-resuscitation care</li> <li>• Unit 3. Cardiovascular emergencies</li> <li>• Unit 4. Emergencies and respiratory emergencies</li> <li>• Unit 5. Emergencies and traumatological emergencies</li> <li>• Unit 6. Neurological emergencies and emergencies</li> <li>• Unit 7. Other urgencies and emergencies</li> </ul>						

4	<b>9997002803</b>	<b>Enfermería escolar</b>	<b>Semestre 2 / Spring Term (Jan -Jun)</b>		<b>Español</b>	<b>3</b>
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## Bachelor's Degree in Pharmacy (*Grado en Farmacia*) (**Spanish**)

1	<b>9976002101</b>	<b>Procesos Biológicos I</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>
1	<b>9976002102</b>	<b>Estructura y Función del Cuerpo Humano I</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>
1	<b>9976002103</b>	<b>Biofísica y Físico-Química</b>	<b>Semestre 2 / Spring Term (Jan -Jun)</b>		<b>Español</b>	<b>6</b>
1	<b>9976002104</b>	<b>Matemáticas</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>

1	9976002106	Estructura y Función del Cuerpo Humano II	Semestre 2 / Spring Term (Jan- Jun)		Español	6
1	9976002107	Iniciación al Trabajo del Laboratorio	Semestre 1 / Fall Term (Sept-Jan)		Español	3
1	9976002108	Técnicas Instrumentales	Semestre 2 / Spring Term (Jan- Jun)		Español	6
1	9976002109	Procesos Biológicos II	Semestre 2 / Spring Term (Jan- Jun)		Español	6
1	9976002110	Informática y Tecnología de la Información y Comunicación Aplicados a la Farmacia	Semestre 2 / Spring Term (Jan- Jun)		Español	3
1	9976002112	Química General I	Semestre 1 / Fall Term (Sept-Jan)		Español	6
1	9976002113	Química General II	Semestre 2 / Spring Term (Jan- Jun)		Español	3

Year: <b>2nd</b>	Course code: <b>9976002201</b>	Course: <b>Pathophysiology</b> ( <i>Fisiopatología</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Basic concepts of pathophysiology.</li> <li>Unit 2. Self-defense mechanisms.</li> <li>Unit 3. The endocrine system.</li> <li>Unit 4. The neurological system.</li> <li>Unit 5. The digestive system.</li> <li>Unit 6. The pulmonary system.</li> <li>Unit 7. The cardiovascular system.</li> <li>Unit 8. The renal and urological systems.</li> <li>Unit 9. The hematological and lymphatic system.</li> <li>Unit 10. The musculoskeletal system.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9976002203</b>	Course: <b>Organic Chemistry I</b> ( <i>Química Orgánica I</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Structure and properties of organic compounds. Functional groups.</li> <li>Unit 2: Nomenclature.</li> <li>Unit 3: Types of organic reactions. Reaction intermediates.</li> <li>Unit 4: Alkanes and cycloalkanes. Conformations.</li> <li>Unit 5: Stereochemistry.</li> <li>Unit 6: Alkenes.</li> <li>Unit 7: Alkynes.</li> <li>Unit 8: Sand. Introduction to aromatic compounds present in active ingredients of natural origin.</li> <li>Unit 9: Introduction to the structural determination of organic compounds by means of <sup>1</sup>H &amp; <sup>13</sup>C</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9976002204</b>	Course: <b>Parasitology</b> ( <i>Parasitología</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Fundamentals of Animal Biology. Zoology.</li> <li>Unit 2. Parasite concept. General classification of human parasites.</li> <li>Unit 3. Morphology and bionomy of parasites.</li> <li>Unit 4. Parasite-host relationship.</li> </ul>						

- Unit 5. Main parasites that cause diseases in humans. Diseases caused by protozoa, flatworms and nematodes. Arthropods of health interest
- Unit 6. Prevention and control of diseases caused by parasites.

Year: <b>2nd</b>	Course code: <b>9976002205</b>	Course: <b>Pharmacognosy</b> ( <i>Farmacognosia</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction. general. General concepts. 1.1. Pharmacognosy: general. 1.2. Pharmacoergasia: concept and objectives.</li> <li>• Unit 2. Active ingredients derived from primary metabolism. 2.1. Carbohydrates. 2.2. Lipids and protids.</li> <li>• Unit 3. Active ingredients derived from secondary metabolism. 2.3. Phenolic derivatives I. 2.4. Phenolic derivatives II. 2.5. Terpene derivatives I. 2.6. Terpene derivatives II. 2.7. Alkaloid derivatives. alkaloids I. 2.8. Alkaloids II</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9976002206</b>	Course: <b>Pharmaceutical Botany</b> ( <i>Botánica Farmacéutica</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. General. 1.1. Introduction to plant biology. general (part 1). Plant life. 1.2. General (part 2): levels of organization, reproduction, ecology and uses</li> <li>• Unit 2. Cryptogamy. 2.1. Algae. 2.2. Fungi. 2.3. Mosses and ferns (bryophytes and pteridophytes)</li> <li>• Unit 3. Phanerogamia. 3.1. Gymnosperms. 3.2. Angiosperms. 3.3. Monocots (lilid). 3.4. Eudicotyledons: basal ranunculids and rosids. 3.5. Eudicotyledons: asterids</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9976002207</b>	Course: <b>Organic Chemistry II</b> ( <i>Química Orgánica II</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Halogenated derivatives.</li> <li>• Unit 2: Alcohols and phenols.</li> <li>• Unit 3: Ethers and epoxides.</li> <li>• Unit 4: Amines.</li> <li>• Unit 5: Aldehydes and ketones</li> <li>• Unit 6: Carboxylic acids and derivatives</li> <li>• Unit 7: Most common heterocyclic compounds in drugs.</li> <li>• Unit 8: Drug synthesis integration problems. Structural Determination of Drugs by 1 H and 13C.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9976002208</b>	Course: <b>Biological processes III</b> ( <i>Procesos Biológicos III</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Nucleic Acid Core and Metabolism. 1.1. The nucleus, nucleic acids, chromosomes, karyotype. 1.2 Nucleotide metabolism. 1.3. Pentose phosphate route. 1.4. Cell division and cell cycle control.</li> <li>• Unit 2. Cellular Relationships and Metabolic Coordination. 2.1 Cell interactions, cell migration.. 2.2. Metabolic coordination and hormonal regulation. 2.3. Metabolic status in feeding, fasting, and starvation.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9976002209</b>	Course: <b>Microbiology</b> ( <i>Microbiología</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. General microbiology. 1.1. Introduction.. 1.2. General immunology. 1.3. Bacterial morphology and structure. 1.4. Bacterial metabolism.1.5. Bacterial genetics. 1.6. Host-to-bacterium relationship. 1.7. Antimicrobials.1.8. General Mycology and Parasitology. 1.9. General Principles of Laboratory Diagnosis of Infectious Diseases. 1.10. Sterilization, disinfection and asepsis.</li> <li>• Unit 2. Important bacterial genera in human Pathology. 2.1. Genus Staphylococcus, Micrococcus and Rothia. 2.2. Genera Streptococcus and Enterococcus. 2.3. Gram-positive bacilli. 2.4. Gram-negative cocci and bacilli. 2.5. Anaerobic</li> </ul>						

bacteria. 2.6. Acid-alcohol resistant bacteria. Genus Mycobacterium. 2.7. Spirochetes. 2.8. Other bacteria involved in human pathology.

- Unit 3. Virology. 3.1. Classification of viruses and subviral agents. 3.2. Viral structure. 3.3. Viral genetics. 3.4. Viral infection cycle. 3.5. Clinical applications of viruses. 3.6. Viral infection patterns. 3.7. Human pathogenic viruses.

Year: <b>2nd</b>	Course code: <b>9976002210</b>	Course: <b>Statistics and Epidemiology</b> ( <i>Estadística y Epidemiología</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Statistics .1.1. Statistics Basics. 1.2. Descriptive statistics. 1.3. Applications of Probability. 1.4. Probability Distribution: Normal, Binomial, and Poisson. 1.5.- Sampling, Estimation and Hypothesis Testing. 1.6.- Statistics Applied to Clinical Research I: Tests between qualitative Variables. 1.7.- Statistics applied to clinical research II: conformity of a sample. 1.8.- Statistics Applied to Clinical Research III: Tests between Variables
- Unit 2. Epidemiology. 2.1. History of Epidemiology. 2.2. Epidemiology Basics. 2.3. Epidemic Outbreaks and Causality in Epidemiology. 2.4. Models of Scientific Studies in Biological Research. 2.5. Epidemiology and prevention of communicable diseases. 2.6. Epidemiology and prevention of highly prevalent diseases and mortality.

Year: <b>2nd</b>	Course code: <b>9976002212</b>	Course: <b>Chemical Analysis I</b> ( <i>Análisis Químico I</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to Analytical Chemistry. 1.2- Types of Chemical Analysis. 1.2.- Methods of Analysis. 1.3.- Stages of the analytical process
- Unit 2. Sample collection and preparation. 2.1-Sampling. 2.2- Storage and transport. 2.2- Sample Processing: Basic Operations
- Unit 3. Chemical Balance. 3.1. - Ionic strength. 3.2- Activity and activity coefficients. 3.3- Systematic balance treatment
- Unit 4. Acid-base balance. 4.1- Systematic study of Ph. 4.2- Buffer solutions. 4.3- Polyprotic systems
- Unit 5. Acid-base volumetrics. 5.1- Fundamentals of Volumetric Analysis. 5.2- Acid-base titrations
- Unit 6. Equilibrium of complex formation. 6.1- Types of ligands. 6.2- Training constants. 6.3- Complex Formation Volumes

Year: <b>2nd</b>	Course code: <b>9976002213</b>	Course: <b>Chemical Analysis II</b> ( <i>Análisis Químico II</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1. Precipitation equilibrium. Solubility balance. 1.1- Concept and factors affecting solubility. 1.2.- Fractional precipitation. 1.3- Precipitation volumes
- Unit 2. Red-ox Balance. 2.1- Fundamentals of Electrochemistry. 2.2- Potentiometry and main electroanalytical techniques. 2.3- Redox volumes
- Unit 3. Gravimetries. 3.1- Precipitation gravimetries. 3.2- Volatilization gravimetries

Year: <b>3rd</b>	Course code: <b>9976002301</b>	Course: <b>Pharmaceutical Chemistry I</b> ( <i>Química Farmacéutica I</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to Pharmaceutical Chemistry .1.1. Stages in drug development. 1.2. Sources for New Drug Discovery. 1.3. Drug Nomenclature
- Unit 2. Physicochemical properties influencing the action of drugs. 2.1. Phases in the action of a drug. Solubility in water and solubility in lipids. Degree of ionization: Acid-base characteristics. Lipinski's Rules
- Unit 3. Drug-receptor interaction. 3.1. Intermolecular drug-receptor interactions. 3.2. Conformation and biological activity. 3.3. Biological Configuration and Activit. 3.4. Obtaining enantiomers. Real Cases of Chiral Drugs
- Unit 4. Drug metabolism. 4.1. Metabolic Processes Phase I. 4.2. Phase II Metabolic Processes. 4.3. Aspects and Consequences of Metabolic Processes
- Unit 5. Drug Design and Optimization: Improving Target Access. 5.1. Propharmaceuticals. 5.2. Other Approaches
- Unit 6. Drug Design and Optimization: Improving Target Interactions. 6.1. Pharmacomodulation strategies . 6.2. QSAR Structure-Activity Quantitative Relationships

Year: <b>3rd</b>	Course code: <b>9976002302</b>	Course: <b>Genetics (<i>Genética</i>)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Fundamentals of genetics. Molecular basis of genetic information. Mendelian genetics and not Mendelian.
- Unit 2. Variability and conservation of genetic information.
- Unit 3. Regulation of gene expression.
- Unit 4. Transmission of genetic information.
- Unit 4. Genetic-based diseases.
- Unit 5. Population genetics.

Year: <b>3rd</b>	Course code: <b>9976002303</b>	Course: <b>Bromatology (<i>Bromatología</i>)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to bromatology.
- Unit 2. Plant-based foods.
- Unit 3. Foods of animal origin.
- Unit 4. Other foods.
- Unit 5. Food stability.
- Unit 6. Food toxicology.
- Unit 7. Food analysis and control.

Year: <b>3rd</b>	Course code: <b>9976002304</b>	Course: <b>Immunology (<i>Inmunología</i>)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to Immunology.
- Unit 2. Physiology of the immune system: cells, organs, and tissues.
- Unit 3. Mechanisms and molecular basis of the immune response. 3.1. Phagocytic cells. 3.2. Complement System. 3.3. Antibodies. 3.4. Antigenic presentation. 3.5. T lymphocytes. 3.6. B lymphocytes. 3.7. Adhesion molecules. 3.8. Cytokines.
- Unit 4. Mechanisms of genetic variability of the immune system.
- Unit 5. Introduction to Immune System Disorders: Hypersensitivity, Autoimmunity, immunodeficiencies.
- Unit 6. Immunomodulatory drugs.
- Unit 7. Applications of the immune system in therapy.
- Unit 8. Biotechnological techniques based on immunology.

Year: <b>3rd</b>	Course code: <b>9976002305</b>	Course: <b>Pharmaceutical Chemistry II (<i>Química Farmacéutica II</i>)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Drug synthesis. 1.1. General principles: back-synthetic analysis. 1.2. Synthesis of drugs with aromatic structure. 1.3. Synthesis of drugs with non-condensed and condensed heterocyclic structure.
- Unit 2. Study of the main drug families .2.1. Antitumor drugs that interact directly with nucleic acids and DNA antimetabolites. 2.2. Chemotherapeutic enzyme inhibitor drugs: Antibacterial and antiviral. 2.3. Pharmacodynamic enzyme inhibitor drugs: Anti-inflammatories, cholesterol-lowering drugs, antihypertensives and antidepressants.. 2.4. Drugs that act on membrane receptors: cholinergic, adrenergic and modulators of GABA. 2.5. Drugs that act on ion channels: local anesthetics, hypotensives, antidiabetics and antiulcer inhibitors.

Year: <b>3rd</b>	Course code: <b>9976002306</b>	Course: <b>Basic Nutrition (<i>Nutrición Básica</i>)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Fundamentals of nutrition. 1.1: Introduction to nutrition. 1.2: Physiological and Biochemical Basis of Nutrition. 1.3: Energy and energy value of nutrients



- Unit 2. Macronutrients. 2.1: Carbohydrates. Part 1. 2.2: Carbohydrates. Part 2 and Dietary Fiber. 2.3: Proteins. 2.4: Lipids
- Unit 3. Micronutrients. 3.1: Vitamins. 3.2: Mineral Elements. 3.3: Water and electrolytes
- Unit 4. Balanced diet. 4.1: Introduction to a balanced diet.. 4.2: Dietary Guidelines, Nutritional Recommendations and Servings.. 4.3: Assessment of nutritional status. 4.4: Nutrition education and planning.
- Unit 5 Nutrition in the Life Cycle. 5.1: Nutrition in the pre-gestational, gestational and lactation periods.. 5.2: Nutrition in childhood and adolescence. 5.3: Nutrition in menopause and the elderly
- Unit 6. Nutrition in the Life Cycle. 6.1. Food intolerances and allergies.. 6.2. Drug-nutrient interactions. 6.3. Microbiota and health

Year: <b>3rd</b>	Course code: <b>9976002307</b>	Course: <b>Pharmacology I</b> ( <i>Farmacología I</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1: General pharmacology. 1.1: Concepts and historical development of Pharmacology. 1.2: Pharmacokinetics I. Routes of administration. Absorption. Distribution. 1.3: Pharmacokinetics II. Metabolism. Elimination. 1.4: Pharmacodynamics: Mechanism of action of drugs. 1.5: Adverse Drug Reactions. 1.6: Drug interactions. 1.7: Development and evaluation of new drugs. 1.8. Information about medicines. Technical sheets. International classification of ATC drugs
- Unit 2: Pharmacology of the autonomic nervous system. 2.1 Pharmacology of the autonomic nervous system I: Adrenergic agonist drugs. Drugs Adrenergic antagonists. 2.2. Pharmacology of the autonomic nervous system II: Cholinergic agonist drugs. Drugs Cholinergic antagonists. 2.3. Pharmacology of the autonomic nervous system III: Neuromuscular blocking drugs 2.4. Pharmacology of the autonomic nervous system IV: Local anesthetic drugs

Year: <b>3rd</b>	Course code: <b>9976002308</b>	Course: <b>Pharmacology II</b> ( <i>Farmacología II</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1: Pharmacology of the digestive system .1.1: Pharmacology of acid secretions .1.2: Pharmacology of intestinal motility . 1.3: Pharmacology of bile secretion, pancreatic secretion and inflammatory bowel disease.
- Unit 2: Pharmacology of the cardiovascular system .2.1: Diuretics . 2.2: Calcium channel blockers. 2.3: Renin-Angiotensin-Aldosterone System Pharmacology. 2.4: Pharmacology of arterial hypertension. 2.5: Pharmacology of Heart Failure. 2.6: Antianginal drugs. 2.7: Antiarrhythmic drugs
- Unit 3: Blood pharmacology and hematopoietic system. 3.1: Hemostasis and coagulation drugs. 3.2: Pharmacology Anemia and Hematopoiesis
- Unit 4: Pharmacology of infectious processes. 4.1: Anti-Infective Drugs General. 4.2: Antibacterial and anti-tuberculosis drugs . 4.3: Antivirals, antifungals and antiparasitics
- Unit 5: Pharmacology of inflammation and immunity. 5.1: Opioid analgesics. 5.2: Non-steroidal anti-inflammatory drugs. 5.3: Corticosteroid drugs. 5.4: Immunomodulators
- Unit 6: Pharmacology of the respiratory system. 6.1: Anti-asthmatics. 6.2: Cough suppressants, mucolytics, expectorants

Year: <b>3rd</b>	Course code: <b>9976002309</b>	Course: <b>Molecular Biology</b> ( <i>Biología Molecular</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to Molecular Biology. Structure and function of nucleic acids. Structure and function of chromatin.
- Unit 2. Organization of the genome.
- Unit 3. DNA: Replication and its regulation. Mutation and DNA repair. DNA transcription and its regulation.
- Unit 4. mRNA translation and regulation.
- Unit 5. Structure, function, and regulation of proteins.
- Unit 6. Molecular Regulation of the Cell Cycle and Molecular Basis of Signal Transduction Pathways

Year: <b>3rd</b>	Course code: <b>9976002310</b>	Course: <b>Pharmaceutical Care</b> ( <i>Atención farmacéutica I</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to Pharmaceutical Care: Concept and Evolution. Legal Framework.
- Unit 2. Communication with the Patient and other healthcare professionals in Pharmaceutical Care. The Clinical Interview.

- Unit 3. Medication-Related Problems (PRM) and Negative Outcomes Associated with Medication Use Medication (MRI).
- Unit 4. Safety in the Use of Medications. Medication Errors.
- Unit 5. Pharmacovigilance.
- Unit 6. Professional Pharmaceutical Care Services. Best Practices.
- Unit 7. Health education. Health Self-Care.
- Unit 8. Scientific Research Applied to Pharmaceutical Care.

Year: <b>3rd</b>	Course code: <b>9976002311</b>	Course: <b>Public Health (Salud Pública)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1: Introduction to public health. health process disease. Determinants of health.
- Unit 2: Health education. Information and knowledge management techniques
- Unit 3: Demography and public health
- Unit 4: Health promotion and disease prevention according to different age groups
- Unit 5: Environmental determinants of health. Environmental health programs.
- Unit 6: Pharmaceutical policy. Health planning and management

Year: <b>4th</b>	Course code: <b>9976002401</b>	Course: <b>Pharmaceutical Technology I (Tecnología Farmacéutica I)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Medicines as a health technology. Basics of pharmaceutical technology.
- Unit 2. Components of medicinal products: active ingredients, excipients and consumables conditioning.
- Unit 3. Preformulation.
- Unit 4. Dosage forms of oral administration: solids.
- Unit 5. Dosage forms of oral administration: liquids.
- Unit 6. Dosage forms of administration Topical and mucous membranes.
- Unit 7. Legislation on the manufacture of medicines, medical devices and cosmetics.

Year: <b>4th</b>	Course code: <b>9976002402</b>	Course: <b>Pharmaceutical Technology II (Tecnología Farmacéutica II)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Components of medicinal products: active ingredients, excipients and packaging material.
- Unit 2. Modified-release dosage forms.
- Unit 3. Dosage forms of parenteral administration.
- Unit 4. Dosage forms of pulmonary administration.
- Unit 5. Dosage forms of ophthalmic, rectal and vaginal administration.

Year: <b>4th</b>	Course code: <b>9976002403</b>	Course: <b>Biological Analysis and Laboratory Diagnostics (Análisis Biológico y Diagnóstico de Laboratorio)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. The clinical laboratory and analytical studies. Analytical, Pre-analytical and Post-analytical.
- Unit 2. Assessment of results: sensitivity and specificity. Analytical results reports.
- Unit 3. Analytical techniques for application in biological samples. Physico-chemical, biological and histological foundations of analytical techniques
- Unit 4. Blood tests: biochemistry and hematology. Range of the result.
- Unit 5. Urinalysis. Techniques. Interpretation of results.
- Unit 6. Tissue samples, biopsies. Staining techniques. Tumor markers.
- Unit 7. Pathogen analysis.

- Unit 8. Microbiological analysis of food: Hygienic control of food products, surfaces, manipulators and environments.
- Unit 9. Microbiological analysis of water.

Year: <b>4th</b>	Course code: <b>9976002404</b>	Course: <b>Organization and Management of the Pharmaceutical Company</b> <i>(Organización y Gestión de la Empresa Farmacéutica)</i>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1. Drug Markets
- Unit 2. Introduction to Business Economics
- Unit 3: Pharmaceutical Industry Departments. 3.1. Technical and Records Department. 3.2-Human Resources department. 3.3- Key Account y Market Access department. 3.4-Information system department. 3.5. Sales Force Effectiveness Department. 3.6. Market Research Department. 3.7-Medical department
- Unit 4: Types of Pharmaceutical Companies. 4.1. Pharmaceutical Distribution Companies. 4.2. Generic Drug Companies. 4.3. The Generic Pharmaceutical Market. 4.4. Generic drug companies. 4.5. Hospital Drug Companies
- Unit 5: Corporate Social Responsibility in Business
- Unit 6: Pharmaceutical Marketing
- Unit 7: Organization and systems applied to the pharmaceutical industry
- Unit 8: Accounting and Financial Management
- Unit 9: Strategic Management in the Pharmacy Office

Year: <b>4th</b>	Course code: <b>9976002405</b>	Course: <b>Toxicology (Toxicología)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Fundamental toxicology. 1.1: Introduction to Toxicology. 1.2. Toxic-intoxication
- Unit 2. Main types of toxic effects. 2.1. Toxicokinetics. 2.2. Mechanisms of toxicity at the cellular level. 2.3. Organ-specific toxicity. 2.3. Mechanisms of toxicity at the non-specific level. 2.4. Factors that modify toxicity. 2.5. Antitoxic therapeutics
- Unit 3. Analytical toxicology. 3.1. Toxicity assessment. 3.2. Toxicological analysis

Year: <b>4th</b>	Course code: <b>9976002406</b>	Course: <b>Economy (Economía)</b>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to Health Economics and Economics
- Unit 2. Pharmacoeconomic Evaluation Methods
- Unit 3. Health Expenditure and Pharmaceutical Provision
- Unit 4. National Health System
- Unit 5. Drug Pricing Systems
- Unit 6. Innovation and development of new medicines
- Unit 7. Authorisation and registration of medicines
- Unit 8. Drug Production: Organization and Costs
- Unit 9. Drug Logistics. Organization and costs
- Unit 10. Organization, concerts and costs of the pharmacy
- Unit 11. Strategic Management in Medication Management

Year: <b>4th</b>	Course code: <b>9976002407</b>	Course: <b>Pharmacology III</b> <i>(Farmacología III)</i>	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1: Endocrine-metabolic pharmacology. 1.1: Insulin and antidiabetic drugs. 1.2: Thyroid drugs. 1.3: Sex hormones and contraceptive drugs. 1.4: Adenohypophyseal and hypothalamic hormones. 1.5: Antidiuretic and aquatic drugs.

Uterine pharmacology. 1.6: Lipid-lowering drugs. 1.7: Pharmacology of calcium and phosphorus. 1.8: Fat-soluble and water-soluble vitamins. 1.9: Hypouricemic and antigout-lowering drugs

- Unit 2: Antineoplastic pharmacology. 2.1: Antineoplastic chemotherapy. 2.2: Antineoplastic immunomodulatory drugs

Year: <b>4th</b>	Course code: <b>9976002408</b>	Course: <b>Pharmacokinetics</b> ( <i>Farmacocinética</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction</li> <li>• Unit 2. Bioavailability and bioequivalence</li> <li>• Unit 3. Kinetics of the LADME process</li> <li>• Unit 4. Liberation</li> <li>• Unit 5. Absorption</li> <li>• Unit 6. Routes of administration</li> <li>• Unit 7. Distribution</li> <li>• Unit 8. Metabolism</li> <li>• Unit 9. Excretion</li> <li>• Unit 10. Clinical pharmacokinetics</li> <li>• Unit 11. Multiple Doses</li> </ul>						

Year: <b>4th</b>	Course code: <b>9976002409</b>	Course: <b>Bioinformatics</b> ( <i>Bioinformática</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Bioinformatics. 1.1 History of Bioinformatics. 1.2. Areas of Bioinformatics</li> <li>• Unit 2. Bibliographic databases. 2.1. Basic concepts of bibliographic databases. Pubmed. 2.2. OMIM</li> <li>• Unit 3. Nucleic Acid Databases. 3.1. Nucleic Acid Databases: Genomes, Genes, and Transcripts. 3.2. DNA Sequence Analysis</li> <li>• Unit 4. Protein Databases. 4.1. Protein Sequence Databases. 4.2. Protein Structure Databases. 4.3. Protein Sequence Analysis. 4.4. Sequence Alignment by Pair Comparison. 4.5. Multiple Sequence Alignment. 4.6. Protein Domains and Families</li> <li>• Unit 5. Special software in life sciences. 5.1. Small molecule databases. PubChem and Chemspider</li> <li>• Unit 6. Computer-aided structural design</li> </ul>						

Year: <b>4th</b>	Course code: <b>9976002410</b>	Course: <b>Pharmaceutical Biotechnology</b> ( <i>Biotecnología Farmacéutica</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Pharmaceutical Biotechnology. 1.1- Biologic/biotech drugs. 1.2- Economic considerations. 1.3- Regulation of biosimilar drugs</li> <li>• Unit 2. Recombinant Proteins. 2.1- Recombinant DNA design, biophysical and biochemical analysis. 2.2- Production and purification, formulation of biotechnological products. 2.3- PD/PK of therapeutic proteins. 2.4- Immunogenicity of therapeutic proteins</li> <li>• Unit 3. Monoclonal antibodies with therapeutic application. 3.1-Characteristics. 3.2- mAb-based therapy: cancer, solid organ transplantation</li> <li>• Unit 4. Biotech drugs. 4.1- Hormones: insulin, FSH, growth hormone, hematopoietic factors. 4.2- Blood products, recombinant clotting factors, thrombotic agents. 4.3- Enzymes: DNase I. 4.4- Interferons and interleukins. 4.5-Vaccines</li> <li>• Unit 5. Advanced Therapies. 5.1-Gene therapy. 5.2- Cell therapy. 5.3- Tissue engineering</li> <li>• Unit 6. Clinical Research. 6.1- Development of new drugs. 6.2- Clinical trials. 6.3- Biomarkers. 6.4- Personalized medicine</li> </ul>						

Year: <b>4th</b>	Course code: <b>9976002411</b>	Course: <b>Pharmaceutical Care II</b> ( <i>Atención Farmacéutica II</i> )	Program: <b>Bachelor's Degree</b> <b>in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Professional Pharmaceutical Healthcare Services.</li> </ul>						

- Unit 2. Dispensing of medications. Unit dose. Pharmaceutical Dispensing Service.
- Unit 3. Pharmaceutical Indication Service.
- Unit 4. Therapeutic non-compliance. SPD. Therapeutic adherence.
- Unit 5. Pharmacotherapeutic follow-up.
- Unit 6. Pharmacotherapeutic Reconciliation. Medication Use Review Service.
- Unit 7. Pharmaceutical Care from the Hospital Pharmacy Service.
- Unit 8. Digital Pharmaceutical Care

Year: <b>5th</b>	Course code: <b>9976002805</b>	Course: <b>Medical Devices. Dermopharmaceuticals &amp; Cosmetics</b> ( <i>Productos Sanitarios. Productos dermofarmacéuticos y cosméticos</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1: Cosmetics and Personal Hygiene Products. 1.1: Cosmetic legislation. 1.2: Anatomy and Physiology of the Skin. 1.3: Cosmetic Forms and Ingredients. 1.4: Cleanliness and hygiene. 1.5: Facial Cosmetics. 1.6: Body cosmetics. 1.7: Hair and oral cosmetics. 1.8: Photoprotection. 1.9: Decorative Cosmetics. 1.10: Children's Cosmetics
- Unit 2: Medical Devices. 2.1: Definition and classification and Regulations, legislation and quality assurance. 2.2: Medical devices for in vitro diagnostics. 2.3: Ophthalmic products. 2.4: Prosthetics and orthotics. 2.5: Aerosol Therapy. 2.6: Cannulas, catheters, tubes and tubes. 2.7: Ostomized. 2.8: Injection and Healing Material. 2.9: Contraceptives. 2.10: Hygiene and protection

Year: <b>5th</b>	Course code: <b>9976002501</b>	Course: <b>Pharmacotherapy and clinical pharmacy</b> ( <i>Farmacoterapia y farmacia clínica</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1: The professional practice of pharmacy. 1.1: Primary Care Pharmaceutical Services; Specialized, Socio-sanitary and Community: Roles and Responsibilities.
- Unit 2: Methodology for Drug Selection. 2.1: Evidence-Based Medicine. 2.2: Medication Information. 2.3: Drug Selection. 2.4: Therapeutic Exchange. Guides; Protocols.
- Unit 3: Clinical Pharmacy and Pharmacotherapy. 3.1: Introduction to Clinical Pharmacy. Minor pathology. 3.2: Use of Medications in Special Situations: Pregnancy . 3.3: Use of Medications in Special Situations: Pediatrics and Breastfeeding. 3.4: Use of Medications in Special Situations: Elderly. 3.5: Effect of Drugs in Pathological Situations. 3.6: Specific Clinical Pharmacy: Cardiovascular Risk. 3.7: HTA Pharmacotherapy; Dyslipidemias, Diabetes. 3.8: Complex Chronic Patient. Pharmacotherapeutic follow-up. Review of Medication Use. 3.9: Pharmacotherapy of COPD/ASTHMA patients. (Guides). 3.10: ONC/CHM patient.
- Unit 4: Research / Safety / Cost of the Drug. 4.1: Pharmacoepidemiology. 4.2: Pharmacoeconomics. 4.3: Drug Utilization Studies. 4.4. Incidents with Medical Devices.

Year: <b>5th</b>	Course code: <b>9976002502</b>	Course: <b>Pharmacogenetics and Pharmacogenomics</b> ( <i>Farmacogenética y Farmacogenómica</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1 – Introduction to Genomic or Personalized Medicine
- Unit 2 – Genetic basis of pharmacogenetics and pharmacogenomics
- Unit 3 – Pharmacogenetics and Pharmacogenomics: biomarkers and techniques applied to their detection.
- Unit 4 – Applications of genomic medicine. 4.1. In drug metabolism. 4.2. In the therapeutic response of the drug. 4.3. In the pharmaceutical industry. 4.4. Clinical pharmacogenetics
- Unit 5 – Ethical aspects of genomic medicine

Year: <b>5th</b>	Course code:	Course:	Program:	Term: <b>Semester 1</b>	Teaching Language:	Cr: <b>3 ECTS</b>
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	<b>9976002503</b>	<b>Pharmaceutical Technology III</b> ( <i>Tecnología Farmacéutica III</i> )	<b>Bachelor's Degree in Pharmacy</b>		<b>Spanish</b>	
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Quality assurance. Good Manufacturing Practice (GMP).</li> <li>Unit 2. Standard Operating Procedures (SOPs) in manufacturing, storage, transportation, cleaning.</li> <li>Unit 3. Non-clinical studies: Good Laboratory Practice Standards.</li> <li>Unit 4. Royal Spanish Pharmacopoeia and the Guidelines for the Preparation of Medicines.</li> <li>Unit 5. Conditioning and stability of medicines.</li> </ul>						

Year: <b>5th</b>	Course code: <b>9976002811</b>	Course: <b>Food Technology &amp; Legislation</b> ( <i>Tecnología de los Alimentos y Legislación</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Food industry. 1.1. Introduction to food technology. 1.2. The food industry. Meat industry. Fishing industry. Dairy and cheese industry. Beverage industry. 1.3. Hazard Analysis and Critical Point Control in the Food Industry (HACCP).</li> <li>Unit 2. Operations &amp; Processes. 2.1. Operations in the manufacture, packaging and preservation of food. 2.2. New Technologies in Food Preservation.</li> <li>Unit 3. Food law and legislation. 3.1. Spanish and European Food Legislation.</li> </ul>						

Year: <b>5th</b>	Course code: <b>9976002813</b>	Course: <b>Environmental Health</b> ( <i>Salud Ambiental</i> )	Program: <b>Bachelor's Degree in Pharmacy</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Conceptual Framework of Environmental Health. Methods in Environmental Health</li> <li>Unit 2. General sanitary-environmental problems (water, air, soil, noise, chemicals). Climate change and health</li> <li>Unit 3. Physical agents. Noise and radiation.</li> <li>Unit 4. Chemicals. Ecotoxicology</li> <li>Unit 5. Sustainable development and the future.</li> <li>Unit 6. Organization and legal framework. Documentation and bibliography. Other Environmental Issues</li> </ul>						

## Bachelor's Degree in Dietetic and Human Nutrition (*Grado en Nutrición Humana y dietética*) (**Spanish**)

<b>1</b>	<b>P988001101</b>	<b>Química Aplicada</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>P988001102</b>	<b>Biología</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>P988001103</b>	<b>Anatomía Humana</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>P988001104</b>	<b>Antropología</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>P988001105</b>	<b>Iniciación al trabajo de laboratorio</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>3</b>
<b>1</b>	<b>P988001106</b>	<b>Fisiología</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>P988001107</b>	<b>Bioquímica</b>	<b>Semestre 2 / Spring Term (Jan-Jun)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>P988001108</b>	<b>Psicología</b>	<b>Semestre 2 / Spring Term (Jan-Jun)</b>		<b>Español</b>	<b>6</b>

1	P988001109	Bromatología	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	P988001110	Estadística	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	P988001111	Botánica	Semestre 2 / Spring Term (Jan–Jun)		Español	3

Year: <b>2nd</b>	Course code: <b>P988001202</b>	Course: <b>Microbiology</b> ( <i>Microbiología</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to microbiology. General concepts.
- Unit 2. Classification of microorganisms.
- Unit 3. Bacterial and fungal morphology and structures
- Unit 4. Microbial Metabolism and Genetics
- Unit 5. Virology basics.
- Unit 6. Definition of microbiota. Human Microbiome and Health
- Unit 7. Pathogenicity and virulence of bacteria and fungi. Routes of transmission of microorganisms Pathogens.
- Unit 8. Main groups of antimicrobials.
- Unit 9. Pathogenic bacteria that cause intestinal poisoning and infections. Gram Negative infections that cause intestinal infections: enterobacteriaceae and others.
- Unit 10. Main food contaminating fungi. Mycotoxins
- Unit 11. Main Viruses Contaminating Food
- Unit 12. Quality indicator microorganisms. Detection of microbial contamination in foods.
- Unit 13. Ensuring the microbiological quality of food
- Unit 14. Microbiology of fermented foods.
- Unit 15. Microorganisms as producers of food additives and ingredients

Year: <b>2nd</b>	Course code: <b>P988001203</b>	Course: <b>Human Genetics</b> ( <i>Genética Humana</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1: The Nature of the Gene. 1.1. Mendel's principles. 1.2. Beyond Mendel: Linkage Studies. 1.3. Organization and variability of the human genome.
- Unit 2: Quantitative and Population Genetics. 2.1. The inheritance of complex characters. 2.2: Population genetics.
- Unit 3: Genetics, Health and Nutrition. 2.3. Monogenic and polygenic metabolic diseases. 2.4. The Interaction Between Genes and Nutrients

Year: <b>2nd</b>	Course code: <b>P988001204</b>	Course: <b>Basic Nutrition I</b> ( <i>Nutrición básica I</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Nutrition as a Science: Concept, Nutrients, Metabolism and Energy Requirements of the body.
- Unit 2 Carbohydrates: absorption, transport, metabolism and excretion. Features & Fonts
- Unit 3 Proteins: absorption, transport, metabolism and excretion. Functions and fonts.
- Unit 4 Lipids: absorption, transport, metabolism and excretion. Functions and fonts.
- Unit 5 Water-soluble and fat-soluble vitamins: absorption, transport, metabolism and excretion. Non-nutrient components.
- Unit 6 Minerals: absorption, transport, metabolism and excretion. Water and its importance nutritional.

Year: <b>2nd</b>	Course code: <b>P988001205</b>	Course: <b>Toxicology</b> ( <i>Toxicología</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. Principles of Toxicology. 1.1. General Toxicology Information. 1.2. Intoxication and Biological Factors Influencing It. 1.3. Mechanisms of action of toxic substances
- Unit 2. Food Toxicity Assessment. 2.1. Determination of Toxic Agents in Food. 2.2. Toxicity studies. 2.3. Toxicology Criteria and Toxicological Units. 2.4. Chemoprevention and Health-Promoting Diet Ingredients
- Unit 3. Toxic substances naturally present in food . 3.1. Natural Toxins in Animal Foods. 3.2. Natural Toxins in Plant-Based Foods. 3.3. Toxic substances of fungal origin
- Unit 4. Toxicity from environmental pollution. 4.1. Food contaminants from industrial waste. 4.2. Pesticide residues in food. 4.3. Toxiinfections and poisoning by microorganisms and food allergies
- Unit 5. Toxicity from environmental pollution. 5.1. Toxicity of additives. 5.1. Toxic substances originating in food processing

Year: <b>2nd</b>	Course code: <b>P988001206</b>	Course: <b>Social and Collective Restoration</b> ( <i>Restauración colectiva y social</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1. History and context of collective restoration. 1.1: History of Collective Restoration. 1.2: Current trends in gastronomy
- Unit 2. Introduction to collective and social catering. 2.1: Introduction to collective and social catering. 2.2: Food Security in Collective Catering. 2.3: Production areas. Facilities & Equipment
- Unit 3. Management of collective catering. 3.1: Raw Materials Management: Receipt and Stocks. 3.3: Management of product storage and conservation of raw materials. 3.4: Management of the preparation of dishes and the operation of kitchens
- Unit 4. Culinary techniques in collective catering. 4.1: Deferred Restore: Systems and Applications. 4.2: Culinary techniques most commonly used in collective catering
- Unit 5. Nutritional value and regulations in collective catering. 5.1: Effect of processing on the nutritional value of foods. 5.2: Specific regulations on collective catering
- Unit 6. Menu planning in collective catering . 6.1: Menu planning according to consumer needs. 6.2: Collective catering in schools, nursing homes and hospitals

Year: <b>2nd</b>	Course code: <b>P988001207</b>	Course: <b>Food Technology</b> ( <i>Tecnología de los alimentos</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1. Introduction to Food Technology and the Food Industry: concept and relationship with other sciences.. 1.1. Concept of Food Technology and New Technologies . 1.2. Food industry: characteristics, subsectors and organization
- Unit 2. Operations in the manufacture, packaging and preservation of food.. 2.1. Food Manufacturing Operations . 2.2. Food Packaging: General Characteristics and Types . 2.3. Food preservation
- Unit 3. Main Technological Processes in Food Groups and Influence on the nutritional value of food.. 3.1. Technological processes applied to food . 3.2. Influence of technological processes on the nutritional value of food

Year: <b>2nd</b>	Course code: <b>P988001208</b>	Course: <b>Applied pharmacology</b> ( <i>Farmacología Aplicada</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1: General concepts of pharmacology. 1.1: Basic concepts of drug mechanisms of action: pharmacokinetics and Pharmacodynamics. 1.2: Adverse Reactions: Definition, Classification, Identification . 1.3: Drug Interactions: Food-Drug Interactions, Drug Interactions Medication – Food
- Unit 2: Pharmacology applied to nutrition (1). 2.1: Gastrointestinal System Drugs: Vomiting, Diarrhea, Constipation. 2.2: Gastrointestinal System Drugs: Vomiting, Diarrhea, Constipation, Ulcer, Reflux (gastric secretions). 2.3: Drugs for metabolic disorders: Diabetes Mellitus, Dyslipidemias, Hyperuricemia, gout, calcium metabolism, thyroid hormones
- Unit 3: Pharmacology applied to nutrition (2). 3.1: Drugs in cardiovascular diseases: hypertension, heart failure, anticoagulants and antiplatelet agents. 3.2: Drugs in Obesity and Appetite Disorders: Weight Loss



Year: <b>2nd</b>	Course code: <b>P988001209</b>	Course: <b>Molecular Biology</b> ( <i>Biología Molecular</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1: Genetic Material . 1.1: Introduction to Molecular Biology . 1.2: Nucleic acids
- Unit 2: Processing Genetic Material. 1.3: DNA Replication and Repair . 1.4.1: The flow of genetic information. 1.4.2: Regulation of gene expression
- Unit 3: Nucleic Acid Analysis Techniques. 3.1: Obtaining DNA molecules. 3.2: Nucleic acid hybridization
- Unit 4: Recombinant DNA Technology. 4.1: Restriction vectors and enzymes. 4.2: Gene cloning
- Unit 5: Genomics and Proteomics. 5.1: Sequencing. Human Genome Project. 5.2: Protein purification and analysis
- Unit 6: Biomolecular Applications in Medicine. 6.1: Gene therapy. 6.2: Diagnostic techniques and production of new drugs
- Unit 7: Biomolecular Applications in Agri-Food Technology. 7.1: Genetically modified foods. 7.2: Nutrigenomics and nutrigenetics

Year: <b>2nd</b>	Course code: <b>P988001210</b>	Course: <b>Parasitology</b> ( <i>Parasitología</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1: Introduction to parasitology. 1.1: Overview of parasitology. 1.2: Food parasitology
- Unit 2: Protozoa and coccidia. 2.1: Intestinal protozoa. 2.2: Intestinal coccidia
- Unit 3: Helminths. 3.1: Trematodes. 3.2: Cestodes. 3.3: Nematodes

Year: <b>2nd</b>	Course code: <b>P988001211</b>	Course: <b>Pathophysiology</b> ( <i>Fisiopatología</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1.- General Pathophysiology. 1.1. Introduction to human pathophysiology and general concepts. 1.2. Pathophysiology of function, cell growth and defense systems. 1.3. Forms of Nonspecific Reaction to Aggression: Inflammation, Febrile and Response Syndrome to aggression.
- Unit 2.- Pathophysiology of the circulatory, respiratory, blood and hematopoietic organs. 2.1. Pathophysiology and general pathogenesis of the circulatory system. 2.2. Pathophysiology and general pathogenesis of the respiratory system. 2.3. Pathophysiology and general pathogenesis of blood and hematopoietic organs.
- Unit 3.- Pathophysiology of nutrition, metabolism and elimination.. 3.1. Pathophysiology and general pathogenesis of the digestive system, liver and bile ducts.. 3.2. Pathophysiology and general pathogenesis of metabolism, nutrition.. 3.3. Pathophysiology and general pathogenesis of the kidney and urinary tract.
- Unit 4.- Pathophysiology of the endocrine, nervous and musculoskeletal systems.. 4.1. Pathophysiology and general pathogenesis of the endocrine system. 4.2. Pathophysiology and general pathogenesis of the nervous system.. 4.3. Pathophysiology and general pathogenesis of the musculoskeletal system

<b>2</b>	<b>P988001212</b>	<b>Prácticum I</b>	<b>Semestre 1 / Fall Term (Sept -Jan)</b>		<b>Español</b>	<b>6</b>
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Year: <b>3rd</b>	Course code: <b>P988001301</b>	Course: <b>Basic Nutrition II</b> ( <i>Nutrición básica II</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1.- Nutrition and Health. Regulation of hunger and satiety. Thirst regulation.. 1.1.- Importance of nutrition in health. 1.2.- Regulation of hunger and thirst: biochemical and physiological bases
- Unit 2.- Evaluation of nutritional status in health and disease. Objective methods and Subjective. 2.1. Assessment of nutritional status: anthropometry and body composition. 2.2. Assessment of nutritional status: biochemical and immunological parameters

- Unit 3.- Nutritional balance. Nutritional recommendations. Recommended Intakes. 3.1.- Recommended intakes of energy and nutrients: concept and management. Tables in population In Spain. 3.2.- Dietary guidelines, recommendations and nutritional objectives.
- Unit 4.- Food Composition Tables. Utilization. 4.1.- Food composition tables: interpretation and management. 4.2.- Servings, frequency of consumption and food processing. 4.3.- Influence of food processing and nutrient utilization
- Unit 5.- Food surveys: prospective and retrospective methods. Food Groups. 5.1.- Dietary surveys used in the assessment of energy intake and nutrients (part I). 5.2: Food Surveys Part II: Individual Surveys. 5.3.- Food Groups
- Unit 6.- Nutritional Intervention. 6.1.- Dietary prescription and design of an individualized diet. 6.2.- Planning a personalized diet. Vegetarian diets

Year: <b>3rd</b>	Course code: <b>P988001302</b>	Course: <b>Legislation</b> ( <i>Legislación</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1.- Introduction to Food Law and Legislation. 1.1.- Introduction to Law. Sources of Law.. 1.2.- Introduction to Food Law.
- Unit 2.- Food Legislation. 2.1. International and European food legislation.. 2.2. Spanish food legislation.
- Unit 3.- Food Safety. 3.1.- Standardization, certification and accreditation bodies..3.2.- Concept of Food Security. Introduction to the HACCP system.

Year: <b>3rd</b>	Course code: <b>P988001303</b>	Course: <b>Bioethics</b> ( <i>Bioética</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit I.- Fundamentals of Bioethics . 1.1.- Introduction to ethics. History of Ethics and Its Principles 1.2.- Codes of ethics. Responsibilities of the healthcare professional. Codex Alimentarius.
- Unit 2.- Addressing Ethical Conflicts in Complex Health and Legal Situations . 2.1. Rights of the sick. Moral Deliberation and Decision-Making (Part I). 2.2. Analysis and approach to decision-making (part II). Rejection of the treatment
- Unit 3.- Basic Research. 3.1. Bioethics in research. 3.2. Bioethics in the Healthcare Clinic

Year: <b>3rd</b>	Course code: <b>P988001304</b>	Course: <b>Nutrition in the Stages of Life</b> ( <i>Nutrición en las etapas de la Vida</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1: Nutrition in early life. 1.1. Nutrition in the pre-gestational and gestational period.. 1.2: Nutrition during breastfeeding.. 1.3: Food introduction.
- Unit 2: Nutrition during development. 2.1: Infant and infancy nutrition.. 2.2: Nutrition in adolescence.
- Unit 3: Adult nutrition. 2.3: Nutrition in adults. Nutrition in women.. 2.4: Vegan and vegetarian diets. 2.5: Nutrition in the Elderly age

Year: <b>3rd</b>	Course code: <b>P988001305</b>	Course: <b>Dietetics</b> ( <i>Dietética</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1.- Introduction to dietetics. balanced diet. 1.1. History of dietetics, generalities, concepts and definitions.. 1.2. Balanced diet. Aspects and features
- Unit 2.- Mediterranean diet. functions of the dietitian nutritionist. 2.1. Mediterranean diet. The importance of dietary guidelines, nutritional pyramid. . 2.2. Functions of the dietitian nutritionist and dietary intervention.
- Unit 3.- Food surveys. 3.1. Food Surveys (Part I). 3.2. Food Surveys (Part II)
- Unit 4.- Dietary interventions. 4.1. Nutritional Care Process. 4.2. Diet design and scheduling for healthy individuals and individuals (diet by exchanges, subsistence allowances for equivalents). 4.3. Computer support
- Unit 5.- Different types of diets. subsistence allowance for equivalents. 5.1. Subsistence allowance (Part I). 5.2. Subsistence allowance (Part II)
- Unit 6. - Special diets, alternatives. 6.1. Different types of diet. 6.2. Special & Alternative Diets

Year: <b>3rd</b>	Course code: <b>P988001306</b>	Course: <b>Food Education</b> (Educación Alimentaria)	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course contents/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: Introduction to Food Education. 1.1. Objectives and functions of nutrition education.. 1.2. Healthy habits, nutritional needs and eating behavior.</li> <li>Unit 2: Nutrition Education Programs. 2.1. Types of food education strategies and programs. 2.2. Phases of a food education program.</li> <li>Unit 3: Areas of Nutrition Education. 3.1. Areas of nutrition education.. 3.2. News and perspectives in nutrition education.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>P988001307</b>	Course: <b>Diet Therapy</b> (Dietoterapia)	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b> <ul style="list-style-type: none"> <li>Unit 1: Role of diet in the prevention and treatment of disease. 1.1. Diet Therapy: Introduction and Basic Concepts.. 1.2. Diagnosis and intervention: Assessment of the patient's nutritional status</li> <li>Unit 2: Energy-Controlled Diets. 2.1. Overweight and obesity. 2.2. Eating disorders.. 2.3. Caloric malnutrition.</li> <li>Unit 3: Carbohydrate-controlled diets. 3.1. Diabetes mellitus. 3.2. Intolerance to fructose, lactose, galactose and sucrose.</li> <li>Unit 4: Protein-Controlled Diets. 4.1. Modification of protein intake.. 4.2. Allergies and intolerances: Celiac disease and cow's milk protein allergy.</li> <li>Unit 5: Lipid-Controlled Diets. 5.1. Dyslipidemia and cardiovascular disease.. 5.2. Intestinal malabsorption syndrome.</li> <li>Unit 6: Other Diets for Different Disorders. 6.1. Diets modified in vitamins, minerals, and fiber.. 6.2. Diet in cancer patients.. 6.3. Texture Modified Diets</li> </ul>						

Year: <b>3rd</b>	Course code: <b>P988001308</b>	Course: <b>Hygiene and Food Safety. HACCP</b> (Higiene y Seguridad Alimentaria. APPCC)	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course contents/Units:</b> <ul style="list-style-type: none"> <li>Unit 1.General Concepts of Food Hygiene. 1.1. Introduction to Food Hygiene and Safety. 1.2. Competent Bodies and Related Disciplines</li> <li>Unit 2. Chemical, biological, physical and other hazards of food. 2.1. Food Chemical Hazards. 2.2. Food Biological Hazards. 2.3. Physical Hazards of Food and Other Hazards</li> <li>Unit 3. Food crises and control systems. 3.1. Food Crises: Definitions, Types and Protocols for Action. 3.2. HACCP Guidelines and General Principles</li> </ul>						

Year: <b>3rd</b>	Course code: <b>P988001309</b>	Course: <b>Community Nutrition</b> (Nutrición Comunitaria)	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course contents/Units:</b> <ul style="list-style-type: none"> <li>Unit 1.- Introduction to Community Nutrition. 1.1.- Health, disease and its determinants. Community Health. 1.2.- Community nutrition. Definition and concepts.</li> <li>Unit 2.- Community Nutrition Methodology. 2.1. Community Nutrition Intervention Strategies. 2.2. Evaluation of nutritional status in populations. 2.3. Food Surveys in Community Nutrition</li> <li>Unit 3.- Design and Planning of Community Nutrition Programs. 3.1.- Design and planning (I): Identify the problem. Define the population. Pose Objectives.. 3.2.- Design and planning (II): Development and evaluation of the intervention.</li> <li>Unit 4.- Practical Applications in Community Nutrition (I). 4.1.- Interventions in childhood and adolescence. 4.2.- Interventions in adulthood and the elderly</li> <li>Unit 5.- Practical Applications in Community Nutrition (II). 5.1.- Interventions in special situations .- Community nutrition in development cooperation.</li> <li>Unit 6.- Advances in Community Nutrition. 6.1: Food policies. 6.2.- Challenges and future of community nutrition</li> </ul>						

Year: <b>3rd</b>	Course code: <b>P988001310</b>	Course: <b>Public Health and Epidemiology</b> ( <i>Salud Pública y Epidemiología</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1: Introduction to Public Health. 1.1. Health and social development. Areas of action in Public Health.. 1.2: Health Policies and Rights.
- Unit 2: Health Planning, Management and Evaluation. 2.1: Models of Health Systems. Health planning and programming. 2.2: Health Indicators Part I. 2.3: Health Indicators Part II: Demography and Health
- Unit 3: Health promotion and education method. Environmental Risks in Public Health. 3.1: Health promotion and health education. 3.2: Prevention and health promotion activities in childhood and adolescence and the adult. 3.3: Introduction to public health surveillance.. 3.4: Disease notification, surveillance and control. The basic system of the epidemiological surveillance.
- Unit 4: Epidemiology and Types of Studies. 4.1: Epidemiology and epidemiological method. Causality. 4.2: Frequency measures in epidemiology. Partnership and impact averages.
- Unit 5. 5.1: Descriptive observations. Analytical observational studies. 5.2: Experimental studies. Biases.
- Unit 6: Nutritional epidemiology. 6.1: Nutritional Epidemiology Part I. 6.2: Nutritional Epidemiology Part II.

Year: <b>3rd</b>	Course code: <b>P988001311</b>	Course: <b>Clinical Nutrition and Hospital Dietetics</b> ( <i>Nutrición Clínica y dietética hospitalaria</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course contents/Units:**

- Unit 1.- Introduction to Clinical Nutrition. 1.1.- Organization and structure of a Hospital Nutrition Unit. 1.2.- Assessment of nutritional status. Medical and dietary history. 1.3. Malnutrition, causes and classification. Hospital malnutrition, prevalence in Spanish hospitals, causes and consequences. Adaptation and modifications.
- Unit 2.- Diabetes and obesity. 2.1. Description and types of diabetes. Nutritional treatment in the patient Hospitalized.. 2.2. Description and types of diabetes. Nutritional treatment in the patient Hospitalized.. 2.3. Childhood and Adult Overweight and Obesity: Definition, Classification and Obesity treatment.
- Unit 3.- Pathology of the digestive system. 3.1.- Oral, esophageal and gastric pathologies.. 3.2.- Main intestinal pathologies. 3.3- Hepatobiliary and pancreatic pathologies
- Unit 4.- Food allergies and intolerances. 4.1.- Introduction. Types of food allergies and/or intolerances.. 4.2.- Management of patients with food allergies and intolerances in the field hospitable.
- Unit 5.- Oncological Nutrition. 5.1.- Diet in the prevention and risk factor of cancer. 5.2.- Main side effects of cancer and its treatment. 5.3.- Nutritional approach in cancer patients.
- Unit 6. Enteral and parenteral nutrition. 6.1.- Basic concepts. Indications and Differences Between Enteral and Enteral Nutrition parenteral. Algorithms for choosing the type of nutrition. 6.2.- Enteral nutrition: Objectives. Planning: Types and location of probes; Formulas and patient follow-up. 6.3: Parenteral nutrition: Objectives. Planning. Patient Follow-Up

Year: <b>3rd</b>	Course code: <b>P988001313</b>	<b>Sport Nutrition</b> ( <i>Nutrición en el deporte</i> )	Program: <b>Bachelor's Degree in Dietetic and Human Nutrition</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course contents/Units:**

- Unit 1. Biology of Physical Activity and Sport. 1.1. Introduction to nutrition in sport. Conceptual bases. Preliminary definitions. Historical background. Scientific milestones. 1.2. Theoretical principles of sports training. Physical Activity Recommendations in different stages of life. 1.3. Human bioenergetics and exercise. 1.4. Physiological responses and adaptations to exercise. 1.5. Body Composition Assessment
- Unit 2. Nutrition for Health, Fitness and Sport. 2.1. Introduction to athlete nutrition. 2.2. Carbohydrates and exercise. 2.3. Protein and exercise. 2.4. Fats and exercise. 2.5. Vitamins, minerals, antioxidants, and exercise. 2.6. Water and replacement drinks in sports. 2.7. Ergogenic aids in sport

4th year courses are yet to be included.

## Bachelor's Degree in Veterinary Medicine (*Grado en Veterinaria*) (Spanish)

Año	Código	Asignatura	Periodo	Idioma	ECTS
±	9839001101	Ciencias básicas I	Semestre 1 / Fall Term (Sept – Jan)	Español	6
±	9839001102	Ciencias básicas II	Semestre 2 / Spring Term (Jan – Jun)	Español	6
±	9839001103	Economía y empresa	Semestre 1 / Fall Term (Sept – Jan)	Español	6
±	9839001104	Historia y sociología veterinaria	Semestre 1 / Fall Term (Sept – Jan)	Español	6
±	9839001105	Estructura y función I	Semestre 1 / Fall Term (Sept – Jan)	Español	12
±	9839001106	Estructura y función II	Semestre 2 / Spring Term (Jan – Jun)	Español	12
±	9839001107	Agentes biológicos I	Semestre 2 / Spring Term (Jan – Jun)	Español	12
±	9839001108	Epidemiología y Bioestadística	Semestre 2 / Spring Term (Jan – Jun)	Español	6

Year:	Course code:	Course:	Program:	Term:	Teaching Language:	Cr:
2nd	9839001201	Structure and function III (Estructura y función III)	Bachelor's Degree in Veterinary Medicine	Semester 1	Spanish	12 ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. The Endocrine system. 1.1. location, structure and physiology of the organs that make up the endocrine system. 1.2. general principles of clinical enzymology and hormone regulation. 1.3. principles of signal transduction and the regulation of metabolic pathways. 1.4. enzyme systems and the biochemistry of hormones.</li> <li>Unit 2. The Digestive system . 2.1. organs of the digestive system and its appendages in the main domestic animal species: components, location, relationships, microscopic appearance and function.</li> <li>Unit 3. The Urinary system . 3.1. organs of the urinary system and its appendages in the main domestic animal species: components, location, relationships, microscopic appearance and function.</li> <li>Unit 4. The Reproductive system . 4.1. organs of the reproductive system and its appendages in the main domestic animal species: components, location, relationships, microscopic appearance and function.</li> <li>Unit 5. The Integumentary system . 5.1. histological, macroscopic and functional structure of skin and the main changes to it.</li> </ul>						

Year:	Course code:	Course:	Program:	Term:	Teaching Language:	Cr:
2nd	9839001202	Biological Agents II ( <i>Agentes biológicos II</i> )	Bachelor's Degree in Veterinary Medicine	Semester 1	Spanish	6 ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Mycology</li> <li>Unit 2. Parasitology</li> <li>Unit 3. Projects.</li> </ul>						

Year:	Course code:	Course:	Program:	Term:	Teaching Language:	Cr:
2nd	9839001203	Animal Welfare and Breeds ( <i>Bienestar animal y etnología</i> )	Bachelor's Degree in Veterinary Medicine	Semester 2	Spanish	6 ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. The Study of Animal Breeds and Their Classification. Introduction to Baron's Systematic Classification. Major Companion and Production Breeds.</li> <li>Unit 2. Animal Behaviour: General Concept and Scientific Study. Behavioural Management and Ontogeny. Domestication.</li> <li>Unit 3. Behavioural Systems and Patterns: Thermoregulation; Feeding; Grooming; Social, Sexual and Maternal Behaviour, according to Aptitude and Species.</li> <li>Unit 4. Introduction to Animal Welfare and its Relationship with Health and Behaviour. Assessment of Animal Welfare.</li> <li>Unit 5. Types of Abnormal Behaviour. Emotions, Pain and Stress.</li> </ul>						

- Unit 6. Welfare Issues According to Production Type and Behaviour
- Unit 7. Welfare in different cases. 7.1. Painful interventions. 7.2. Livestock markets. 7.3. Transit and slaughter. 7.4. Euthanasia. 7.5. Catastrophes and emergencies. 7.6. Zoo, circus and other kinds of performance animals
- Unit 8. Regulation of animal welfare for companion animals, livestock, animals in conservation and test animals

Year: <b>2nd</b>	Course code: <b>9839001204</b>	Course: <b>Foundations of Pharmacology and Therapeutics</b> ( <i>Bases farmacológicas y de la terapéutica</i> )	Program: <b>Bachelor's Degree in Veterinary Medicine</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>9 ECTS</b>
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**Course content/Units:**

- Unit 1. General Principles of Pharmacokinetics and Pharmacodynamics.
- Unit 2. Basic Outline of the Primary Drug Classes.
- Unit 3. Dosage Forms and Their Pharmacokinetic Applications.
- Unit 4. Mechanisms of Action.
- Unit 5. Pharmacological Effects.
- Unit 6. Therapeutic Applications.
- Unit 7. Toxic Effects of Administered Therapies.
- Unit 8. Introduction to Applied Toxicology.

Year: <b>2nd</b>	Course code: <b>9839001205</b>	Course: <b>Introduction to Clinical Veterinary Practice</b> ( <i>Introducción a la clínica veterinaria</i> )	Program: <b>Bachelor's Degree in Veterinary Medicine</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Methods and procedures of clinical examination by species. 2.1: Introduction and Terminology. 2.2: General Examination, Restraint and Sample Collection. 2.3: Workshop/Skin Examination. 2.4: Workshop/Eye and Ear Examination
- Unit 2. Foundations of Anaesthesia (Applied to the Handling and Examination of Animals). 2.1. Pre-anaesthetic Assessment and Risks. 2.2. Pre-medication and Anaesthetic Induction. 2.3. Analgesics and General Anaesthetic. 2.4. Airway Management and Monitoring. 2.5. Postoperative Recovery and Care.
- Unit 3. Foundations of Surgery. 3.1. Phases of Surgery. 3.2. Preoperative Cleansing and Preparation of the Surgical Site. 3.3. Surgical Equipment: Use and Maintenance. 3.4. Main Sutures. 3.5. Haemostasis in Surgery

Year: <b>2nd</b>	Course code: <b>9839001206</b>	Course: <b>Complementary Clinical Diagnosis I</b> ( <i>Diagnóstico clínico complementario I</i> )	Program: <b>Bachelor's Degree in Veterinary Medicine</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Diagnostic Imaging Techniques. 1.1. Clinical Radiology and Radiation Protection. Contrast Radiology and Fluoroscopy. 1.2. Clinical Ultrasound, Equipment Settings, and Different Applications. 1.3. Clinical Computed Axial Tomography and Different Applications. 1.4. Clinical Magnetic Resonance Imaging and Different Applications.
- Unit 2. Comparative Diagnostic Imaging by Region. 2.1. Skull and Neck: Anatomy Refresher and Diagnosis by X-ray. Application of X-ray and Ultrasound in the Diagnosis of Head and Neck Conditions. Application of CAT in the Diagnosis of Neurological and Non-Neurological Conditions of the Skull. Application of MRI vs CAT in the Diagnosis of Neurological and Non-Neurological Conditions of the Skull. 2.2. Thoracic Cavity: Anatomy Refresher and Diagnosis by X-ray. Application of X-ray in the Diagnosis of Cardiac Conditions. Introduction to Echocardiography. Application of Ultrasound in the Diagnosis of Conditions of the Thoracic Cavity. Application of CAT in the Diagnosis of Conditions of the Thoracic Cavity. 2.3. Abdominal Cavity: Anatomy Refresher and Diagnosis by X-ray. Application of X-ray and Ultrasound in the Diagnosis of Urinary Disorders. Application of Ultrasound in the Diagnosis of Digestive Disorders. Application of Ultrasound and X-Ray in the Diagnosis of Lymphatic and Liver Disease. Application of Ultrasound and X-Ray in the Diagnosis of Reproductive Disorders. Application of Ultrasound in the Diagnosis of Conditions of the Abdominal Cavity. 2.4. The Spine: Anatomy Refresher and Diagnosis via Various Techniques. 2.5. Forelimbs: Anatomy Refresher and Diagnosis by X-ray. Application of Ultrasound, CAT and MRI in the Diagnosis of Conditions of the Forelimb. 2.6.



Hindlimbs: Anatomy Refresher and Diagnosis by X-ray. Application of Ultrasound, CAT and MRI in the Diagnosis of Conditions of the Hindlimb.

- Unit 3. Correlation with the Major Clinical Laboratory Tests. 3.1. Haematology. 3.2. Cytology. 3.3. Clinical Biochemistry

Year: <b>2nd</b>	Course code: <b>9839001207</b>	Course: <b>Veterinary Pathophysiology</b> ( <i>Fisiopatología veterinaria</i> )	Program: <b>Bachelor's Degree in Veterinary Medicine</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>12 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"><li>• Unit 1. Introduction to Pathophysiology.</li><li>• Unit 2. Cardiovascular.</li><li>• Unit 3. Pulmonology.</li><li>• Unit 4. Nephrology and Urology.</li><li>• Unit 5. The Endocrine System and Nutritional Disorders.</li><li>• Unit 6. Haematology.</li><li>• Unit 7. The Digestive System.</li><li>• Unit 8. The Reproductive System</li><li>• Unit 9. The Nervous System.</li><li>• Unit 10. Dermatology and The Sense Organs.</li><li>• Unit 11. Immunology and Oncology.</li><li>• Unit 12. Toxicology</li></ul>						

Year: <b>2nd</b>	Course code: <b>9839001801</b>	Course: <b>Biodiversity and Conservation</b> ( <i>Biodiversidad y conservación</i> )	Program: <b>Bachelor's Degree in Veterinary Medicine</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"><li>• Unit 1. Introduction to biodiversity.</li><li>• Unit 2. Conservation.</li><li>• Unit 3. The veterinarian's role in conservation and biodiversity.</li></ul>						

Year: <b>2nd</b>	Course code: <b>9839001802</b>	Course: <b>Biotechnology Applied to Veterinary Medicine</b> ( <i>Biotecnología veterinaria aplicada</i> )	Program: <b>Bachelor's Degree in Veterinary Medicine</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"><li>• Unit 1. Diagnosis and prevention</li><li>• Unit 2. Animal welfare and testing</li><li>• Unit 3. Food technology</li><li>• Unit 4. Animal reproduction</li></ul>						

## School of Social Sciences and Communication (*Facultad de Ciencias Sociales y de la Comunicación*)

### Bachelor's Degree in Audiovisual Communication (*Grado en Comunicación Audiovisual*) (Spanish)

Year: 1st	Course code: <b>PARV001101</b>	<b>Personal and professional efficiency</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>English</b>	Cr: <b>6 ECTS</b>
Year: 1st	Course code: <b>9832001101</b>	<b>Personal and professional efficiency</b> <i>(Eficacia personal y profesional)</i>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Ethical approaches in the different spheres of professional activity.</li> <li>• Unit 2. Autonomous learning and self-regulation in personal life and professional practice.</li> <li>• Unit 3. Keys to organize and manage teamwork.</li> </ul>						

1	9832001102	Historia del cine	Semestre 2 / Spring Term (Jan – Jun)		Español	6
1	9832001103	Teoría de la comunicación	Semestre 2 / Spring Term (Jan – Jun)		Español	6
1	9832001104	Historia contemporánea universal	Semestre 1 / Fall Term (Sept – Jan)		Español	6
1	9832001105	Guion de ficción I	Semestre 2 / Spring Term (Jan – Jun)		Español	6
1	9832001106	Introducción a la Fotografía	Semestre 1 / Fall Term (Sept – Jan)		Español	6
1	9832001107	Narrativa audiovisual	Semestre 1 / Fall Term (Sept – Jan)		Español	6
1	9832001108	Tecnología audiovisual	Semestre 2 / Spring Term (Jan – Jun)		Español	6
1	9832001109	Sonido	Semestre 2 / Spring Term (Jan – Jun)		Español	6
1	9832001110	Estética	Semestre 1 / Fall Term (Sept – Jan)		Español	6
1	9832001111	Introducción al diseño gráfico	Semestre 1 / Fall Term (Sept – Jan)		Español	3
2	9832001201	Fundamentos de la Animación y videojuegos	Semestre 1 / Fall Term (Sept – Jan)		Español	6
2	9832001202	Influencia e impacto personal	Semestre 2 / Spring Term (Jan – Jun)		Español	6
2	9832001203	Legislación especializada	Semestre 1 / Fall Term (Sept – Jan)		Español	3

Year: <b>2nd</b>	Course code: <b>9832001204</b>	Course: <b>Film Analysis (<i>Análisis cinematográfico</i>)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Film analysis in the process comprehension of the film.
- Unit 2. Semiotic Components of Cinema narrative.
- Unit 3. Message Interpretation From the analysis of the visual code
- Unit 4. Analysis of the staging and Stylistic variety
- Unit 5. Textual Analysis Practice

Year: <b>2nd</b>	Course code: <b>9832001205</b>	Course: <b>Hystory of media</b> ( <i>Historia de los medios</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The epidemic in show Culture. The state of the world (politics-economy-culture). The audiovisual (in)civilization. 1.1. The evolution of information in the media. 1.2. Postcultures, countercultures and other civilisations of the spectacle. 1.3. Activity: 24 hours with the candidate
- Unit 2. The Culture Industry. 2.1. CI: Impact of technology. 2.2. CI: Labour market. 2.3. CI: Market for cultural products and goods. 2.4. Activity: Mutations of Contemporary Cinema (Rosembaum, 2011) Streaming Wars (Neira, 2020)
- Unit 3. Audiovisual consumption. Television cultural consumption. 3.1. Platforms and content. 3.2. The phenomenon of series
- Unit 4. TV & Radio: From Yesterday to Today
- Unit 5. Film and photography

Year: <b>2nd</b>	Course code: <b>9832001206</b>	Course: <b>Documentary Workshop</b> ( <i>Taller de documentales</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. What is the documentary?
- Unit 2. The first documentaries. Narrative documentary.
- Unit 3. Types of Documentaries
- Unit 4. The documentary as a social judgment.

Year: <b>2nd</b>	Course code: <b>9832001207</b>	Course: <b>Radio Production and Direction</b> ( <i>Producción y realización en radio</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Knowledge of the basic technology and use of broadcasting systems
- Unit 2: Sound Production and Direction
- Unit 3: Programme and broadcast design and typologies
- Unit 4: Basic structures
- Unit 5: Radio programming

Year: <b>2nd</b>	Course code: <b>9832001208</b>	Course: <b>Communication Groups and Audiovisual Company</b> ( <i>Grupos de comunicación y empresa audiovisual</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: The history of communication groups
- Unit 2: National Context. Analysis of the different groups
- Unit 3: Analysis of national news. Press and radio.
- Unit 4: Intentional context. Analysis of the different groups
- Unit 5: Analysis of International news. Press and radio.
- Unit 6: Analysis of New Media. Impact on different groups.

Year: <b>2nd</b>	Course code: <b>9832001209</b>	Course: <b>Editing I (Montaje I)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Audiovisual Language
- Unit 2. Non-linear editing tools. Libraries. Material import.
- Unit 3. Editing fundamental tools
- Unit 4. Transitions
- Unit 5. Corrections, Compositing, Effects, and Animation
- Unit 6. Project design. Material Management and Classification
- Unit 7. Color correction
- Unit 8. Advanced Editing: Fine-Tuning the Editing
- Unit 9. Audio editing

Year: <b>2nd</b>	Course code: <b>9832001210</b>	Course: <b>Cinematography and Lighting (Dirección de fotografía e Iluminación)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Understanding the Light
- Unit 2. Collection equipment
- Unit 3 . Artificial and natural lighting
- Unit 4. Content Creation

Year: <b>2nd</b>	Course code: <b>9832001211</b>	Course: <b>Audiovisual Production (Producción audiovisual)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to audiovisual production
- Unit 2. Product conception
- Unit 3. The production's financial environment
- Unit 4. The production stages
- Unit 5. Production products and processes

Year: <b>3rd</b>	Course code: <b>9832001301</b>	Course: <b>Social Research Methodology (Metodología de la investigación social)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1 – Introduction to the research process.
- Unit 2 - Research project.
- Unit 3 – Critical review of the literature.
- Unit 4 – Scientific writing.
- Unit 5 – Research design and methodology.
- Unit 6 - Quantitative research techniques.
- Unit 7 - Qualitative research techniques.

Year: <b>3rd</b>	Course code: <b>9832001302</b>	Course: <b>Music for Audiovisual (Música para audiovisuales)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Approaching Music for Audiovisuals
- Unit 2. History and Evolution of Music for Audiovisual Media. 2.1 Early life and silent films. 2.2 The Beginning of Sound Cinema and the Era of Hollywood Studios. 2.3 The 1940s and 1950s. 2.4 From the 1960s to the present

- Unit 3. The process of composing music for Audiovisual Media
- Unit 4. The production process of music for Audiovisual Media
- Unit 5. The music management environment applied to Audiovisual Media. 5.1 Synchronizing Music in the Movie. 5.2 Intellectual property. 5.3 Managing the work of film composers

Year: <b>3rd</b>	Course code: <b>9832001303</b>	Course: <b>Video Post-Production</b> ( <i>Postproducción de vídeo</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Introduction to the post-production or final stage of video editing. 1.1. Post-production definition and processes. 1.2. The importance of post-production: Fiction, Advertising, Videoclips, Infotainment
- Unit 2: Correct use of tools or specialised software in audiovisual post-production. 2.1. Types of editing and post-production software (key). 2.2. Types of Colour Grading Software. 2.3. Types of graphics software. 2.4. Final audio and video mixing.
- Unit 3: Digital colour grading, colour correction and image enhancement techniques. 3.1. Colour psychology. 3.2. The use of colour in fiction. 3.3. The use of colour in video clips. 3.4. The use of colour in advertising and infotainment.
- Unit 4: Most commonly used transitions and effects in non-linear editing. 4.1. Integration of graphics in video compositions. 4.2. The importance of font. 4.3. The narrative of transitions and effects.

Year: <b>3rd</b>	Course code: <b>9832001304</b>	Course: <b>Sound Design</b> ( <i>Diseño de sonido</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Direct Sound in Cinematic Environments. 1.1 Direct sound systems applied to cinema. 1.2 Sound elements needed in sound design. 1.3 Sound design concept in the filming phase. 1.4 The Wildtracks of sound
- Unit 2. The Image Montage. 2.1 INN Standards for Imaging. 2.2 Multi-channel sequencing for broadcast. 2.3 AAF/OMF Audio Export Protocol. 2.4 OMF Import Protocol
- Unit 3. Sound Design. 3.1 Integration of OMF/AFF protocols. 3.2 Coil synchronization. 3.3 Analysis of sound stems. 3.4 The audiovisual premix
- Unit 4. Sound mixing and mastering. 4.1 Multi-channel sound reproduction systems. 4.2 Dynamics and equalization processes. 4.3 Sound arrangement of losstems. 4.4 Dolby Atmos

Year: <b>3rd</b>	Course code: <b>9832001305</b>	Course: <b>Editing II</b> ( <i>Montaje II</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 Cinema, rhythm and editing.
- Unit 2 Theories of Montage: The Soviet School
- Unit 3 Theories of Montage
- Unit 4 Sound editing
- Unit 5. Genres 1
- Unit 6 Genres 2
- Unit 7 The relationship with the director

Year: <b>3rd</b>	Course code: <b>9832001306</b>	Course: <b>Audiovisual Marketing and Distribution</b> ( <i>Comercialización y distribución audiovisual</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. National and international TV distribution: Audiences and format trading
- Unit 2. Film marketing. Distribution and exhibition in cinemas
- Unit 3. Festivals, markets and audiovisual marketing
- Unit 4. The new distribution channels: Success stories
- Unit 5. Advanced negotiation techniques: The Pitch

Year: <b>3rd</b>	Course code: <b>9832001307</b>	Course: <b>Specialised Photography</b> ( <i>Fotografía especializada</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The photographic laboratory.
- Unit 2. The photographic tool.
- Unit 3. Production of photographic image creation and processing.
- Unit 4. Colour management.
- Unit 5. Systematic work, work organisation and storage.
- Unit 6. The photography team.
- Unit 7. Creative landscape.

Year: <b>3rd</b>	Course code: <b>9832001308</b>	Course: <b>Television Production</b> ( <i>Realización en Televisión</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Production, definitions, terminology and audiovisual language
- Unit 2. Pre-production
- Unit 3. Production.
- Unit 4. Live production and post-production
- Unit 5. Workshop: Making a multi-camera programme

Year: <b>3rd</b>	Course code: <b>9832001309</b>	Course: <b>Film Direction</b> ( <i>Dirección cine</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Film Direction: Basic concepts.
- Unit 2. Directing teams in film and fiction series.
- Unit 3. The relationship between the film director and the photography director.
- Unit 4. The relationship between the film director and the executive producer.
- Unit 5. The relationship between the film director and the production designer.
- Unit 6. Pre-production, production and post-production process of a film.
- Unit 7. Direction of actors: Staging and reliable methods.
- Unit 8. The film director's vision: Narration from different perspectives.
- Unit 9. Characteristics of great film directors: Coppola, Spielberg, Wong Kar Wai, Almodóvar, Terrence Malick, Clint Eastwood, Billy Wilder, Fellini and Luis Buñuel.
- Unit 10. Film genres and styles.
- Unit 11. Film direction over time.
- Unit 13. Analysis of independent film directors' visual style.
- Unit 14. Literary script creation techniques for film: The author is the scriptwriter or the director?
- Unit 15. Film presentation and distribution: Study of the main festivals.
- Unit 16. Financing of a film: European System vs American System.
- Unit 17. Aesthetics, tone, universe and references of a film.
- Unit 18. The film director and narrative structures.
- Unit 19. Independent vs. Commercial cinema: Which is more interesting from the point of view of film direction?
- Unit 20. Film production process: What is it really like to make a film?

Year: <b>4th</b>	Course code: <b>9832001402</b>	Course: <b>Entrepreneurial leadership</b> ( <i>Liderazgo emprendedor</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Management skills and constant change. 1.1. Flexibility, adaptation and resilience. 1.2. Decision-making. 1.3. Change management. 1.4. Time management. 1.5. Knowledge management.
- Unit 2. Effective Communication vs. Emotional Communication. 2.1. How to communicate in the business environment.. 2.2. Emotional intelligence. 2.3. Persuasive communication. 2.4. Verbal communication. 2.5. Non-verbal communication.
- Unit 3. From the figure of the leader to the competence of leadership. 3.1. Introduction to leadership. 3.2. Fundamentals of leadership. 3.3. Intergenerational leadership. 3.4. Teamwork.
- Unit 4. Entrepreneurship & Leadership. 4.1. Proactive versus reactive.. 4.2. Laws of entrepreneurship. 4.3. Social entrepreneurship. 4.4. Personal branding.
- Unit 5. The Complexity of Global Society. 5.1. Global complexity in organizations. 5.2. Diversity management. 5.3. Conflict management and negotiation. 5.4. Management and ethics.

Year: <b>4th</b>	Course code: <b>9832001404</b>	Course: <b>3D Animation (Animación 3D)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Analysis of the sector, professional profiles.
- Unit 2.- Animation. 2.1. Keyframe animation. 2.2. Hierarchy by links. 2.3. Hierarchy by bones
- Unit 3.- Special Effects. 3.1. Fabrics. 3.2.- Hair. 3.3. Explosions.
- Unit 4.- Backgrounds, rendering and integration into the scene. 4.1.- HDRI Backgrounds. 4.2. Video as background.. 4.3. Render
- Unit 5.- Project. 5.1.- Realization of a 3D project from scratch. Reference image search, Creation of the 3D elements, problem solving, etc.

Year: <b>4th</b>	Course code: <b>9832001405</b>	Course: <b>Audiovisual Integration Workshop (Taller de integración audiovisual)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Meetings and visits in the film-cultural offer in madrid and surroundings.
- Unit 2. Practice elaboration

Year: <b>4th</b>	Course code: <b>9832001407</b>	Course: <b>Voice-over and dubbing (Locución y doblaje)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Breathing. Theory and practice.
- Unit 2. The resonator and articulatory apparatus.
- Unit 3. Intensity, pitch and timbre. Duration.
- Unit 4. Diction and pronunciation.
- Unit 5. Phonosthetic expression.
- Unit 6. Alexander Technique Applied to the Vocal Apparatus

Year: <b>4th</b>	Course code: <b>9832001408</b>	Course: <b>Motion Graphics</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1: Foundations of motion graphic design. 1.1. Foundations of graphic design . 1.2. Precedents and history of Motion Graphics. 1.3. Current uses of Motion Graphics
- Unit 2: Use of colour and fonts. 2.1. Colour (general concepts). 2.2. Fonts and kinetic typography
- Unit 3: Specialised tools for Motion Graphics. 3.1. Animation: rotoscoping, stop motion, traditional.. 3.2. 2D digital animation in after effects. 3.3. 3D Animation

Year: <b>4th</b>	Course code: <b>9832001801</b>	Course: <b>Short Film Workshop</b> ( <i>Taller de cortometrajes</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Fiction

**Course content/Units:**

- Unit 1. Idea, storyline and synopsis
- Unit 2. Outline
- Unit 3. Script writing
- Unit 4. Finalisation of the script and start of the technical script
- Unit 5. Storyboard and related narratives
- Unit 6. Recording
- Unit 7. Post-production

Year: <b>4th</b>	Course code: <b>9832001802</b>	Course: <b>TV series workshop</b> ( <i>Taller de series</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Fiction

**Course content/Units:**

- Unit 1: The series from two points of view: executive producer and creator.
- Unit 2: VOD platforms and content strategies.
- Unit 3: Creation of a dossier and sales document.
- Unit 4: Series production (filming process).
- Unit 5: Analysis of the characteristics of a series: series viewing.
- Unit 6: Advanced terminology.
- Unit 7: Analysis of cinematography, art direction and musical aspects.
- Unit 8: Reflection: Master Classes Taught by Professionals from Around the World

Year: <b>3rd</b>	Course code: <b>9832001803</b>	Course: <b>Special Effects</b> ( <i>Efectos especiales</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Fiction

**Course content/Units:**

- Unit 1: History of special effects. 1.1. The North American industry. 1.2. The arrival of special effects in Spanish cinema and television
- Unit 2: The industry's current events. 2.1. Companies in the special effects sector. 2.2. Creation process and development of effects. 2.3. The digital age.
- Unit 3: Analogue special effects, creation techniques and types. 3.1. Analogue effects. 3.2. Illusory effects and Gestalt theory. 3.3. Make-up
- Unit 4: Creation of digital effects. After Effects. 4.1. The headers or titles and credits. 4.2. The most commonly used special effects, explosions and gunshots. 4.3. Science fiction and adventures, analysis and creation of the most frequently used effects in this type of cinema.

Year: <b>3rd</b>	Course code: <b>9832001804</b>	Course: <b>Direction of Actors</b> ( <i>Dirección de actores</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Fiction

**Course content/Units:**

- Unit 1. Introduction to acting
- Unit 2. Historiography : stanislavski's system
- Unit 3. Actors studio methodology
- Unit 4. Types of acting (dubbing)
- Unit 5. Anatomical and diction techniques
- Unit 6. Transversal axes of the direction of actors
- Unit 7. Key tips before directing

Year: <b>4th</b>	Course code: <b>9832001805</b>	Course: <b>Fiction screenplay II (Guión de ficción II)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Fiction

**Course content/Units:**

- Unit 1. Series analysis
- Unit 2. Generation of ideas, guides and series screenplays.
- Unit 3. Production strategies.
- Unit 4. Distribution strategies.

Year: <b>3rd</b>	Course code: <b>9832001807</b>	Course: <b>Branded content (Identidad corporativa)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of New Media

**Course content/Units:**

- Unit 1. Strategic contextualisation of a brand's visual identity.
- Unit 2. Conceptualisation and design of a brand's basic elements.
- Unit 3. Visual representation and naming strategies.
- Unit 4. Framework of a professional visual identity guide.
- Unit 5. Design and production of offline applications.
- Unit 6. Design and production of online applications.

Year: <b>4th</b>	Course code: <b>9832001810</b>	Course: <b>Transmedia narration (Narrativa Transmedia)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Fiction

**Course content/Units:**

- Unit 1: The origin of storytelling and the essence of the human being. 3.3 Town criers, poets and theatrical traditions.. 3.3 The power of the storytelling and economic, political, social and commercial powers.
- Unit 2: Origin and rise of the term 'Storytelling'. 2.1. Technology and hyperconnectivity. 2.2. Narrative discourses. Cinema, visual arts, television, poetry, music, religion, politics, etc.
- Unit 3: Advertising, narration and emotions. 3.1.Narration and products. Emotional involvement. 3.2. The era of storytelling. Features. 3.3 Consumer Insights. 3.3 The advertising case study. Narration for "storytellers"
- Unit 4: Transmedia Storytelling. 4.1 Narration and different languages.

Year: <b>3rd</b>	Course code: <b>9832001811</b>	Course: <b>Gamification (Gamificación)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of New Media

**Course content/Units:**

- Unit 1. Introduction to the game
- Unit 2. Historical Evolution: Homo Ludens
- Unit 3. Play & Learning
- Unit 4. Players, motivation and participation
- Unit 5. Badges & Awards
- Unit 6: Gamification and Marketing: New Trends in Gamification

Year: <b>4th</b>	Course code: <b>9832001812</b>	Course: <b>Multi-Platform Audiovisual Production (Producción audiovisual multiplataforma)</b>	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of New Media

**Course content/Units:**

- Unit 1. Fundamentals of audiovisual production
- Unit 1. Introduction to transmedia production
- Unit 2. The conception of the transmedia product
- Unit 1. Multi-platform distribution environment
- Unit 1. Technical adaptation of content on new vod (video on demand) platforms
- Unit 1. Analysis of current case studies

Year: <b>4th</b>	Course code: <b>9832001813</b>	Course: <b>New Trends in Television</b> ( <i>Nuevas tendencias en televisión</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Broadcast

**Course content/Units:**

- Unit 1. Foundations of the television paradigm shift. 1.1. Spectator alienation and edutainment. 1.2. Social television and the effect of multiple screens. 1.3. On-demand TV vs Linear TV.
- Unit 2. Research in the television environment. 2.1. Research of linear TV and social media audiences.. 2.2. The magic of convincing the viewer. 2.3. Audiovisual persuasion
- Unit 3. Innovation in television production. 3.1. Current Trends and Trends in Television. 3.2. Technological advances in television. 3.3. Television creativity and creation of television products.

Year: <b>3rd</b>	Course code: <b>9832001814</b>	Course: <b>Entertainment Formats</b> ( <i>Formatos de entretenimiento</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Broadcast

**Course content/Units:**

- Unit 1: Introduction to television formats
- Unit 2: Classification of television formats
- Unit 3: Creation, development, execution and distribution of television formats
- Unit 4: A study of the latest successful formats produced at an international level

Year: <b>4th</b>	Course code: <b>9832001815</b>	Course: <b>Broadcasting of events on TV</b> ( <i>Retransmisiones de eventos en televisión</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Broadcast

**Course content/Units:**

- Unit 1. Digital Video Signal Acquisition
- Uni 2. Digitization of the TV signal
- Uni 3. Measurement and quality control
- Unit 4. Digital coding and modulations of the TV signal
- Unit 5. Transmission and reception of the TV signal
- Unit 6 Mobile Broadcast Units for Retransmissions
- Unit 7. Case Study. Broadcasts of sporting events: UEFA Europa League operational

Year: <b>3rd</b>	Course code: <b>9832001816</b>	Course: <b>Advanced Audiovisual Technology</b> ( <i>Tecnología audiovisual avanzada</i> )	Program: <b>Bachelor's Degree in Audiovisual Communication</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of New Media

**Course content/Units:**

- Unit 1. UHD digital image
- Unit 2. Cinematic image capture and recording
- Unit 2. Coding, container formats
- Unit 4. 4k and 8k uhd digital cinema
- Unit 5. Sstreaming



- Unit 6. Post-production and mastering products and processes

## Bachelor's Degree in Criminology (*Grado en Criminología*) (Spanish)

Year: <b>1st</b>	Course code: <b>9977001101</b>	Course: <b>Communication skills (<i>Habilidades Comunicativas</i>)</b>	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Interpersonal skills. 1.1. What are social skills? 1.2. Active listening and empathy. 1.3. Feedback. 1.4. Assertiveness.
- Unit 2. Oral communication. 2.1. What is oral communication?. 2.2. Verbal communication. 2.3. Non-verbal and emotional communication. 2.4. How to communicate in: interviews, meetings, interpersonal communication, etc.?
- Unit 3. Written communication. 3.1. Preparation of a written document. 3.2. Preparation of internal and external corporate documents. 3.3. Summarize, synthesize, and more. 3.4. PowerPoint.
- Unit 4. Argue and convince. 4.1. Types of argumentation. 4.2. Persuasive and direct communication. 4.3. Negotiation. 4.4. Delegation.
- Unit 5. Workshop on communication in special situations. 5.1. Emotional intelligence.

1	9977001102	Introducción al Derecho	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9977001103	Introducción a la Psicología	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9977001104	Introducción a la Sociología	Semestre 2 / Spring Term (Jan–Jun)		Español	6

Year: <b>1st</b>	Course code: <b>9977001106</b>	Course: <b>Ethics and professional Deontology (<i>Ética y Deontología Profesional</i>)</b>	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1: Introduction to the Study of Ethics
- Unit 2: A Brief History of Ethics
- Unit 3: Professional ethics and deontology.
- Unit 4: Professional Ethics and Criminology I.
- Unit 5: Professional Deontology and Criminology II.
- Unit 6: Professional Ethics and Criminology, Normative Perspectives and Challenges

1	9977001107	Derechos Fundamentales y Libertades Públicas	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9977001108	Biología	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9977001109	Introducción a la Criminología	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9977001110	Antropología	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9977001111	Técnicas de Investigación Cuantitativa y Cualitativa en Criminología	Semestre 2 / Spring Term (Jan–Jun)		Español	6

Year: <b>2nd</b>	Course code: <b>9977001201</b>	Course: <b>Sociology of Deviance (<i>Sociología de la Desviación</i>)</b>	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Deviance, social control and crime. 1.1. Order. Deviance and systems of social control. 1.2. Theories of Deviation I. 1.3. Theories of Deviance II. 1.4. The Concept of Crime and Its Models of Analysis
- Unit 2. Deviant Subcultures I. 2.1. Urban Tribes. 2.2. Digital Tribes. 2.3. Drug addicts. 2.4. Addictions in Cyberspace
- Unit 3. Deviant Subcultures II. 3.1. Religions. 3.2. Sects. 3.3. Sex Work. 3.4. Homeless people
- Unit 4. Gender and sexuality. 4.1. Gender Identities. 4.2. Gender-based violence. 4.3. Pornograph. 4.4. Paraphilias
- Unit 5. Violence against the state. Values and Victimization. 5.1. Traditional or old-fashioned terrorism. 5.2. Terrorism of the new kind or Jihadist. 5.3. Values and victimization

Year: <b>2nd</b>	Course code: <b>9977001203</b>	Course: <b>Criminal Phenomenology and Comparative Criminology</b> ( <i>Fenomenología Criminal y Criminología Comparada</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Criminal Phenomenology and Comparative Criminology. 1.1. Criminal phenomenology. 1.2. Comparative Criminology. 1.3. Sources in the study of criminality in Spain.
- Unit 2. Cybercrime and Cyber Diversion. 2.1. Technology and social transformation. 2.2. Forms and manifestations of cybercrime. 2.3. The explanation of cybercrime and cyber deviance from criminology. 2.4. Prevention of cybercrime at national and international level.
- Unit 3. Drugs, alcohol, nightlife and crime. 3.1. Drugs, alcohol, and delinquency. 3.2. The Economy of Nightlife and Crime. 3.3. Crime prevention in nightlife.
- Unit 4. Crime in the world. 4.1. Crime in Europe I. 4.2. Crime in Europe II. 4.3. Crime in Latin America. 4.4. Crime in North America.
- Unit 5. Other manifestations of delinquency. 5.1. Cultural Criminology. 5.2. Media and crime. 5.3. Juvenile delinquency. 5.4. Green Criminology. 5.5. Bullying. 5.6. Coercive groups
- Unit 6. So-called hate crimes. 6.1. The so-called hate crimes I. 6.2. The so-called hate crimes II. 6.3. Aporophobia.

<b>2</b>	<b>9977001204</b>	<b>Metodología de la Investigación Científica</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>
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Year: <b>2nd</b>	Course code: <b>9977001205</b>	Course: <b>Public and Private Security Policies</b> ( <i>Políticas de Seguridad Pública y Privada</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Safety Regulations. 1.1. Citizen security in the Spanish Constitution. 1.2. The Organic Laws on Security Forces and Corps and the Protection of Citizen Security. 1.3. Other national regulations: private security and civil protection laws. 1.4. Regulatory principles on Occupational Risk legislation.
- Unit 2. Security Concept & Policies. 2.1. State and security. 2.2- The Security sector. 2.3. Security policies: the concept of Policing. 2.4. Privatization of security. PMSCs.
- Unit 3. Police prevention of crime. 3.1. Primary prevention. 3.2. Secondary prevention. 3.3. Problem Oriented Policing (POP). 3.4. The Broken Windows Policy.
- Unit 4.- Fundamentals of Police Operations. 4.1. Patrols, Stops, and Searches. 4.2. Community Policing. 4.3. Crowd control. 4.4. Armed incidents with multiple casualties.
- Unit 5.- Fundamentals of Private Security. 5.1. The Department and the Chief Security Officer 5.2. Risk analysis. 5.3. Risk Analysis Methods. 5.4. Security systems
- Unit 6. Private security tools. 6.1. The Security Plan. 6.2. Crisis management. 6.3. Contingency, Emergency and Continuity Plans. 6.4. Reports and Audits.

Year: <b>2nd</b>	Course code: <b>9977001206</b>	Course: <b>Criminal Policy</b> ( <i>Política Criminal</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The concept of Criminal Policy. Doctrinal-theoretical vision.
- Unit 2. Object and method of Criminal Policy. Identifying Notes on Criminal Policy. Their relationship with Criminology and Legal-Penal Dogmatics.
- Unit 3. A Brief History of Modern Criminal Policy.
- Unit 4. The ways in which criminal policy is implemented: Crime prevention and treatment.
- Unit 5. Main operational models of prevention.

- Unit 6. The so-called Community Prevention. The Preventive Situational Model. The Role of the Police in the various Crime Preventions. The necessary coordination between the Prevention of Crime in the sense of empirical behavioral sciences and the justice system (Treatment of Crime).
- Unit 7. Practical or Operational Criminal Policy: Its connection to General Criminal Policy. Participation in professional laboratories and in university chairs. Recognition: according to duration of commitment.

Year: <b>2nd</b>	Course code: <b>9977001207</b>	Course: <b>Criminal Psychology (Psicología Criminal)</b>	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Criminal Psychology. 1.1. What is Criminal Psychology? 1.2. General Theories of Criminal Behavior. 1.3. Origin of Criminal Behavior: Psychological Factors.
- Unit 2. Criminal Psychopathology. 2.1. Definition and diagnosis of psychopathology. 2.2. Personality disorders. 2.3. Paraphilias and paraphilic disorder. 2.4. Drugs and alcohol.
- Unit 3. Obtaining information on criminal acts. 3.1. Cognitive interviewing with victims. 3.2. Cognitive interviewing with witnesses. 3.3. Cognitive interviewing with suspects. 3.4. Memory and Lies
- Unit 4. Psychological Techniques Applied to Criminal Investigation. 4.1. Forensic hypnosis. 4.2. Forensic polygraphy. 4.3. Psychological autopsy. 4.4. Risk indicators.
- Unit 5. Criminal Phenomenology. 5.1. Coercive groups: sects. 5.2. Serial crime. 5.3. Gender-based violence and domestic violence.. 5.4. Juvenile delinquency.
- Unit 6. Final work

Year: <b>2nd</b>	Course code: <b>9977001208</b>	Course: <b>Specific Areas and types of Criminality (Áreas y Formas Específicas de Criminalidad)</b>	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Violent criminality I. 1.1. Concept of violent criminality. 1.2. The Mass Killers. 1.3. Sex offenders.
- Unit 2. Violent criminality II. 2.1. Arsonists and arsonists. 2.2. The kidnapers. 2.3. The poisoners. 2.4. Crimes of superstition
- Unit 3. Organized crime. 3.1. Concept of organized crime and its characteristics. 3.2. Differences between organized crime and other types of crime. 3.3. Classic Criminal Organizations. 3.4. Organized Crime Businesses
- Unit 4. Socio-economic crimes. 4.1. Socio-economic crimes. 4.2. The profile of the socio-economic criminal. 4.3. Theoretical explanations for this delinquency.
- Unit 5 Domestic violence. 5.1. Domestic violence. 5.2. Philosophical violence. 5.3. Intimate partner violence. 5.4. Violence against children. 5.5. The Filicides
- Unit 6. Hate crimes. 6.1. Hate Crimes

Year: <b>2nd</b>	Course code: <b>9977001209</b>	Course: <b>General Principles of Crime and Punishment (Principios Generales del Delito y las Penas)</b>	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The Science of Criminal Law. 1.1. Objective criminal law. 1.2. Subjective criminal law. 1.3. The criminal law norm. 1.4. The Principle of Legality and the Sources of Criminal Law
- Unit 2. Consequences of the principle of legality in criminal law. 2.1. Interpretation of criminal law. 2.2. The Temporal Scope of Criminal Law. 2.3. The Spatial Scope of Criminal Law. 2.4. International criminal cooperation
- Unit 3. Theory of Crime I. 3.1. Action as the first element of the crime. 3.2. Typicality. Objective Elements of Action Types. 3.3. Typicality. Objective Elements of Bypass Types. 3.4. Typicality. Subjective elements of the type: intent and recklessness
- Unit 4. Theory of Crime II. 4.1. Illegality. 4.2. Guilt I. 4.3. Guilt II. 4.4. Punishability
- Unit 5. Theory of Crime III. 5.1. The so-called iter criminis. 5.2. Authorship and participation. 5.3. Concurrence of Offences and Concurrence of Laws. 5.4. Circumstances modifying liability
- Unit 6. The Legal Consequences of the Crime. 6.1. Penalties and Their Types. 6.2. Determination and specification of the penalty. 6.3. Enforcement of custodial sentences and their alternatives

Year: <b>2nd</b>	Course code: <b>9977001210</b>	Course:	Program:	Term: <b>Semester 2</b>	Teaching Language:	Cr:
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		<b>Forensic and Legal Medicine</b> ( <i>Medicina Legal y Forense</i> )	<b>Bachelor's Degree in Criminology</b>		<b>Spanish</b>	<b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Introduction to forensic medicine.</li> <li>• Unit 2: The doctor as an expert.</li> <li>• Unit 3: Diagnosis of death, natural death and suspected criminality.</li> <li>• Unit 4: Fundamentals of Judicial Autopsy.</li> <li>• Unit 5: Medico-legal documents.</li> <li>• Unit 6: The expert medical report.</li> <li>• Unit 7: Bruises.</li> <li>• Unit 8: Sudden Death</li> <li>• Unit 9: Mechanical asphyxia.</li> <li>• Unit 10: Death by submersion.</li> <li>• Unit 11: Offence of injury.</li> <li>• Unit 12: Firearm Injuries.</li> <li>• Unit 13: Stab wounds.</li> <li>• Unit 14: Electrical Injuries.</li> <li>• Unit 15: Concept of bodily injury.</li> <li>• Unit 16: Forensic Biology.</li> <li>• Unit 17: Occupational medicine.</li> <li>• Unit 18: Removal of the corpse.</li> <li>• Unit 19: Violence and abuse.</li> <li>• Unit 20: Forensic toxicology.</li> <li>• Unit 21: Offences against sexual freedom.</li> <li>• Unit 22: Disaster response.</li> <li>• Unit 23: Study of Human Anatomy</li> </ul>						

<b>Year:</b> <b>3rd</b>	<b>Course code:</b> <b>9977001301</b>	<b>Course:</b> <b>Forensic Psychiatry</b> ( <i>Psiquiatría Forense</i> )	<b>Program:</b> <b>Bachelor's Degree in Criminology</b>	<b>Term:</b> <b>Semester 1</b>	<b>Teaching Language:</b> <b>Spanish</b>	<b>Cr:</b> <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Forensic Psychiatry. 1.1. Concept and history of forensic psychiatry. 1.2. Diagnosis in Psychiatry. 1.3. Psychiatric expert evidence. Psychiatric interview. 1.4. Psychopathological examination.</li> <li>• Unit 2. Main psychiatric pathologies I. 2.1. Organic mental disorders. 2.2. Psychiatric disorders associated with the use of alcohol and other drugs. 2.3. Psychotic disorders. 2.4. Disorders of the mental state</li> <li>• Unit 3. Main psychiatric pathologies II. Or. 3.1. Neurotic disorders. 3.2. Personality and adult behavioral disorders. 3.3. Habit and impulse control disorders. 3.4. Mental retardation. Psychological developmental disorders.</li> <li>• Unit 4. Main Reports in Forensic Psychiatry. 4.1. Valuation of bodily injury. 4.2. Imputability and its forensic assessment. 4.3. The capacity to act and the process of incapacitation. 4.4. Psychiatric hospitalization.</li> <li>• Unit 5 . Decision-making in the psychiatric field. 5.1. Patients with mental illness.</li> </ul>						

<b>Year:</b> <b>3rd</b>	<b>Course code:</b> <b>9977001302</b>	<b>Course:</b> <b>Crime Prevention and Treatment</b> ( <i>Prevención y Tratamiento de la Delincuencia</i> )	<b>Program:</b> <b>Bachelor's Degree in Criminology</b>	<b>Term:</b> <b>Semester 1</b>	<b>Teaching Language:</b> <b>Spanish</b>	<b>Cr:</b> <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Preventive Criminology. 1.1. Crime prevention. 1.2. Special positive and negative prevention. 1.3. Theoretical Models in Preventive Criminology. 1.4. Prevention methods and techniques: assessment and intervention.</li> <li>• Unit 2. Prevention Models and Practical Programs. 2.1. Society, insecurity and fear of crime. Ecological theories and community prevention. 2.2. Police models. Deterrence model. 2.3. Prevention Techniques. 2.4. National and international overview of prevention.</li> <li>• Unit 3. Introduction to Criminological Treatment and Intervention. 3.1. Intervention in penal enforcement.3.2. Delinquency and treatment. 3.3. General therapeutic models and theories of rehabilitation. 3.4. Therapeutic needs, techniques and treatment formulation.</li> <li>• Unit 4. Intervention and treatment for juvenile offenders. 4.1. General framework and legislation. Models and types of measures for juvenile offenders. 4.2. Basic notions of juvenile delinquency. 4.3. Intervention in renovation centres. General Programs. 4.4. Intervention in Reform Centres. Specific Programs</li> </ul>						

- Unit 5. Prison intervention and treatment. 5.1. Intervention and treatment programmes according to prison classification and regime. 5.2. Specific intervention and prison treatment programmes according to the offence. 5.3. Specific prison intervention and treatment programmes according to the needs of the Inmates. 5.4. Other prison intervention and treatment programs.
- Unit 6. Evaluation of effectiveness: recidivism and criminal desistance. 6.1. Evaluation of the effectiveness of the treatment.

Year: <b>3rd</b>	Course code: <b>9977001303</b>	Course: <b>Delinquency and Social Control</b> <i>(Delincuencia y Control Social)</i>	Program: <b>Bachelor's Degree</b> <b>in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Delinquency and Criminal. 1.1. Delinquency as a definition. Explanatory models. 1.2. The Formation of the Offender. 1.3. Types of Crimes. 1.4. Causes of Antisocial Behavior Causes of Antisocial Behavior
- Unit 2. Violence as a Fact Element Options. 2.1. Processes of adherence to violence, element options. 2.2. Violence in Democracy: Social and State Violence. 2.3. Extreme Violence: Mass Violence and Terrorizing. 2.4. Violence as a form of control.
- Unit 3. Society, Insecurity, Fear and Social Control. 3.1. Today's society. Models of society. 3.2. The weakening of trust. Insecurity and fear. 3.3. From Consensus to Citizen Empowerment. 3.4. New forms of power. Collaborative Economies
- Unit 4. The existence of informal social control. 4.1. Social censorship. Informal social control. 4.2. Socialization and self-control. 4.3. The Future of Freedom in the Control Society. 4.4. Big Data. Surveillance and Social Control. New Topic
- Unit 5. Changing world. 5.1. Responses to clutter.

Year: <b>3rd</b>	Course code: <b>9977001304</b>	Course: <b>Types of criminalized conduct</b> <i>(Conductas Criminales Tipificadas)</i>	Program: <b>Bachelor's Degree</b> <b>in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Offences against natural persons I. 1.1. Crimes against independent human life. 1.2. Crimes against life and bodily integrity. 1.3. Offences against health and bodily integrity. 1.4. Offences against liberty and moral integrity.
- Unit 2. Offences against natural persons II. 2.1. Offences against sexual freedom and indemnity I. 2.2. Offences against sexual freedom and indemnity II. 2.3. Offences against privacy and honour. 2.4. Offences against family relations.
- Unit 3. Crimes against property, socio-economic order, public finances and security social. 3.1. Crimes against property. 3.2. Offences against the socio-economic order. 3.3. Offences of damage and related offences against collective security. 3.4. Offences against the Public Treasury and Social Security.
- Unit 4. Other offences against society. 4.1. Offences against the rights of workers and foreign nationals. 4.2. Offences relating to spatial planning and urban planning, protection of historical heritage and the environment. 4.3. Offences against public health. 4.4. Offences against road safety.
- Unit 5. Other offences against society, administration and the constitutional order. 5.1. Offences of falsehood. 5.2. Offences against the Public Administration. 5.3. Offences against the Administration of Justice. 5.4. Offences against the Constitution.
- Unit 6. Offences against public order, independence of the state, national defence and international community. 6.1. Offences against public order. 6.2. Crimes of treason, against the peace and independence of the state, and relating to national defense. 6.3. Crimes against the International Community

Year: <b>3rd</b>	Course code: <b>9977001305</b>	Course: <b>Criminalistic Workshop I</b> <i>(Taller de Criminalística I)</i>	Program: <b>Bachelor's Degree</b> <b>in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. The Crime Scene. 1.1. The scene of the crime. 1.2. Actors in the scene and evidentiary value. 1.3. The action in the scene. Hypothetical formulation of the facts. 1.4. The corpse and its surroundings.
- Unit 2. Ballistics. 2.1. Ballistics science and forensic ballistics. 2.2. Metallic and semi-metallic cartridges. 2.3. Ballistic eye inspection. 2.4. Identification Ballistics and Instrumental Traces
- Unit 3. Graphoscopy. 3.1. Fundamentals of writing. 3.2. Graphoscopy. 3.3. Forgery in handwriting and handwritten signatures. 3.4. The Documents
- Unit 4. Profiling. 4.1. Criminological profiling. 4.2. Modus operandi and signature. 4.3. Criminal profiling. 4.4. Geographic profiling.
- Unit 5. Computer Forensics. 5.1. Basics. 5.2. Technical concepts. Internet. 5.3. Legislation on computer crimes. 5.4. Computer crime investigation.

Year: <b>3rd</b>	Course code: <b>9977001306</b>	Course: <b>Criminalistic Workshop II</b> ( <i>Taller de Criminalística II</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to forensic sciences and biological samples. 1.1. Introduction to Criminology. 1.2. Introduction to Forensic Genetics. 1.3. Genetic databases: creation and usefulness in the field of Criminalistics. 1.4. Biological samples. 1.5. Preliminary tests. 1.6. Selection of preliminary tests</li> <li>Unit 2. DNA in Criminalistics I. 2.1. Basic concepts of DNA in Criminalistics. 2.2. Interpretation of nuclear DNA results. 2.3. Interpretation of nuclear DNA electropherograms.</li> <li>Unit 3. DNA in Criminalistics II. 3.1. Mitochondrial DNA in Criminalistics. 3.2. Applications of mitochondrial DNA in forensic genetics.</li> <li>Unit 4. Statistical assessment of the DNA test. 4.1. Statistical assessment. 4.2. Calculation of the probability of paternity. 4.3. Reading and interpretation of expert reports.</li> <li>Unit 5. Laboratory practices. 5.1. Preliminary tests. 5.2. DNA extraction and purification. 5.3. DNA Study &amp; results Interpretation</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9977001307</b>	Course: <b>Victimology</b> ( <i>Victimología</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to victimology. 1.1. Historical origins of victimology. 1.2. Victimology and criminology. 1.3. Basic concepts and research methods. 1.4. Legislation on victims.</li> <li>Unit 2. Victims of criminal activity. 2.1. Vulnerability, victims and perpetrators: Victimization risk. 2.2. The victims and their types. 2.3. Perception of crime: Victimization surveys. 2.4. The victim in the face of violent crime.</li> <li>Unit 3. Victim categories 3.1. When the victims are children. 3.2. The victim of sexual assault. 3.3. Victims of terrorism, genocide and catastrophes. 3.4. Victims of gender-based violence and domestic violence.</li> <li>Unit 4. Victim policies and the media. 4.1. The victims that "no one" sees. 4.2. Victims' associations: A critical analysis. 4.3. Victims in the media. 4.4. Victims and justice.</li> <li>Unit 5. Victim support. 5.1. Victims and the complaint. 5.2. Assessment. 5.3. Intervention.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9977001308</b>	Course: <b>Skills for Social and Educational Intervention in the Delinquent</b> ( <i>Habilidades para la Intervención Social y Educativa en el Delincuente</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: The field of socio-educational intervention.</li> <li>Unit 2: Organization and structure of socio-educational intervention.</li> <li>Unit 3: Institutions and Measures of Criminal Accountability in Open Environment Contexts and Measures deprivation of liberty.</li> <li>Unit 4: Pedagogy, methodologies and techniques in socio-educational intervention.</li> <li>Unit 5: Design of Socio-Educational Intervention Programs/ Criminal Responsibility/ Exclusion/ Crime prevention.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9977001309</b>	Course: <b>Criminal Proceedings and Procedures</b> ( <i>Procesos y Procedimientos Penales</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Basic Institutions of Criminal Procedural Law. 1.1. Criminal procedural law. 1.2. Courts and Tribunals with criminal jurisdiction. 1.3. Jurisdiction: concept and essential notes. 1.4. Competition. 1.5. Principles of criminal procedure</li> <li>Unit 2. The parties and the subject matter of the criminal proceedings. 2.1. The Accusing Parties. 2.2. The Accused Parties. 2.3. The purpose of the process.</li> <li>Unit 3. The Felony Trial I. 3.1. The Ordinary Procedure: Trial for Serious Crimes. 3.2. The Summary. 3.3. The Intermediate Period. 3.4. Precautionary measures.</li> <li>Unit 4. The Felony Trial II. 4.1. Articles of prior pronouncement. The defendant's compliance. 4.2. The test. 4.3. The Oral Trial. 4.4. The Judgment.</li> <li>Unit 5. Special reference to the acts of investigation within the investigation. 5.1. Judicial interrogation. 5.2. Witness statements. 5.3. The confrontation procedure. 5.4. Protected witnesses. 5.5. Undercover agents. 5.6. The agent</li> </ul>						

provocateur and the provoked crime. 5.7. Police informants. 5.8. Of particular relevance to the experts' report: the criminologist's contribution

- Unit 6. Other criminal proceedings. 6.1. The Expedited Procedure. 6.2. The Procedure for the Speedy Prosecution of Certain Crimes. 6.3. The Jury Court Procedure.
- Unit 7. Other criminal proceedings. Appeals and enforcement of judgments. 7.1. The Procedure for the Trial of Minor Crimes. 7.2. Other Special Processes. 7.3. The general system of appeals. 7.4. Enforcement of Judgments

Year: <b>3rd</b>	Course code: <b>9977001310</b>	Course: <b>Penology and Penitentiary Law</b> ( <i>Penología y Derecho Penitenciario</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The system of penalties in the Spanish legal system. 1.1. General Theory of Punishment. 1.2. The sentencing system. 1.3. Typology of penalties in the Spanish penal system. 1.4. Pecuniary penalties and ancillary consequences.
- Unit 2. Sentencing and alternatives to imprisonment. 2.1. The rules for determining the penalty in the Spanish legal system. 2.2. Execution of custodial sentences I. 2.3. Execution of the custodial sentences II. 2.4. Security measures.
- Unit 3. Spanish Penitentiary Law. 3.1. Approximation to Penitentiary Law. 3.2. Penitentiary Systems: Classes and Evolution. 3.3. The Prison Administration and the Prison Legal Relationship. 3.4. Going to prison. Classes, forms, procedures and typologies.
- Unit 4. Prison regime and treatment. 4.1. Classification of inmates and regime of penitentiary establishments. 4.2. Prison treatment. 4.3. Rights, duties and daily life in the penitentiary. 4.4. Probation, release and release.
- Unit 5. From the commission of the crime to the entry into prison. Case study. Penology. 5.1. Case study. Penology.
- Unit 6. The penitentiary iter of a common prisoner. 6.1. Case study on prison law.

<b>4</b>	<b>9977001401</b>	<b>Habilidades Directivas y de Negociación</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>		<b>Español</b>	<b>6</b>
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Year: <b>4th</b>	Course code: <b>9977001402</b>	Course: <b>Clinical Criminology</b> ( <i>Criminología Clínica</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Clinical Criminology and the Criminological Report. 1.1. Clinical Criminology. 1.2. Risk management. 1.3. The criminological report.
- Unit 2. The Road to Violence I. 2.1. Personality disorders I. 2.2. Personality disorders II. 2.3. Personality disorders III. 2.4. The reality of mental disorders today.
- Unit 3. The Road to Violence II. 3.1. Psychopathy I. 3.2. Psychopathy II. 3.3. Psychopathy III. 3.4. Narcissism.
- Unit 4. The Road to Violence III. 4.1. Paraphilias. 4.2. Necrophilia. 4.3. Cannibalism. 4.4. Sadism.
- Unit 5. The Road to Violence IV. 5.1. Syndromes and violence I. 5.2. Syndromes and violence II. 5.3. Münchhausen syndrome by proxy.
- Unit 6. Protocols for assessing the risk of violence. 6.1. The PCL:SV. 6.2. HCR:20. 6.3. The SVR:20. 6.3. SARA.

Year: <b>4th</b>	Course code: <b>9977001802</b>	Course: <b>Domestic Violence and Gender-Based Violence</b> ( <i>Violencia Doméstica y Violencia de Género</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Inequality, resistance to change and power relations. 1.1. Key concepts and definition of gender inequality. 1.2. Genesis and historical evolution of domestic and gender-based violence. 1.3. The legal status of women in Spain.
- Unit 2. Epidemiology of domestic and gender-based violence. 2.1. Explanatory theories and models of domestic and gender-based violence. 2.2. Manifestations of gender-based violence. 2.3. Contexts of gender-based violence.
- Unit 3. The dynamics of abuse. 3.1. The dynamics of abuse. 3.2. Men who perpetrate violence against women. 3.3. Risk factors and consequences of abuse. 3.4. Minors exposed to gender-based violence in the family.
- Unit 4. Legal area of domestic and gender-based violence. 4.1. The Law on Comprehensive Protection Measures against Gender-Based Violence. 4.2. Criminal protection of victims of domestic and gender-based violence.
- Unit 5. Sociological field of domestic and gender-based violence. 5.1. Design and evaluation of programmes to prevent and raise awareness of violence in gender and domestic. 5.2. Treatment and intervention programs with abusive men.

Year: <b>4th</b>	Course code: <b>9977001803</b>	Course: <b>Testimony Psychology</b> ( <i>Psicología del Testimonio</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Basic Memory Processes. 1.1. The Basics. 1.2. Memory Processes. 1.3. Specific aspects of memory</li> <li>Unit 2: Evaluation of testimony. 2.1. Introduction to the Assessment of Testimony. 2.2. Accuracy of Statements. 2.3. Assessment of Witnessing Skills</li> <li>Unit 3: Witnessing Tools. 3.1. Police Interview. 3.2. Interview protocol. 3.3. Credibility of the Testimony</li> </ul>						

Year: <b>4th</b>	Course code: <b>9977001806</b>	Course: <b>Mediation and Conflict Resolution</b> ( <i>Mediación y Resolución de Conflictos</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Alternative Dispute Resolution (ADR) Systems. 1.1.- The Justice Paradigm: Restorative Justice and Therapeutic Justice. 1.2.- Conflict and its different solutions. 1.3.- Heterocompositional and self-compositional systems</li> <li>Unit 2. Models of mediation and conciliation in other areas related to Criminology. 2.1.- Approach to mediation. 2.2.- Mediation in civil and commercial matters. 2.3.- Mediation in the family environment. 2.4.- Labor mediation. Other areas of mediation</li> <li>Unit 3. Mediation in criminal matters. 3.1.- Mediation in the Criminal Jurisdiction of Adults. 3.2.- Mediation in the criminal jurisdiction of minors</li> <li>Unit 4.- Techniques and procedure. 4.1.- Planning and strategy in conflict management. 4.2.- The process in conflict management. 4.3.- Facilitator's techniques and skills</li> <li>Unit 5. Psychological Assessment and Risk Prediction. 5.1.- Risk Assessment and Prediction. 5.2.- Intervention and evaluation in social maladjustment</li> </ul>						

<b>4</b>	<b>9977001807</b>	<b>Dirección de Personas y Gestión de Recursos Humanos</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>
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Year: <b>4th</b>	Course code: <b>9977001809</b>	Course: <b>Technology Risk Management</b> ( <i>Gestión de Riesgos Tecnológicos</i> )	Program: <b>Bachelor's Degree in Criminology</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. System, network, and Internet security.</li> <li>Unit 2. Data protection.</li> <li>Unit 3. Cybercriminal and cybercrimes.</li> <li>Unit 4. Cyberespionage, hacktivism, cyberterrorism and cyberwar.</li> <li>Unit 5. Espionage systems.</li> </ul>						

## Bachelor's Degree in Law (*Grado en Derecho*) (Spanish)

<b>1</b>	<b>9984002101</b>	<b>Teoría General del Derecho y Pensamiento Jurídico</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9984002102</b>	<b>Sistemas Jurídicos Comparados</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9984002103</b>	<b>Derecho Constitucional</b>	<b>Semestre 1 / Fall Term (Sept-Jan)</b>		<b>Español</b>	<b>6</b>

Year: <b>1st</b>	Course code: <b>9984002104</b>	Course: <b>Ethics and professional efficiency</b> ( <i>Ética y eficacia profesional</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						



- Unit 1. Approaches to Ethics in Different Areas of Professional Practice
- Unit 2. Independent Learning and Self-Regulation in Personal Life and Professional Practice
- Unit 3. Keys to Organising and Managing Teamwork

1	9984002105	Derecho Civil I	Semestre 2 / Spring Term (Jan-Jun)		Español	3
1	9984002106	Derecho Penal I	Semestre 2 / Spring Term (Jan-Jun)		Español	6
1	9984002107	Derecho Mercantil I	Semestre 2 / Spring Term (Jan-Jun)		Español	3
1	9984002108	Derecho Administrativo I	Semestre 2 / Spring Term (Jan-Jun)		Español	6
1	9984002109	Derechos Fundamentales y Libertades públicas	Semestre 2 / Spring Term (Jan-Jun)		Español	6
1	9984002110	Interpretación y análisis de estados financieros	Semestre 2 / Spring Term (Jan-Jun)		Español	6

Year: <b>2nd</b>	Course code: <b>9984002201</b>	Course: <b>Public International Law</b> ( <i>Derecho Internacional Público</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Evolution of International Law</li> <li>• Unit 2. Subjects of International Law</li> <li>• Unit 3. International Legal Rules</li> <li>• Unit 4. Fundamental Principles of Peaceful Coexistence and Cooperation Between States and Other International Actors.</li> <li>• Unit 5. Charter of the United Nations</li> <li>• Unit 6. Rome Statute</li> <li>• Unit 7. State Liability in International Law</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.</li> <li>• SC02: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.</li> <li>• SC09: Ability to understand different legal systems in a globalised context.</li> <li>• SC10 Ability to understand the differences between the various fields within the legal profession</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9984002202</b>	Course: <b>Criminal Law II</b> ( <i>Derecho Penal II</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Offences Against the Person I</li> <li>• Unit 2. Offences Against the Person II</li> <li>• Unit 3. Offences Against Property, Socio-economic Order, Tax Authorities and Social Security Authorities</li> <li>• Unit 4. Other Offences Against Society</li> <li>• Unit 5. Other Offences Against Society, Government and Constitutional Order</li> <li>• Unit 6. Offences Against Public Order, the Independence of the State, National Defence, the International Community</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC1. Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.</li> <li>• SC5. Ability to make convincing legal arguments.</li> <li>• SC7. Ability to develop critical awareness in the analysis of the legal system.</li> <li>• SC8. Ability to identify legal issues and provide appropriate solutions to real situations.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9984002203</b>	Course: <b>Civil Law II</b> ( <i>Derecho Civil II</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						

- Unit 1. Private Autonomy
- Unit 2. Property and Assets
- Unit 3. Prescription and Forfeiture
- Unit 4. The Legally Binding Relationship: Elements, Performance and Breach, Modification and Termination
- Unit 5. Credit Guarantee and Protection
- Unit 6. Non-contractual Liability
- Unit 7. Overview and Core Elements of Contracts: Formation, Interpretation, Effects and Ineffectiveness

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC3: Ability to develop legal argumentation skills and techniques in another language.
- SC4: Ability to use new technology in the legal field: databases, case law, legislation, specific software.
- SC5: Ability to make convincing legal arguments.
- SC10: Ability to understand the differences between the various fields within the legal profession.

Year: <b>2nd</b>	Course code: <b>9984002204</b>	Course: <b>Administrative Law II (<i>Derecho Administrativo II</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Financial Liability of the State
- Unit 2. Power of Expropriation
- Unit 3. Punitive Power
- Unit 4. Public Assets and Urban Planning
- Unit 4. Economic Resources and Public Employment

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC5: Ability to make convincing legal arguments.
- SC7: Ability to develop critical awareness in the analysis of the legal system.

Year: <b>2nd</b>	Course code: <b>9984002205</b>	Course: <b>Introduction to Procedural Law (<i>Introducción al Derecho Procesal</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Procedural Law
- Unit 2. Jurisdiction. Organisation of the Judiciary. Competence. Judicial Personnel and Supporting Staff
- Unit 3. Parties of the Proceedings
- Unit 4. The Right to Effective Legal Protection: Cause of Action The Claim
- Unit 5. Procedure and Proceedings:
- Unit 6. Concept and Procedural Requirements
- Unit 7. Principles and Structure of a Procedure
- Unit 8. Types of Procedure

**Specific competencies:**

- SC5: Ability to make convincing legal arguments.
- SC7: Ability to develop critical awareness in the analysis of the legal system.
- SC9: Ability to understand different legal systems in a globalised context.
- SC10: Ability to understand the differences between the various fields within the legal profession.

Year: <b>2nd</b>	Course code: <b>9984002206</b>	Course: <b>Civil and Commercial Contracts (<i>Contratación Civil y Mercantil</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Civil Contracts
- Unit 2. Commercial Contracts
- Unit 3. Areas of Specialisation: Consumer and User Law

- Unit 4. Law on Negotiable Instruments

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC7: Ability to develop critical awareness in the analysis of the legal system.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.
- SC10: Ability to understand the differences between the various fields within the legal profession.

Year: <b>2nd</b>	Course code: <b>9984002207</b>	Course: <b>Labour Law I (<i>Derecho del Trabajo I</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. History of Labour Law</li> <li>• Unit 2. The Object and Sources of Labour Law. Formal Sources and Material Sources</li> <li>• Unit 3. Collective Subjects of Employment: Freedom of Association. Trade Union Representation in Companies</li> <li>• Unit 4. Subjects of the Employment Relationship</li> <li>• Unit 5. Birth of the Employment Relationship</li> <li>• Unit 6. Working Conditions</li> <li>• Unit 7. Difficulties of the Employment Relationship</li> <li>• Unit 8. Termination of the Employment Relationship</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC5: Ability to make convincing legal arguments.</li> <li>• SC7: Ability to develop critical awareness in the analysis of the legal system.</li> <li>• SC8: Ability to identify legal issues and provide appropriate solutions to real situations.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9984002208</b>	Course: <b>Commercial Law II (<i>Derecho Mercantil II</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Public Limited Company and Private Limited Company</li> <li>• Unit 2. Special Commercial Companies: (Sole Proprietorship, Startup, Employee-owned, Professional Associations, Cooperatives, Mutual Companies, SICAV, etc.</li> <li>• Unit 3. Governing Bodies of Corporate Enterprises</li> <li>• Unit 4. Structural Changes to Commercial Companies: Transformation, Merger, Spin-off</li> <li>• Unit 5. Joint Ventures and Groups of Companies</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.</li> <li>• SC5: Ability to make convincing legal arguments.</li> <li>• SC7: Ability to develop critical awareness in the analysis of the legal system.</li> <li>• SC8: Ability to identify legal issues and provide appropriate solutions to real situations.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9984002209</b>	Course: <b>Interpersonal Influence and Impact (<i>Influencia e impacto relacional</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Communication in the Professional World</li> <li>• Unit 2. Emotional Intelligence in Interpersonal Relationships</li> <li>• Unit 3. Successful Change: Adaptability</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC03: Ability to develop legal argumentation skills and techniques in another language.</li> <li>• SC05: Ability to make convincing legal arguments.</li> <li>• SC06: Ability to be diligent and responsible in the professional practice of a lawyer or other legal professional, staying up to date on legal matters.</li> <li>• SC07: Ability to develop critical awareness in the analysis of the legal system.</li> </ul>						

- SC08: Ability to identify legal issues and provide appropriate solutions to real situations.
- SC10: Ability to understand the differences between the various fields within the legal profession.

Year: <b>2nd</b>	Course code: <b>9984002210</b>	Course: <b>European Union Law (<i>Derecho de la Unión Europea</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Origin and Evolution of the European Integration Process</li> <li>• Unit 2. Institutional System of the European Union</li> <li>• Unit 3. Legal System of the European Union. Sources of Law</li> <li>• Unit 3. The Impact of European Union Law on Member States Relationship Between Legal Systems</li> <li>• Unit 5. EU Taxation and Budget</li> <li>• Unit 6. The Single Market and Fundamental Economic Freedoms</li> <li>• Unit 7. EU Fundamental Rights and Citizenship</li> <li>• Unit 8. Area of Freedom, Security and Justice</li> <li>• Unit 9. EU Administrative and Legal Proceedings</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.</li> <li>• SC3: Ability to develop legal argumentation skills and techniques in another language.</li> <li>• SC5: Ability to make convincing legal arguments.</li> <li>• SC8: Ability to identify legal issues and provide appropriate solutions to real situations.</li> <li>• SC9: Ability to understand different legal systems in a globalised context.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9984002211</b>	Course: <b>Law of Torts (<i>Derecho de Daños</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. The Law of Torts and Liability</li> <li>• Unit 2. Economic Analysis of the Law of Torts</li> <li>• Unit 3. Contractual and Tortious Liability</li> <li>• Unit 4. Specific Features of Certain Situations of Liability</li> <li>• Unit 5. Situations of Liability under Special Legal Regulation</li> <li>• Unit 6. Insurance Policies and Liability</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC5: Ability to make convincing legal arguments.</li> <li>• SC7: Ability to develop critical awareness in the analysis of the legal system.</li> <li>• SC9: Ability to understand different legal systems in a globalised context.</li> <li>• SC10: Ability to understand the differences between the various fields within the legal profession.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9984002301</b>	Course: <b>Civil Procedure Law (<i>Derecho Procesal Civil</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Organisation of the Judiciary</li> <li>• Unit 2. Civil Jurisdiction and Competence</li> <li>• Unit 3. Parties in Civil Proceedings: Capacity, Standing, Representation, Procedural Succession. Multiple Parties</li> <li>• Unit 4. Types of Proceedings: Ordinary and Special. Injunctive Relief. Enforcement Proceedings: Enforcement Orders, Provisional Enforcement, Monetary and Non-Monetary Enforcement</li> <li>• Unit 5. Alternative Dispute Resolution</li> <li>• Unit 6. Voluntary Jurisdiction</li> </ul> <b>Specific competencies:</b> <ul style="list-style-type: none"> <li>• SC5: Ability to make convincing legal arguments.</li> <li>• SC8: Ability to identify legal issues and provide appropriate solutions to real situations.</li> <li>• SC9: Ability to understand different legal systems in a globalised context.</li> <li>• SC10: Ability to understand the differences between the various fields within the legal profession.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9984002302</b>	Course: <b>Civil Law III (<i>Derecho Civil III</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. General Real Rights
- Unit 2. Possession and Usucaption
- Unit 3. Ownership as the Full Real Right: Elements, Types, Limitations, Modes of Acquisition and Legal Protection
- Unit 4. The Property Registry
- Unit 5. Limited Real Rights of Enjoyment, Security and Preferential Acquisition

**Specific competencies:**

- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC4: Ability to use new technology in the legal field: databases, case law, legislation, specific software.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.
- SC9: Ability to understand different legal systems in a globalised context.

Year: <b>3rd</b>	Course code: <b>9984002303</b>	Course: <b>Finance and Tax Law I (<i>Derecho Financiero y Tributario I</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Tax: Concept, Types and Elements
- Unit 2. Tax Procedures
- Unit 3. Budget Law
- Unit 4. Public Debt Law
- Unit 5. Review of Tax Actions
- Unit 6. Tax Penalty Law

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC9: Ability to understand different legal systems in a globalised context.
- SC10: Ability to understand the differences between the various fields within the legal profession.

Year: <b>3rd</b>	Course code: <b>9984002304</b>	Course: <b>Labour Law II (<i>Derecho del Trabajo II</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Social Security: Scope of Application and Social Security Administration
- Unit 2. Establishment of the Legal Relationship of Insurance, Contribution and Collection
- Unit 3. Benefits and the Protective Role of the General Social Security Scheme
- Unit 4. Special Schemes
- Unit 5. Labour Disputes Classification. Demonstrations: Strikes and Lock-outs
- Unit 6. Out-of-court Collective Dispute Resolution Procedures.

**Specific competencies:**

- SC5: Ability to make convincing legal arguments.
- SC7: Ability to develop critical awareness in the analysis of the legal system.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.

Year: <b>3rd</b>	Course code: <b>9984002305</b>	Course: <b>Civil Law IV (<i>Derecho Civil IV</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Family Law and Basic Obligations
- Unit 2. The Legal Regime of Marriage and De Facto Unions. Personal and Property Matters
- Unit 3. Filiation and Guardianship
- Unit 4. Testacy and Intestacy
- Unit 5. Special Features of Regional Family Law

- Unit 6. Special Features of Regional Inheritance Law

**Specific competencies:**

- SC5: Ability to make convincing legal arguments.
- SC7: Ability to develop critical awareness in the analysis of the legal system.
- SC9: Ability to understand different legal systems in a globalised context.
- SC10: Ability to understand the differences between the various fields within the legal profession.

Year: <b>3rd</b>	Course code: <b>9984002306</b>	Course: <b>Criminal Procedure Law</b> ( <i>Derecho procesal penal</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Core Institutions of Criminal Procedure Law
- Unit 2. Parties and Purpose of Criminal Proceedings
- Unit 3. Serious Crime Proceedings I
- Unit 4. Serious Crime Proceedings II
- Unit 5. Other Criminal Proceedings
- Unit 6. Other Criminal Proceedings. Appeals and Enforcement of Judgments

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC5: Ability to make convincing legal arguments.
- SC7: Ability to develop critical awareness in the analysis of the legal system.
- SC9: Ability to understand different legal systems in a globalised context.

Year: <b>3rd</b>	Course code: <b>9984002307</b>	Course: <b>Procedural Law of Administrative Litigation</b> ( <i>Derecho procesal contencioso-administrativo</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. The Administrative Litigation Process: Scope, Competence and Organs of the Jurisdiction
- Unit 2. Parties to the Proceedings and Purpose of the Judicial Review Claim
- Unit 3. The Specific Administrative Litigation Process: Ordinary, Abridged and Special Procedures
- Unit 4. Methods of Appeal in the Administrative Litigation Order: Judicial Review Claims and Review of Judgments
- Unit 5. The New Administrative Litigation Appeal and Standing to Appeal.
- Unit 6. Injunctive Relief in the Administrative Litigation Jurisdiction
- Unit 7. Enforcement of Judgments in the Administrative Litigation Order

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.
- SC9: Ability to understand different legal systems in a globalised context.
- SC10: Ability to understand the differences between the various fields within the legal profession.

Year: <b>3rd</b>	Course code: <b>9984002308</b>	Course: <b>Labour Procedure Law</b> ( <i>Derecho procesal laboral</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Avoidance of Proceedings
- Unit 2. Parties of the Proceedings. Preparatory Action and Preliminary Procedures
- Unit 3. Payment Order Proceedings and Special Proceedings
- Unit 4. Proceedings Related to Arrangements Under the Employment Contract
- Unit 5. Proceedings Related to Termination of the Employment Contract
- Unit 6. The Judgment

- Unit 7. Ordinary Proceedings
- Unit 8. Methods of Appeal and Enforcement of Judgments

**Specific competencies:**

- SC5: Ability to make convincing legal arguments.
- SC7: Ability to develop critical awareness in the analysis of the legal system.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.

Year: <b>3rd</b>	Course code: <b>9984002309</b>	Course: <b>Finance and Tax Law II</b> ( <i>Derecho Financiero y Tributario II</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Direct State Income Tax
- Unit 2. Direct State Property Tax
- Unit 3. Indirect State Tax on Civil Transactions
- Unit 4. Indirect State Tax on Commercial Transactions
- Unit 5. Regional Taxation
- Unit 6. Local Taxation

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC9: Ability to understand different legal systems in a globalised context.
- SC10: Ability to understand the differences between the various fields within the legal profession.

Year: <b>3rd</b>	Course code: <b>9984002310</b>	Course: <b>Techniques of Evidence</b> ( <i>Técnica probatoria</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Procedural Principles and Safeguards Related to Evidence
- Unit 2. Techniques of Evidence (questioning of the parties/statements; expert evidence; documentary evidence; circumstantial evidence; new evidence; evidence produced pre-trial).
- Unit 3. Lawyers' Evidentiary Strategies
- Unit 4. Drafting the Basic Pleading Document in the Various Branches of Procedural Law
- Unit 5. The Value of Digital Evidence (Specifically Electronic Documents)

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC4: Ability to use new technology in the legal field: databases, case law, legislation, specific software.
- SC5: Ability to make convincing legal arguments.
- SC6: Ability to be diligent and responsible in the professional practice of a lawyer or other legal professional, staying up to date on legal matters.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.
- SC9: Ability to understand different legal systems in a globalised context.

Year: <b>3rd</b>	Course code: <b>9984002803</b>	Course: <b>Regulated Sectors</b> ( <i>Sectores regulados</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Legal and Economic Foundations, Concepts and Methodologies of Economic Sector Regulations
- Unit 2. Economic Regulation and Market Structures
- Unit 3. Economic Competition and Efficient Markets
- Unit 4. Privatisation and Economic Regulation
- Unit 5. Antitrust Policies, Industry Structure and Business Coalitions
- Unit 6. National and European Sector Analysis (Sectors: Transport, Energy, Telecommunications and Banking)

**Specific competencies:**

- SC01: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.

- SC02 Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC08 Ability to identify legal issues and provide appropriate solutions to real situations.
- SC09 Ability to understand and navigate different legal systems in a globalised context.
- SC10 Ability to understand the differences between the various fields within the legal profession.

Year: <b>3rd</b>	Course code: <b>9984002823</b>	Course: <b>Immigration Law (<i>Derecho de extranjería</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Fundamental Rights and Civil Liberties of Foreign Nationals in Spain</li> <li>• Unit 2. International Law's Treatment and Protection of Foreign Nationals and Its Limitations</li> <li>• Unit 3. Applicable Law in Legal Matters with a Foreign Element and Conflict of Laws</li> <li>• Unit 4. Consular Relations. Consular Offices.</li> <li>• Unit 5. Immigration and Nationality</li> <li>• Unit 6. Entry and Stay of Foreign Nationals in Spain</li> <li>• Unit 7. Recognition and Validation of Foreign Degrees and Qualifications</li> <li>• Unit 8. Asylum and Refuge</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC01: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.</li> <li>• SC07: Ability to develop critical awareness in the analysis of the legal system.</li> <li>• SC09: Ability to understand different legal systems in a globalised context.</li> <li>• SC10: Ability to understand the differences between the various fields within the legal profession.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9984002829</b>	Course: <b>Environmental legislation and taxation (<i>Derecho y fiscalidad del medio ambiente</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. General environmental legislation: European and national</li> <li>• Unit 2. Structure and organization of environmental public administrations</li> <li>• Unit 3. Administrative and criminal liability in the environment</li> <li>• Unit 4. Environmental public action systems</li> <li>• Unit 5. Tax powers at the state, regional and local levels</li> <li>• Unit 6. Environmental taxation</li> <li>• Unit 7. Sustainable Development: Sustainable Development Strategies</li> </ul>						

Year: <b>4th</b>	Course code: <b>9984002401</b>	Course: <b>Private International Law (<i>Derecho Internacional Privado</i>)</b>	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Purpose and Content of Private International Law</li> <li>• Unit 2. International Jurisdiction</li> <li>• Unit 3. Methods of Regulation and Types of Rules</li> <li>• Unit 4. Issues Related to the Application of Private International Law</li> <li>• Unit 5. The Foreign Litigant and International Judicial Assistance</li> <li>• Unit 6. Extraterritorial Effectiveness of Foreign Court Decisions</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>• SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.</li> <li>• SC5: Ability to make convincing legal arguments.</li> <li>• SC8: Ability to identify legal issues and provide appropriate solutions to real situations.</li> <li>• SC9: Ability to understand different legal systems in a globalised context.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9984002402</b>	Course:	Program: <b>Bachelor's Degree in Law</b>	Term:	Teaching Language:	Cr: <b>6 ECTS</b>
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		<b>International Business Law</b> ( <i>Derecho Internacional de los Negocios</i> )		<b>Semester 2</b>	<b>Spanish</b>	
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. The Internationalisation of Business and Market Characteristics</li> <li>Unit 2. International Marketing</li> <li>Unit 3. Financing, Risk Coverage and Forms of Payment</li> <li>Unit 4. Transport in International Business Transactions</li> <li>Unit 5. International Procurement</li> <li>Unit 6. Commercial and Administrative Regulations</li> <li>Unit 7. Organisations and Institutions</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.</li> <li>SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.</li> <li>SC9: Ability to understand different legal systems in a globalised context.</li> <li>SC10: Ability to understand the differences between the various fields within the legal profession.</li> </ul>						

<b>Year:</b> 4th	<b>Course code:</b> 9984002403	<b>Course:</b> <b>Entrepreneurial leadership</b> ( <i>Liderazgo emprendedor</i> )	<b>Program:</b> <b>Bachelor's Degree in Law</b>	<b>Term:</b> <b>Semester 1</b>	<b>Teaching Language:</b> <b>Spanish</b>	<b>Cr:</b> <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Keys to Leadership</li> <li>Unit 2. Proactive Thinking and Entrepreneurial Spirit</li> <li>Unit 3. Complex Organisations: Balancing Domestic and Global Matters</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC01 Acquisition and development of a critical mindset in order to understand and analyse the surrounding socio-political, historical, economic, cultural, scientific, sporting, etc. context.</li> <li>SC03 Ability to develop legal argumentation skills and techniques in another language.</li> <li>SC06 Ability to prioritise information in terms of its importance, or other content and resources.</li> <li>SC07 Ability to develop critical awareness in the analysis of the legal system.</li> <li>SC09 Ability to understand different legal systems in a globalised context.</li> <li>SC10 Ability to understand the differences between the various fields within the legal profession.</li> </ul>						

<b>Year:</b> 4th	<b>Course code:</b> 9984002806	<b>Course:</b> <b>Banking and Securities Law</b> ( <i>Derecho Bancario y Bursátil</i> )	<b>Program:</b> <b>Bachelor's Degree in Law</b>	<b>Term:</b> <b>Semester 1</b>	<b>Teaching Language:</b> <b>Spanish</b>	<b>Cr:</b> <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Banking Entities and Supervisory Bodies</li> <li>Unit 2. Banking Agreements and Forms of Payment</li> <li>Unit 3. Securities Market: Primary and Secondary</li> <li>Unit 4. Insurance Market</li> <li>Unit 5. Financial Markets and Competition Law</li> </ul>						
<b>Specific competencies:</b>						
<ul style="list-style-type: none"> <li>SC1. Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.</li> <li>SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.</li> <li>SC3: Ability to develop legal argumentation skills and techniques in another language.</li> <li>SC4: Ability to use new technology in the legal field: databases, case law, legislation, specific software.</li> </ul>						

<b>Year:</b> 4th	<b>Course code:</b> 9984002825	<b>Course:</b> <b>International Humanitarian Law</b> ( <i>Derechos Humanos</i> )	<b>Program:</b> <b>Bachelor's Degree in Law</b>	<b>Term:</b> <b>Semester 1</b>	<b>Teaching Language:</b> <b>Spanish</b>	<b>Cr:</b> <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. The Concept of Internal and International Armed Conflict</li> <li>Unit 2. Rules on the Conduct of Hostilities</li> </ul>						

- Unit 3. Rules on the Civil Defence
- Unit 4. Rules on the Protection of Non-Combatants
- Unit 5. The Role of the International Committee of the Red Cross
- Unit 6. Implementation and Enforcement of IHL

**Specific competencies:**

- SC1: Ability to navigate the framework of legislation, legal doctrine and case law governing public and private legal relations.
- SC3: Ability to develop legal argumentation skills and techniques in another language.
- SC7: Ability to develop critical awareness in the analysis of the legal system.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.

Year: <b>4th</b>	Course code: <b>9984002826</b>	Course: <b>International Judicial Cooperation</b> ( <i>Cooperación jurídica internacional</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The Foundations of International Judicial Cooperation
- Unit 2. Legal Aid Abroad
- Unit 3. Judicial Cooperation in Civil Matters in the European Union
- Unit 4. Parental Responsibility in the European Union
- Unit 5. European Arrest Warrant
- Unit 6. Transfer of Sentenced Persons

**Specific competencies:**

- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC5: Ability to make convincing legal arguments.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.
- SC9: Ability to understand different legal systems in a globalised context.

Year: <b>4th</b>	Course code: <b>9984002828</b>	Course: <b>Public Procurement</b> ( <i>Contratación pública</i> )	Program: <b>Bachelor's Degree in Law</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Commercial Activity of Public Authorities: Origin and Regulatory Development
- Unit 2. Public Contracts: Concept and Types
- Unit 3. General Provisions on Procurement
- Unit 4. Public Contract Drafting. Administrative Records
- Unit 5. Contract Awarding
- Unit 6. Contract Performance
- Unit 7. Contract Termination
- Unit 8. Checks and Balances on Public Procurement

**Specific competencies:**

- SC2: Ability to understand the law as a systematic, coherent whole, taking into account issues within the socioeconomic context.
- SC5: Ability to make convincing legal arguments.
- SC7: Ability to develop critical awareness in the analysis of the legal system.
- SC8: Ability to identify legal issues and provide appropriate solutions to real situations.

## Bachelor's Degree in Business Management Based on Data Analysis (*Grado en Gestión Empresarial Basada en el Análisis de Datos*) (**Spanish**)

<b>1</b>	<b>9808001101</b>	<b>Fundamentos de Gestión de la Empresa</b>	<b>Semestre 1 / Fall Term (Sept – Jan)</b>		<b>Español</b>	<b>6</b>
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1	9808001102	Estadística I	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9808001103	Fundamentos de la programación I	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9808001104	Marketing	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9808001105	Matemáticas: álgebra y cálculo	Semestre 1 / Fall Term (Sept - Jan)		Español	6
1	9808001106	Contabilidad I	Semestre 2 / Spring Term (Jan - Jun)		Español	6
1	9808001107	Finanzas I	Semestre 2 / Spring Term (Jan - Jun)		Español	6
1	9808001108	Macroeconomía	Semestre 2 / Spring Term (Jan - Jun)		Español	6
1	9808001109	Microeconomía	Semestre 2 / Spring Term (Jan - Jun)		Español	6
1	9808001110	Taller. Toma de decisiones I	Semestre 2 / Spring Term (Jan - Jun)		Español	6
2	9808001201	Estadística II	Semestre 1 / Fall Term (Sept - Jan)		Español	6

Year: <b>2nd</b>	Course code: <b>9808001202</b>	Course: <b>Programming Fundamentals II</b> (Fundamentos de la programación II)	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Review of Python
- Unit 2: Introduction to object-oriented programming (OOP)
- Unit 3. Introduction to UML (Unified Modelling Language)
- Unit 4. Basic modelling of objects and their relations
- Unit 5. Basic implementation (classes, inheritance, association, etc.)
- Unit 6. Advanced implementation (overloading, overwriting, access modifiers, polymorphism, interfaces, etc.)

Year: <b>2nd</b>	Course code: <b>9808001203</b>	Course: <b>Accounting II</b> (Contabilidad II)	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Advanced financial accounting. 1.1. Inventory and collection rights. 1.2. Staff expenses. 1.3. Financial instruments. 1.4. Accrual.
- Unit 2. Fixed assets and amortization. 2.1.Fixed assets: characteristics and classification. 2.2.Amortization: methods. 2.3.Financial importance of amortization.
- Unit 3.Introduction to accounting analysis. 3.1.Annual accounts and their importance in decision making. 3.2.Accounting analysis method.
- Unit 4.Solvency and liquidity analysis. 4.1.Solvency analysis. 4.2.Liquidity analysis.
- Unit 5.Profitability analysis. 5.1.Profit and loss account: introduction. 5.2.Profitability analysis.

Year: <b>2nd</b>	Course code: <b>9808001204</b>	Course: <b>Finances II (Finanzas II)</b>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Financial management objectives 1.1. Introduction to finances and its evolution. 1.2. The company's objective and the role of the financial manager 1.3. Net Present Value (NPV) 1.4. Internal rate of return (IRR) 1.5. Payback period. 1.6. Investment selection.
- Unit 2: Calculating cash flows. 2.1. Obtaining cash flows. 2.2. Investment evaluation using real and nominal cash flow.2.3. Computer tools for cash flow evaluation and calculation

- Unit 3: Project assessment in a context of uncertainty. 3.1. Sensitivity analysis 3.2. Scenario analysis 3.3. Stalemate analysis. 3.4. Sequential decisions: decision trees
- Unit 4: The financial system. 4.1: Introduction. Financial system. 4.2. The Bank of Spain and the European Central Bank. 4.3. International monetary policies. 4.4. International financial institutions
- Unit 5: Credit institutions. Banking entities. 5.1. Interbank markets. 5.2. Credit institutions. 5.3. Active and passive operations of credit institutions. 5.4. Credit institution services. 5.5. Banks, saving accounts and credit unions
- Unit 6: Other institutions and financial markets. Insurance company activities. 6.1. Financial credit institutions and other secondary institutions. 6.2. Capital markets. Institutions and operations. 6.3. Intermediaries of the capital market and collective investment institutions

Year: <b>2nd</b>	Course code: <b>9808001205</b>	Course: <b>Databases (<i>Bases de datos</i>)</b>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1: Foundations of databases. 1.1. Information and databases. 1.2. Databases (DB) and languages. 1.3. DB architecture and characteristics. 1.4. Life cycle
- Unit 2: Types of databases. DB classification and historical evolution. 2.1. Current trends in data management
- Unit 3: Data model definition. 3.1. DB analysis: ER model. 3.2. DB design: Relational model.
- Unit 4: Database design. 4.1. ER diagrams. 4.2. Moving onto tables: Basic normalisation
- Unit 5: SQL. Data manipulation. 5.1. Introduction to SQL. Simple queries. 5.2. SQL. Advanced queries. 5.3. Inserting, modifying and erasing data.
- Unit 6: SQL. Definition of data. 6.1. Creating tables: types of data, integrity constraints. 6.2. Modifying and removing tables. 6.3. Indices and views. 6.4. JDBC
- Unit 7: Database security management. 7.1. Legislation: Data protection. 7.2. Security levels, benefits, user control

Year: <b>2nd</b>	Course code: <b>9808001207</b>	Course: <b>Econometry (<i>Econometría</i>)</b>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1: Introduction to applied economic analysis: What is Econometrics used for? 1.1. Elements for the analysis. 1.2. The stages of econometric modelling. 1.3. Examples of econometric model application. 1.4. Software for econometric work.
- Unit 2: Simple linear regression model (SLRM). 2.1. Simple linear regression model specification (SLRM). 2.2. Ordinary least squares estimation method (OLS). 2.3. Normality, inference and goodness of fit. 2.4. Full example of estimation and inference.
- Unit 3: Sample problems in econometric analysis. 3.1. Multicollinearity: concept, causes, consequences and corrective action. 3.2. Full example of multicollinearity analysis. 3.3. Qualitative explanatory variables. ANOVA and ANCOVA models. 3.4. Full example of qualitative variable analysis.
- Unit 4: The effects of diversity and time: the estimated SLRM residue diagnosis. 4.1. The effect of diversity: heteroscedasticity. 4.2. Full example on heteroscedasticity. 4.3. The effect of time: autocorrelation. 4.4. Full example on autocorrelation.
- Unit 5: Forecasting and other uses of econometric models. 5.1. Forecasting with the simple linear regression model and the multicollinearity effect. 5.2. Full example on forecasting. 5.3. Forecasting with heteroscedasticity and autocorrelation. 5.4. Full example on heteroscedasticity and autocorrelation.

Year: <b>2nd</b>	Course code: <b>9808001208</b>	Course: <b>Statistical Analysis Tools (<i>Herramientas de análisis estadístico</i>)</b>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1. The use of statistical software to adjust statistical models.
- Unit 2. Tools and languages: SAS, Excel, R, Python, and others.

Year: <b>2nd</b>	Course code: <b>9808001209</b>	Course:	Program:	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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		<b>Ethics and Professional Efficiency</b> ( <i>Ética y eficacia profesional</i> )	<b>Bachelor's Degree in Business Management Based on Data Analysis</b>			
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Key skills to organising and managing work teams. 1.1. What are social skills? 1.2. Active listening and empathy. 1.3. Feedback. 1.4. Assertiveness.</li> <li>Unit 2: Introduction to the bibliographic searches: Identification, selection of sources and appointment management. 2.1. Foundations of information processing and their sources. 2.2. The use of technology in data and information processing. 2.3. Ethical dilemmas linked to information processing</li> <li>Unit 3: Ethical approaches in different fields of professional activity. 3.1. Introduction and history of ethics. 3.2. Justice. Human rights. 3.3. Ethics and Economic. 3.4. Ethics and Business. Corporate Social Responsibility</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9808001210</b>	Course: <b>Data Engineering I</b> ( <i>Ingeniería de datos I</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Foundations of data management in large volumes</li> <li>Unit 2. Non-conventional databases. NoSQL.</li> <li>Unit 3. Types of NoSQL databases and semi-structured data</li> <li>Unit 4. Introduction to Python and data engineering libraries</li> <li>Unit 5. Introduction to supervised and non-supervised classification</li> <li>Unit 6. Exploratory analysis techniques (clustering)</li> <li>Unit 7. Data mining processes</li> <li>Unit 8. Validation methods in the learning process</li> <li>Unit 9. Introduction to linear learning systems: case studies on linear regression and logistical regression</li> <li>Unit 10. Selection and extraction of characteristics: case studies on dimensionality reduction techniques (PCA, LDA)</li> <li>Unit 11. Inductive learning and decision trees: case study on automatic rule generation</li> <li>Unit 12. Introduction to deep learning</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9808001211</b>	Course: <b>Workshop. Financial Decision-Making</b> ( <i>Taller. Toma de decisiones financieras</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1: Analysis of a company's cost of capital and its effect on financial decision-making. Unit 2: Information on finances: main KPI and dashboard.</li> <li>Unit 3: Application of information management to an organisation's financial (case study).</li> <li>Unit 4: Applicable regulations to the financial sector (BCBS 239, RDA, and others).</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9808001301</b>	Course: <b>Data Structures</b> ( <i>Estructuras de Datos</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Linear Data Structures</li> <li>Unit 2. Hierarchical data structures</li> <li>Unit 3. Hash tables</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9808001302</b>	Course: <b>Data Engineering II</b> ( <i>Ingeniería de datos II</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to Probabilistic Learning</li> <li>Unit 2. Bayesian Classifier</li> <li>Unit 3. Bayesian Networks: A Case Study in Probabilistic Techniques</li> </ul>						

- Unit 4. Learning using ensembles
- Unit 5. Non-linear learning systems
- Unit 6. Advanced Sampling, Selection, and Feature Extraction Techniques
- Unit 7. Predictive Analytics: A Case Study in Predictive Techniques
- Unit 8. Advanced Visualization and Interpretation Techniques
- Unit 9. Case Studies: Machine Learning Applications to Business

Year: <b>3rd</b>	Course code: <b>9808001303</b>	Course: <b>Consumer Psychology</b> <i>(Psicosociología del consumidor)</i>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The purchase decision process.
- Unit 2. Perception.
- Unit 3. Learning Process: elements, theories, learning and marketing strategies.
- Unit 4. Motivation and needs.
- Unit 5. Consumer Attitudes: Role, Training, Measurement and Change.
- Unit 6. Culture and Marketing: concept, relationship, creation and cultural diffusion.
- Unit 7. Influence of social groups: characteristics and types of social groups.
- Unit 8. Neuromarketing.

Year: <b>3rd</b>	Course code: <b>9808001304</b>	Course: <b>Digital Ecosystem</b> ( <i>Ecosistema digital</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Origins and Fundamentals of the Internet
- Unit 2. The networked enterprise
- Unit 3. Information Systems
- Unit 4. E-commerce
- Unit 5. Digital Marketing
- Unit 6. Innovation Management
- Unit 7. Collaborative tools
- Unit 8. Latest Digital Trends
- Unit 9. Challenges for companies

Year: <b>3rd</b>	Course code: <b>9808001305</b>	Course: <b>Sustainable company (Green management) Empresa sostenible (green management)</b>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Sustainable management ("green management").
- Unit 2. Business and sustainability.
- Unit 3. The company in changing environments.
- Unit 4. Sustainable management of internal and external stakeholders.
- Unit 5. Ethics in business: levels of ethics.
- Unit 6. Ethical principles in decision-making.
- Unit 7. Corporate social responsibility.
- Unit 8. The company and the environment.

Year: <b>3rd</b>	Course code: <b>9808001306</b>	Course: <b>Human resources management</b> <i>(Gestión de Personas)</i>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Strategic management of human resources.
- Unit 2: New trends in human resources management.

- Unit 3: Design and organization of work.
- Unit 4: Strategic human resources planning.
- Unit 5: Onboarding Processes for New Employees: Recruitment and Selection.
- Unit 6: Compensation and benefits systems.
- Unit 7: Managing the process of disengagement

Year: <b>3rd</b>	Course code: <b>9808001307</b>	Course: <b>Internet of Things</b> ( <i>Internet de las cosas (IoT)</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1. Introduction to the Internet of Things
- Unit 2. IoT Strategies & Solutions
- Unit 3. Structural Analysis of IoT Devices
- Unit 4. IoT-based business models
- Unit 5. Smart Cities
- Unit 6. Data Collection, Networking, and Communications
- Unit 7. Security and legal aspects.
- Unit 8. Data processing

Year: <b>3rd</b>	Course code: <b>9808001308</b>	Course: <b>Strategic management</b> ( <i>Dirección Estratégica</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1 Introduction to Strategic Management and Corporate Strategy
- Unit 2 The orientation of the company: Mission, Vision, Shared Values.
- Unit 3 Analysis of the general environment.
- Unit 4 Analysis of the specific environment.
- Unit 5 Internal analysis.

Year: <b>3rd</b>	Course code: <b>9808001309</b>	Course: <b>New work and organization methodologies</b> ( <i>Nuevas metodologías de trabajo y organización</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1: Traditional and new organizational models.
- Unit 2: Exponential organizations.
- Unit 3: Tribal organizations.
- Unit 4: Centres of excellence.
- Unit 5: Collaborative and transdisciplinary models.
- Unit 6: "Agile, Scrum, Kanban and Scrumban" methodologies
- Unit 7: Analysis of success stories in new organizational models

Year: <b>3rd</b>	Course code: <b>9808001310</b>	Course: <b>Workshop: Decision Making in Human Resources</b> ( <i>Taller. Toma de decisiones de recursos humanos</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1: Organizational models and their new trends.
- Unit 2: HR Forecasting Plan
- Unit 3: Analysis, description and evaluation of jobs.
- Unit 4: Qualitative job evaluation.
- Unit 5: Quantitative job evaluation.
- Unit 6: Assessment by factors and grades.

- Unit 7: Job Profile/Candidate Description.
- Unit 8: Development of psychometric and professional assessment methodologies.

Year: <b>3rd</b>	Course code: <b>9808001311</b>	Course: <b>Impact and relational influence</b> <i>(Impacto e influencia relacional)</i>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Public communication. 1.1. Public Speaking Techniques. 1.2. Professional Presentations. 1.3. Non-verbal communication. 1.4. Emotional communication. 1.5 Social skills</li> <li>• Unit 2. Techniques for Impact. 2.1. Persuasive communication. 2.2. Positive impact on the work and personal environment. 2.3. The Power of Conversation. 2.4. Influence in the relational realm</li> <li>• Unit 3. Techniques to Be Highly Effective. 3.1. Manage change. 3.2. Manage resources. 3.3. Team Roles. 3.4. Continuous improvement</li> <li>• Unit 4. Habits for Influencing. 4.1. Resilience. 4.2. Emotional Intelligence. 4.3. Influencing Effects</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9808001312</b>	Course: <b>Complex Problem Solving</b> <i>(Resolución de problemas complejos)</i>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction: Complex Problem Resolution</li> <li>• Unit 2. Problem solving methodologies</li> <li>• Unit 3. Impact of decision analysis</li> <li>• Unit 4. Division of the problem and analysis of relationships among elements</li> <li>• Unit 5. Scenarios</li> <li>• Unit 6. Preview and conflict management</li> </ul>						

Year: <b>4th</b>	Course code: <b>9808001401</b>	Course: <b>CRM Tools</b> <i>(Herramientas de CRM)</i>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. CRM Basics: Introduction to CRM</li> <li>• Unit 2. CRM fundamentals.</li> <li>• Unit 3. Project Management and CRM Tools.</li> <li>• Unit 4. Advanced Client Management</li> <li>• Unit 5. Introduction to Salesforce</li> </ul>						

Year: <b>4th</b>	Course code: <b>9808001402</b>	Course: <b>Internet Data Analysis</b> <i>(Análisis de datos de Internet)</i>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Principles of Internet User Behavior Analysis ("Web Analytics")</li> <li>• Unit 2. Analysis of traces on the Internet, such as logs or cookies.</li> <li>• Unit 3. User behavior on the Internet: access, browsing, time spent on the Internet. the sites.</li> <li>• Unit 4. User behavior analysis tools, such as Google Analytics, Amplitude</li> </ul>						

Year: <b>4th</b>	Course code: <b>9808001403</b>	Course: <b>Entrepreneurial leadership</b> <i>(Liderazgo emprendedor)</i>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Universal Leadership. 1.1. Introduction to the concept . 1.2. Fundamentals of Leadership . 1.3. Types of Leadership . 1.4. Models</li> </ul>						



- Unit 2. Leadership Styles . 2.1. Situational Leadership . 2.2. The Transformative Vision . 2.3. Risk, change and novelty . 2.4. The Leader's Communication
- Unit 3. Entrepreneurship & Leadership. 3.1. Personal Branding . 3.2. The Laws of the Entrepreneur. 3.3. Proactivity in entrepreneurship. 3.4. Entrepreneurial Ideas and Leaders
- Unit 4. The Complexity of Organizations. 4.1. Diversity management. . 4.2. Knowledge management. 4.3. Conflict management and negotiation. 4.4 Global Complexity in Organizations

Year: <b>4th</b>	Course code: <b>9808001404</b>	Course: <b>Law applied to data processing</b> ( <i>Derecho aplicado al tratamiento de datos</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Origin and Basis of Data Protection. Institutions.
- Unit 2. Specially protected data.
- Unit 3. Rights of Access, Rectification, Cancellation and Opposition.
- Unit 4. International Transfer of Personal Data. Privacy Shield.
- Unit 5. Origin and Foundation of Cybersecurity. National Cybersecurity Policy.
- Unit 6. Regulations applicable to cybersecurity and institutions dedicated to cybersecurity.

Year: <b>4th</b>	Course code: <b>9808001405</b>	Course: <b>Business Law (Derecho de la empresa)</b>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. The legal norm and its effects Notion of Law. 1.1.The sources of law. 1.2. Other sources of law. 1.3. Effects of the legal rule.
- Unit 2. Subjects of legal and business activity. The natural person I. 2.1.The natural person II. 2.2.The legal person.
- Unit 3. Purpose of the legal and business activity The contract. 3.1. Civil and commercial contracts. 3.2. Specialties: consumer and user law. Representation.
- Unit 4. General Part: Commercial Law, Company Law. 4.1. Corporation.

Year: <b>4th</b>	Course code: <b>9808001406</b>	Course: <b>Data cycle (El ciclo del dato)</b>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1: Data Governance or Data Management Planning Data Management Control
- Unit 2: Data Architecture Management or Architecture: Definition and Design. 2.1. Maintenance . 2.2. Enlargement
- Unit 3: Data Development o Data Modeling, Solution Analysis and Design o Data Design detailed. 3.1.Data Model & Quality. 3.2. Management Design. 3.3. Data Implementation
- Unit 4: Data Operations Management or DB Support. 4.1. Data Technology Management
- Unit 5: Data Security Management. 5.1.Needs & Requirements . 5.2. Security Policies, Standards, Controls, and Procedures. 5.3.Managing Users, Roles, Views, and Permissions
- Unit 6: Data Quality Management. 6.1. Data Quality Requirements. 6.2. Data profiling, analysis and evaluation . 6.3. KPI's or Business Rules
- . 6.4. Design and implementation of the DQM

Year: <b>4th</b>	Course code: <b>9808001407</b>	Course: <b>Information sources (Fuentes de información)</b>	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1: Managing Teachers and Referrals. Understanding needs and integration or Understanding Sources and Suppliers. 1.1. Architecture Definition . 1.2. Management Solutions
- Unit 2: Warehousing, Business Intelligence Management. 2.1. Viewing the data . 2.2. Architecture definition and maintenance. 2.3. DW/DM Implementation. 2.4. Architecture Maintenance
- Unit 3: Document and Content Management. 3.1. Document/Records Management. 3.2. Content Management

- Unit 4: Metadata Management. 4.1. Requirements . 4.2. Metadata Architecture Definition o Standard Development an. 4.3. Maintenance . 4.4. Metadata Integration. 4.5. Repository Management or Queries, Reports, and Analytics

Year: <b>4th</b>	Course code: <b>9808001408</b>	Course: <b>Entrepreneurship and innovation</b> ( <i>Innovación y emprendimiento</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Entrepreneurship and innovation.</li> <li>Unit 2. Orientation and operational functioning of companies.</li> <li>Unit 3. Methodologies for the selection of entrepreneurship projects.</li> <li>Unit 4. Business plan, business canvas and other planning tools.</li> <li>Unit 5. Processing and commissioning.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9808001409</b>	Course: <b>Sectors information</b> ( <i>La información en los sectores</i> )	Program: <b>Bachelor's Degree in Business Management Based on Data Analysis</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Economic sectors. 1.1. Types. 1.2. Characteristics</li> <li>Unit 2. B2B Business. 2.1. The Business to Business.B2B Demand. 2.2. Segmentation. The B2B Buyer. 2.3. Customer Journey. Touchpoints B2B. 2.4.- Competitive advantages. 2.5. Information in industrial sectors. Map</li> <li>Unit 3. B2C Business. 3.1. The Business to Consumer demand. B2C. 3.2. Segmentation. The B2C Buyer. 3.3. Customer Journey. Touchpoints B2C. 3.4. Competitive Advantages. 3.5. Information in the FMCG sectors. Map</li> <li>Unit 4. Other Sectors</li> </ul>						

## Bachelor's Degree in Marketing (*Grado en Marketing*) (**Spanish**)

<b>1</b>	<b>9828002101</b>	<b>Entorno económico</b>	<b>Semestre 1 / Fall Term</b> ( <del>Sept</del> -Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9828002102</b>	<b>Estadística</b>	<b>Semestre 1 / Fall Term</b> ( <del>Sept</del> -Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9828002103</b>	<b>Gestión de la empresa</b>	<b>Semestre 1 / Fall Term</b> ( <del>Sept</del> -Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9828002104</b>	<b>Herramientas Creativas y de Producción-I</b>	<b>Semestre 1 / Fall Term</b> ( <del>Sept</del> -Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9828002105</b>	<b>Introducción al Marketing</b>	<b>Semestre 1 / Fall Term</b> ( <del>Sept</del> -Jan)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9828002106</b>	<b>Psicosociología del Consumidor</b>	<b>Semestre 2 / Spring Term</b> (Jan -Jun)		<b>Español</b>	<b>6</b>

Year: <b>1st</b>	Course code: <b>9828002107</b>	Course: <b>UEM General competencies I: Professional and personal efficiency</b> ( <i>Competencias Generales UEM I: Eficacia personal y profesional</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Personal and professional effectiveness.</li> <li>Unit 2. Interpersonal skills.</li> <li>Unit 3. Communication skills.</li> <li>Unit 4. Emotional intelligence. Self-motivation competencies.</li> <li>Unit 5. Mindfulness</li> </ul>						
<b>Specific competences:</b>						

- SC06: Ability to produce effective messages, using the right channels and adapting to the target audience.
- SC07: Knowledge of the technical tools used in market surveys, using them to inform decision-making processes.
- SC08: Ability to listen to and understand the arguments used in proposals and the needs expressed by internal and external customers.
- SC10: Ability to lead and energise creative sessions, steering them towards the design of actions.
- SC13: Ability to analyse economic and market data, with the ability to decide which information is relevant and how it can be used, forming accurate conclusions.
- SC20: Ability to adapt to changing functions, in a digital, connected and global environment.
- SC22: Being rigorous in the justification of marketing proposals, using objective data and avoiding subjectivity and bias.

1	9828002108	Investigación de Mercados I	Semestre 2 / Spring Term (Jan – Jun)		Español	6
1	9828002109	Distribución Comercial I	Semestre 2 / Spring Term (Jan – Jun)		Español	6
1	9828002110	Comunicación de Marketing I	Semestre 2 / Spring Term (Jan – Jun)		Español	6

Year: <b>2nd</b>	Course code: <b>9828002201</b>	Course: <b>Product and Service Management (Gestión de Producto y Servicio)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Consumer goods: context, definitions and basic concepts
- Unit 2. Product management and marketing
- Unit 3. Management and marketing of services
- Unit 4. Development of new market offers
- Unit 5. Processes of innovation in services

**Specific competences:**

- SC01: Ability to understand the marketing function, its role in achieving a company's strategic objectives and its position within the core functions of a company.
- SC02: Ability to understand how marketing actions should be designed based on optimal use of the marketing mix.
- SC14: Ability to integrate into the design of different marketing solutions (including products, communication pieces, etc.) respect for essential values such as the culture of peace, democratic values, gender equality, equal opportunities and universal accessibility for people with disabilities.

Year: <b>2nd</b>	Course code: <b>9828002202</b>	Course: <b>Oral and Written Communication Skills (Habilidades de Comunicación Oral y Escrita)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. General principles of communication skills.
- Unit 2. Oral and written communication skills: comprehension, expression and interaction activities.
- Unit 3. Oral and written conscious communication and mindfulness.
- Unit 4. Sociocultural aspects of language use.
- Unit 5. Phonological, morphosyntactic and semantic aspects of the Spanish language.
- Unit 6. Types and forms of oral and written texts: analysis and production.

**Specific competences:**

- SC06: Ability to produce effective messages, using the right channels and adapting to the target audience.
- SC15: Ability to combine creative and analytical thinking in the creation of marketing proposals, especially in the creation of advertising material.
- SC20: Ability to adapt to changing functions, in a digital, connected and global environment.

Year: <b>2nd</b>	Course code: <b>9828002203</b>	Course: <b>Finance for Marketing (Finanzas para el marketing)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Introduction to financial management: business decisions and value creation.
- Unit 2: Financial management tools: a company's financial statements.
- Unit 3: A company's investments decisions: temporary value of money, free cash flow calculation.
- Unit 4: Main methods of analysis (NPV, IRR, payback).
- Unit 5: A company's financing decisions: operational finance and structural finance. Cost of capital.

**Specific competences:**

- SC03: Ability to analyse and summarise the findings of market research reports and studies and use them as the basis of marketing decisions.
- SC07: Ability to apply the technical tools used in market surveys and to use them to inform decision-making processes, while respecting fundamental rights and gender equality.
- SC12: Ability to interpret the return on each investment made in marketing, seeking to improve the department's profitability.
- SC13: Ability to analyse economic and market data, with the ability to decide which information is relevant and how it can be used, forming accurate conclusions.
- SC19: Ability to independently assess and select data in order to provide specific information, clearly distinguishing between sources from companies and the environment.
- SC23: Ability to monitor the technological environment and its impact on the marketing sector.
- SC24: Ability to work in multidisciplinary teams of people from different operating areas of a company and to achieve from these experiences the resources required in each situation.

Year: <b>2nd</b>	Course code: <b>9828002204</b>	Course: <b>Creative &amp; Production Tools II</b> ( <i>Herramientas Creativas y de Producción II</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1 Study and practice of the basic tools for scripting content, develop ideas related to audiovisual storytelling and organize flow work. 1.1 The idea and the medium - where and how. 1.2 Types of Ads. 1.3 Storytelling (Aristotelian structure). 1.4 Creative Techniques - Creativity Methods – Brainstorming and Moodboards. 1.5 Pitching ideas – presentations. Advertising treatments, client presentations
- Unit 2 Studying the evolution of audiovisual content trends aimed at marketing in general. 2.1 The advertising script. 2.2 Audiovisual narrative: general concepts - figures of speech. 2.3 Production planning (Technical script, story board, structure.
- Unit 3 Studying and practicing video recording and editing tools video & audio. 3.1 Introduction to the Da Vinci Video Editing Tool. 3.2 Audio concepts in Da Vinci (voice-over, music)

**Specific competences:**

- SC06: Ability to apply the communication concepts required to produce effective messages, using the right channels and adapting to the target audience.
- SC09: Ability to recognise the fundamental aspects of brand development and the development of their associated products.
- SC15: Ability to apply a combination of creative and analytical thinking in the creation of marketing proposals, especially in the creation of advertising material, respecting fundamental rights and the culture of peace.

Year: <b>2nd</b>	Course code: <b>9828002205</b>	Course: <b>Brand Strategy (Estrategias de Marca)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Strategic and creative brand planning. Strategic and creative importance of branding in an organisation.
- Unit 2. Analysis of brand value and its associated creative processes within organisations, studying the various concepts that make up a brand.
- Unit 3. Concept of branding. Brand-building and the processes involved in creating a brand.
- Unit 4. Marketing and strategic brand communication.
- Unit 5. Global strategic planning

**Specific competences:**

- SC01: Ability to understand the function of brand strategy, its role in achieving a company's strategic objectives and its position within the core functions of a company.
- SC02: Ability to understand how brand strategy plans should be designed based on optimal knowledge of the target group and the company's competitive environment.

- SC06: Ability to apply the communication concepts required to produce effective messages, using the right channels and adapting to the target audience. Knowledge of the concept of consumer insight and its application to brand strategy.
- SC19: Ability to independently assess and select data in order to provide specific information, clearly distinguishing between sources from companies and the environment.

Year: <b>2nd</b>	Course code: <b>9828002206</b>	Course: <b>Marketing Communication II</b> ( <i>Comunicación de Marketing II</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Principles of communication</li> <li>• Unit 2. Communication in marketing</li> <li>• Unit 3. Advertising</li> <li>• Unit 4. Public relations</li> <li>• Unit 5. Sponsorship</li> <li>• Unit 6. Direct marketing</li> <li>• Unit 7. Retail staff</li> <li>• Unit 8. Sales promotion</li> <li>• Unit 9. New forms of communication</li> </ul>						
<b>Specific competences:</b>						
<ul style="list-style-type: none"> <li>• SC06: Ability to apply the communication concepts required to produce effective messages, using the right channels and adapting to the target audience.</li> <li>• SC09: Ability to recognise the fundamental aspects of brand development and the development of their associated products.</li> <li>• SC12: Ability to recognise the theoretical and practical concepts of advertising strategy and to apply this knowledge in the development of advertising strategy.</li> <li>• SC14: Ability to recognise the role of new technology in global society and to understand how it is used in advertising to reach consumers.</li> <li>• SC15: Ability to apply a combination of creative and analytical thinking in the creation of marketing proposals, especially in the creation of advertising material, respecting fundamental rights and the culture of peace.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9828002207</b>	Course: <b>UEM General competencies II: Influence and relational impact</b> ( <i>Competencias Generales UEM II: Influencia e impacto relacional</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1: Definition of influence and relational impact and the evolution of relationship and influence marketing. 1.1 Global environment and business challenges, the customer at the centre. 1.2. The importance of relationship marketing. 1.3. Influence and relational impact with different target audiences (customers, employees...)</li> <li>• Unit 2: Conceptualisation of relationship and influence marketing and schools of thought. 2.1 From transactional marketing to relationship marketing. 2.2 Basic concepts (direct marketing, one-to-one marketing, internal marketing, LTV, loyalty, CRM, CEM, customer experience and employee experience...). 2.3 Schools of thought</li> <li>• Unit 3: Methodological analysis of the concept of influence and relational impact. 3.1 Customer loyalty and management model: knowledge and segmentation (CRM), communication, designing experiences, loyalty and measuring. 3.2 CRM. Its role in companies. Strategy, technology, implementation and measuring. 3.3 ART model</li> <li>• Unit 4: Customer loyalty strategy. 4.1 Real knowledge of the customer and design of the customer experience: tools and models (customer centricity and customer journey) . 4.2 Integrating social media into relationship marketing strategies. 4.3 Omnichannel strategy and new trends in relationship marketing</li> <li>• Unit 5: Relationship and influence marketing schemes.. 5.1 Schemes and tools (customer loyalty, rewards, ambassadors, gamification...). 5.2 Real experiences (airline companies, hotels, petrol stations).</li> </ul>						
<b>Specific competences:</b>						
<ul style="list-style-type: none"> <li>• SC06: Ability to apply the communication concepts required to produce effective messages, using the right channels and adapting to the target audience.</li> <li>• SC08: Ability to analyse the arguments presented in briefings and transform them into marketing actions.</li> <li>• SC20: Ability to select the most suitable communication and marketing mix tools for a digital, highly global and connected environment.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9828002209</b>	Course: <b>Price Management (Gestión de Precio)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Nature and importance of price</li> <li>Unit 2. Pricing objectives in marketing strategy</li> <li>Unit 3. Factors determining price: costs, consumer, competition</li> <li>Unit 4. Procedures for determining prices</li> <li>Unit 5. Price strategies and policies</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC01: Ability to understand the marketing function, its role in achieving a company's strategic objectives and its position within the core functions of a company.</li> <li>SC02: Ability to understand how marketing actions should be designed based on optimal use of the marketing mix.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9828002210</b>	Course: <b>Commercial Distribution (Distribución Comercial II)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. The Consumer at the Point of Sale, Online and Offline</li> <li>Unit 2. Channel and Point of Sale Marketing Techniques</li> <li>Unit 3. Category Management</li> <li>Unit 4. Merchandising</li> <li>Unit 5. Point of Sale Promotional Marketing</li> <li>Unit 6. Technologies applied to retail management</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC01: Ability to understand the marketing function, its role in achieving a company's strategic objectives and its position within the core functions of a company.</li> <li>SC02: Ability to understand how marketing actions should be designed based on optimal use of the marketing mix.</li> <li>SC26: Ability to select and apply the most suitable technologies for each marketing activity.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9828002211</b>	Course: <b>Commercial and Sales Management (Dirección Comercial y Ventas)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. The selling function</li> <li>Unit 2. Negotiation with purchasing groups. Sales teams</li> <li>Unit 3. Stages of a sales meeting</li> <li>Unit 4. Sales techniques: asking and listening, negotiation and objections</li> <li>Unit 5. Knowing our customer: body language and Neuro-Linguistic Programming (NLP)</li> <li>Unit 6. Organisation and sales planning. Sales engineering</li> <li>Unit 7. Sales control</li> <li>Unit 9. Evaluation</li> <li>Unit 10. Sales force remuneration</li> <li>Unit 11. Online selling</li> <li>Unit 12. Ethical aspects of selling</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC04: Ability to identify and assess consumer needs in order to design procedures and create products and solutions that channel demand towards the products and services supplied by brands.</li> <li>SC06: Ability to apply the communication concepts required to produce effective messages, using the right channels and adapting to the target audience.</li> <li>SC11: Ability to understand and apply the concept of "customer orientation" as the cornerstone of all proposed marketing actions.</li> </ul>						

Year: <b>3rd</b>	Course code:	Course:	Program:	Term: <b>Semester 1</b>	Teaching Language:	Cr:
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	<b>9828002301</b>	<b>People Management</b> ( <i>Gestión de Personas</i> )	<b>Bachelor's Degree in Marketing</b>		<b>Spanish</b>	<b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Group and intergroup needs.</li> <li>Unit 2. Mindfulness method in people management.</li> <li>Unit 3. Quantitative and qualitative recruitment procedures.</li> <li>Unit 4. People management skills.</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC08 – Ability to analyse the arguments presented in briefings and transform them into marketing actions.</li> <li>SC10 – Ability to apply techniques that allow them to lead and energise creative sessions, guiding them towards the design of actions that uphold democratic values.</li> <li>SC17 – Ability to organise work to ensure fulfilment of the established milestones, correctly estimating the time needed to complete the actions proposed in the marketing plan.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9828002302</b>	Course: <b>E-Commerce</b> ( <i>Comercio Electrónico</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Introduction to e-commerce.</li> <li>Unit 2. Security in e-commerce.</li> <li>Unit 3. Information management.</li> <li>Unit 4. Electronic payment systems.</li> <li>Unit 5. Electronic copyright protection systems.</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC04. Ability to identify and assess consumer needs in order to design procedures and create products and solutions that channel demand towards the products and services supplied by brands.</li> <li>SC22. Being rigorous in the justification of marketing proposals, using objective data and avoiding subjectivity and bias.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9828002303</b>	Course: <b>Digital Ecosystem</b> ( <i>Ecosistema Digital</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Technological thinking</li> <li>Unit 2. Origin and fundamentals of the Internet</li> <li>Unit 3. The Internet as a communication media</li> <li>Unit 4. The Internet as a business</li> <li>Unit 5. Top digital trends</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>SC06. Ability to organise information and other key content by order of importance, and the resources required to address this content.</li> <li>SC20. Ability to select the most suitable communication and marketing mix tools for a digital, highly global and connected environment.</li> <li>SC22. Being rigorous in the justification of marketing proposals, using objective data and avoiding subjectivity and bias.</li> <li>SC23. Knowledge of communication needs in a business environment.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9828002304</b>	Course: <b>UEM General Competencies III. Entrepreneurial Leadership</b> ( <i>Competencias Generales UEM III: Liderazgo emprendedor</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>Unit 1. Conceptual and experiential bases of team learning.</li> <li>Unit 2. Being part of a leadership team.</li> <li>Unit 3. Being part of an entrepreneurial team.</li> <li>Unit 4. Mindfulness in leaders: conscious leadership. Unit 5. Managerial and entrepreneurial skills.</li> <li>Unit 6. Efficient entrepreneurship methodology: an applied practical model.</li> </ul> <b>Specific competences:</b>						

- SC06: Ability to apply the communication concepts required to produce effective messages, using the right channels and adapting to the target audience.
- SC08: Ability to analyse the arguments presented in briefings and transform them into marketing actions.
- SC10: Ability to apply techniques that allow them to lead and energise creative sessions, steering them towards the design of actions that uphold democratic values.
- SC16: Ability to design and apply a company's corporate and competitive strategies to marketing actions.
- SC17: Ability to organise work to ensure fulfilment of the established milestones, correctly estimating the time needed to complete the actions proposed in the marketing plan.
- SC22: Being rigorous in the justification of marketing proposals, using objective data and avoiding subjectivity and bias.

Year: <b>3rd</b>	Course code: <b>9828002305</b>	Course: <b>Digital Tools (Herramientas Digitales)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Research. Listening tools: Google Alerts, Google Trends, Google Analytics, Similarwebs</li> <li>• Unit 2. Strategy and action: Media</li> <li>• Own Means, Noise Methods and Payment Methods: Web development tools: wordpress, wix, etc; Web heatmaps; Emailing; Blogs; Ads (Google, FB and Insta); SEO</li> <li>• Unit 3. Implementation and monitoring: Retroplanning Gantt; Paid Campaign Reports; Google Analytics; Digital mkg tracking dashboard.</li> </ul>						
<b>Specific competences:</b>						
<ul style="list-style-type: none"> <li>• SC06: Ability to apply the communication concepts required to produce effective messages, using the right channels and adapting to the target audience.</li> <li>• SC25: Ability to apply new trends in business management, such as knowledge and innovation management, which allow for greater professional development and commercial success.</li> <li>• SC26: Ability to select and apply the most suitable technologies for each marketing activity.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9828002306</b>	Course: <b>Data Engineering (Ingeniería de datos)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction</li> <li>• Unit 2. Business intelligence</li> <li>• Unit 3. Dashboards KPIs</li> <li>• Unit 4. Business intelligence strategy</li> <li>• Unit 5. Data mining</li> <li>• Unit 6. Data analysis tools: Tableau Desktop</li> <li>• Unit 7. Dashboards: Excel</li> </ul>						
<b>Specific competences:</b>						
<ul style="list-style-type: none"> <li>• SC03: Ability to analyse and summarise the findings of market research reports and studies and use them as the basis of marketing decisions.</li> <li>• SC07: Ability to apply the technical tools used in market surveys and to use them to inform decision-making processes, while respecting fundamental rights and gender equality.</li> <li>• SC13: Ability to analyse economic and market data, with the ability to decide which information is relevant and how it can be used, forming accurate conclusions.</li> <li>• SC16: Ability to design and apply a company's corporate and competitive strategies to marketing actions.</li> <li>• SC24: Ability to work in multidisciplinary teams of people from different operating areas of a company and to achieve from these experiences the resources required in each situation.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9828002307</b>	Course: <b>Strategical marketing (Marketing Estratégico)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to the marketing environment.</li> <li>• Unit 2. Consumer Demand and Industrial Demand.</li> <li>• Unit 3. Consumer Buying Behavior</li> <li>• Unit 4. Market segmentation.</li> <li>• Unit 5. Positioning</li> </ul>						



Year: <b>3rd</b>	Course code: <b>9828002308</b>	Course: <b>Neuromarketing</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Physiology of the brain: the triune brain
- Unit 2. Decision-making: emotions vs. rationality
- Unit 3. Research techniques with neuroscience
- Unit 4. Application of neuroscience to marketing mix variables: product, distribution and price
- Unit 5. Ethical implications

**Specific competences:**

- SC01: Ability to understand the marketing function, its role in achieving a company's strategic objectives and its position within the core functions of a company.
- SC04: Ability to identify and assess consumer needs in order to design procedures and create products and solutions that channel demand towards the products and services supplied by brands.
- SC25: Ability to apply new trends in business management, such as knowledge and innovation management, which allow for greater professional development and commercial success.
- SC26: Ability to select and apply the most suitable technologies for each marketing activity.

Year: <b>4th</b>	Course code: <b>9828002405</b>	Course: <b>Marketing planning/Marketing workshop (Plan de Marketing / Taller de Marketing)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Fundamental Concepts of Strategic Marketing
- Unit 2. Phases of the process of preparing a Marketing Plan. 2.1. Current situation analysis phase. 2.2. Diagnostic phases: SWOT analysis, identification of competitive advantages. 2.3. Definition of General-Specific Objectives Phase. 2.4. Marketing Strategies and Action Plan Phase. 2.5. Proposal of the Control Plan
- Unit 3. New Persuasive Ways of Presenting Business Models

Year: <b>4th</b>	Course code: <b>9828002406</b>	Course: <b>New Marketing Trends: Experiential Marketing (Nuevas tendencias del marketing: Marketing experiencial)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Sensory experience
- Unit 2. Emotion: concept and types
- Unit 3. Brand and customer experience
- Unit 4. Customer life cycle, points of contact, moments of truth
- Unit 5. Measuring customer experience
- Unit 6. Managing customer experience

**Specific competences:**

- SC16: Ability to select the best form of strategic planning, for marketing and sales, to be used in markets and companies operating in global and interdependent environments.
- SC25: Ability to apply new trends in business management, such as knowledge and innovation management, which allow for greater professional development and commercial success.

Year: <b>4th</b>	Course code: <b>9828002407</b>	Course: <b>International Marketing (Marketing Internacional)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to international marketing
- Unit 2. Analysis of the international marketing environment
- Unit 3. Market research and sources of information for international marketing
- Unit 4. Segmentation and positioning in international markets
- Unit 5. Decisions of the marketing mix
- Unit 6. Foreign trade operations

**Specific competences:**

- SC01: Ability to understand the marketing function, its role in achieving a company's strategic objectives and its position within the core functions of a company.
- SC02: Ability to understand how marketing actions should be designed based on optimal use of the marketing mix.
- SC03: Ability to analyse and summarise the findings of market research reports and studies and use them as the basis of marketing decisions.
- SC04: Ability to identify and assess consumer needs in order to design procedures and create products and solutions that channel demand towards the products and services supplied by brands.
- SC05: Ability to understand the role of marketing in a company's strategic planning process (mission – vision – values – strategies – action plan – marketing plan).
- SC12: Ability to interpret the return on each investment made in marketing, seeking to improve the department's profitability.
- SC13: Ability to analyse economic and market data, with the ability to decide which information is relevant and how it can be used, forming accurate conclusions.
- SC14: Ability to integrate into the design of different marketing solutions (including products, communication pieces, etc.) respect for essential values such as the culture of peace, democratic values, gender equality, equal opportunities and universal accessibility for people with disabilities.
- SC19: Ability to independently assess and select data in order to provide specific information, clearly distinguishing between sources from companies and the environment.
- SC22: Being rigorous in the justification of marketing proposals, using objective data and avoiding subjectivity and bias.
- SC23: Ability to monitor the technological environment and its impact on the marketing sector

Year: <b>4th</b>	Course code: <b>9828002807</b>	Course: <b>Business Law (<i>Derecho de la Empresa</i>)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Objective/subjective law</li> <li>• Unit 2. Branches and sources of law</li> <li>• Unit 3. Legal status of the entrepreneur and the enterprise</li> <li>• Unit 4. Registering a business</li> <li>• Unit 5. Industrial property: industrial creations and distinctive signs</li> <li>• Unit 6. Partnerships and corporations: introduction to company law and types of companies</li> <li>• Unit 7. Choosing a legal structure</li> <li>• Unit 8. Incorporation, operation and dissolution of companies</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>• SC24: Ability to work in multidisciplinary teams of people from different operating areas of a company and to achieve from these experiences the resources required in each situation.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9828002814</b>	Course: <b>Creativity Lab (<i>Laboratorio de Creatividad</i>)</b>	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b> <ul style="list-style-type: none"> <li>• Unit 1. Work structure</li> <li>• Unit 2. Setting campaign goals</li> <li>• Unit 3. Case studies</li> <li>• Unit 4. Creative phase: proposing alternatives, filtering and selecting</li> <li>• Unit 5. Creating campaign pieces</li> <li>• Unit 6. Media plan</li> <li>• Unit 7. Impact estimation and budget</li> </ul> <b>Specific competences:</b> <ul style="list-style-type: none"> <li>• SC08: Ability to analyse the arguments presented in briefings and transform them into marketing actions.</li> <li>• SC11: Ability to understand and apply the concept of "customer orientation" as the cornerstone of all proposed marketing actions.</li> <li>• SC14: Ability to integrate into the design of different marketing solutions (including products, communication pieces, etc.) respect for essential values such as the culture of peace, democratic values, gender equality, equal opportunities and universal accessibility for people with disabilities. The initiative and communication skills required to interact with other areas of a company to achieve the necessary resources in each situation.</li> </ul>						

- SC15: Ability to apply a combination of creative and analytical thinking in the creation of marketing proposals, especially in the creation of advertising material, respecting fundamental rights and the culture of peace.
- SC16: Ability to design and apply a company's corporate and competitive strategies to marketing actions.

Year: <b>4th</b>	Course code: <b>9828002815</b>	Course: <b>Strategic advertising planning</b> ( <i>Planificación estratégica publicitaria</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. The strategy concept and its historical background.
- Unit 2. The advertising strategy and its use in advertising.
- Unit 3. The figure of the strategic planner (role and responsibilities).
- Unit 4. Planning and planning methods.
- Unit 5. The need for strategic planning in advertising agencies.
- Unit 6. Developing the research process.
- Unit 7. Preparing the strategy: choosing the concept, actions, time frames, formats, channels, etc.
- Unit 8. The copy strategy.
- Unit 9. The budget.

**Specific competences:**

- SC06: Ability to apply the communication concepts required to produce effective messages, using the right channels and adapting to the target audience.
- SC08: Ability to analyse the arguments presented in briefings and transform them into marketing actions.
- SC11: Ability to understand and apply the concept of "customer orientation" as the cornerstone of all proposed marketing actions.
- SC12: Ability to interpret the return on each investment made in marketing, seeking to improve the department's profitability.
- SC14: Ability to integrate into the design of different marketing solutions (including products, communication pieces, etc.) respect for essential values such as the culture of peace, democratic values, gender equality, equal opportunities and universal accessibility for people with disabilities.
- SC15: Ability to apply a combination of creative and analytical thinking in the creation of marketing proposals, especially in the creation of advertising material, respecting fundamental rights and the culture of peace.
- SC16: Ability to design and apply a company's corporate and competitive strategies to marketing actions.

Year: <b>4th</b>	Course code: <b>9828002816</b>	<b>Procesos de trabajo en agencia de publicidad</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>		<b>Español</b>	<b>6</b>
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Year: <b>4th</b>	Course code: <b>9828002817</b>	Course: <b>Business Simulation</b> ( <i>Simulación Comercial</i> )	Program: <b>Bachelor's Degree in Marketing</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Production decisions
- Unit 2. Price decisions
- Unit 3. Communication decisions
- Unit 4. Distribution decisions
- Unit 5. Interpreting market research
- Unit 6. Financial decisions

**Specific competences:**

- SC04: Ability to identify and assess consumer needs in order to design procedures and create products and solutions that channel demand towards the products and services supplied by brands.
- SC08: Ability to analyse the arguments presented in briefings and transform them into marketing actions.
- SC11: Ability to understand and apply the concept of "customer orientation" as the cornerstone of all proposed marketing actions.

## Bachelor's Degree in Journalism (Grado en Periodismo) (Spanish)

1	9980002101	Teoría de la Comunicación	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9980002102	Tecnología Audiovisual	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9980002103	Edición de video	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9980002104	Edición y Diseño gráfico	Semestre 2 / Spring Term (Jan–Jun)		Español	6
1	9980002105	Historia de los Medios	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9980002106	Introducción a la Fotografía	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9980002107	Historia del Mundo Actual	Semestre 1 / Fall Term (Sept–Jan)		Español	6

Year: 1st	Course code: <b>9980002108</b>	Course: <b>Languages and Communication media</b> ( <i>Lengua y Medios de Comunicación</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1: Language and Thought
- Unit 2: Language and Style
- Unit 3: Language and image
- Unit 4: The Rhetoric of Journalism
- Unit 5. Language and society

1	9980002109	Redacción Periodística: Textos para la Información	Semestre 1 / Fall Term (Sept–Jan)		Español	6
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Year: 1st	Course code: <b>9980002110</b>	Course: <b>Ethics and professional efficiency</b> ( <i>Ética y eficacia profesional</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Ethical approaches in the different spheres of professional activity.
- Unit 2. Autonomous learning and self-regulation in personal life and professional practice.
- Unit 3. Keys to organize and manage teamwork.

Year: 2nd	Course code: <b>9980002201</b>	Course: <b>Photojournalism</b> ( <i>Fotoperiodismo</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1 Introduction to Photojournalism
- Unit 2 The protagonists of the history of photojournalism:
- Unit 3 Photographic techniques for photojournalism
- Unit 4 Photojournalistic Genres
- Unit 5 Visual Language in Photojournalism
- Unit 6 Photojournalism and Society
- Unit 7 Ethics and Deontology in Photojournalism
- Unit 8. Photojournalism in the Digital World
- Unit 9 Editing in photojournalism
- Unit 10 Right to information, privacy and self-image
- Unit 11 Photographic Projects
- Unit 12 The Photojournalist as an Entrepreneur
- Unit 13. Portfolio workshop

Year: <b>2nd</b>	Course code: <b>9980002202</b>	Course: <b>Journalistic Analysis of the International Economy</b> ( <i>Análisis periodístico de la Economía Internacional</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to the History of Economic Thought
- Unit 2. Supply and Demand Gross Domestic Product
- Unit 3. Gross Domestic Product
- Unit 4. Inflation
- Unit 5. Labour market
- Unit 6. Balance of trade
- Unit 7. Monetary Policy and Central Banks

Year: <b>2nd</b>	Course code: <b>9980002203</b>	Course: <b>Marketing and Branding</b> ( <i>Marketing y Branding</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Marketing. 1.1. Historical Evolution of Marketing. 1.2 Marketing and needs
- Unit 2. The Marketing Mix. 2.1. The communication variable within the marketing mix. 2.2. Phases of the Marketing Plan
- Unit 3. Brand Strategy within communication. 3.1. Ways to Calculate Brand Equity. 3.2. Brand Types: Single Brand, Multiple Brand, Own Brand. 3.3 Top Brands by Value and Investment Volume (Branding)
- Unit 4. Conventional means of commercial communication (ATL). 4.1. Characteristics . 4.2. Pros and Cons. 4.3. Data and evolution of Advertising Investment . 4.4. Pricing Models
- Unit 5. Non-conventional means of commercial communication (BTL). 5.1. Characteristics . 5.2. Advantages and disadvantage . 5.3. Investment Data and Trends (Infoadex). 5.4 Pricing Models

Year: <b>2nd</b>	Course code: <b>9980002204</b>	Course: <b>Communication Groups</b> ( <i>Empresas de Comunicación</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. History of Communication Groups
- Unit 2. National Context. Analysis of the different groups
- Unit 3. Analysis of national news. Press and radio.
- Unit 4. Intentional context. Analysis of the different groups
- Unit 5. Analysis of international news. Press and radio.
- Unit 6. Analysis of New Media. Impact on different groups.

Year: <b>2nd</b>	Course code: <b>9980002205</b>	Course: <b>Political Science</b> ( <i>Ciencia Política</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. The Origins of Political Science. 1.1. The Greek Model: The Origins of Democracy. 1.2: Political Science in Modernity
- Unit 2. Political Models and Ideologies. 2.1: Forms of Political Domination. 2.2: Political ideologies. 2.3: The social and democratic rule of law
- Unit 3. Political actors and systems. 3.1: Political systems and regimes. 3.2: The Institutional Organization of the State. 3.3: The territorial organization of the State. 3.4: Elections and electoral systems
- Unit 4. Political Science in the Contemporary World. 4.1. Democracy, State, Market and Globalization

Year: <b>2nd</b>	Course code: <b>9980002206</b>	Course: <b>Journalism and Political Communication</b> ( <i>Periodismo y Comunicación política</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Study and analysis of specialized spaces for national and international political information and communication strategies of the main political groups and leaders.
- Unit 2. Practical exercise and through the development of political information content and the monitoring of election campaigns and other current events.

Year: <b>2nd</b>	Course code: <b>9980002207</b>	Course: <b>Radio Fundamentals</b> ( <i>Fundamentos de la Radio</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Knowledge of basic technology and use of broadcast systems
- Unit 2. Work tools and their application
- Unit 3. Design and typologies of the different programs and broadcasts, both in news as musicals
- Unit 4. Radio Programming

Year: <b>2nd</b>	Course code: <b>9980002208</b>	Course: <b>Public Opinion and Network Society</b> ( <i>Opinión Pública y Sociedad en Red</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Rationale for the concept of Public Opinion
- Unit 2. Historical Developments in the Framework of Contemporary Democratic Societies: Globalization, Globalization, and Virtualization. Technological critique
- Unit 3. Knowledge of national and international organizations
- Unit 4. Companies and sociometric tools
- Unit 5. Analysis of social and communicative trends in the Network Society Unit 6. Activism and Participation in Public Affairs

Year: <b>2nd</b>	Course code: <b>9980002209</b>	Course: <b>Journalist Writing: Texts for Opinion</b> ( <i>Redacción Periodística: Textos para la Opinión</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Opinion Journalism: Fundamental Concepts.
- Unit 2. The style and the opinion pages.
- Unit 3. The editorial article.
- Unit 4. The column.
- Unit 5. Tribunes and feature articles.
- Unit 6. Opinion in the audiovisual media.

Year: <b>2nd</b>	Course code: <b>9980002210</b>	Course: <b>Writing and Presentation in Radio and Television</b> ( <i>Redacción y Presentación en Radio y Televisión</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Study of the characteristics of both informative and argumentative texts
- Unit 2. Approximation to the ethical standards

Year: <b>2nd</b>	Course code: <b>9980002211</b>	Course: <b>Documentation and Data Journalism</b> ( <i>Documentación y Periodismo de Datos</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Searching and retrieving information on the web. 1.1. Types of searches, Boolean operators, delimiters, information sources vs. data types and spaces of the web. 1.2. Google
- Unit 2. Reliability of the website. 2.1. Criteria to be taken into account, factors that indicate that a website is not reliable. 2.2. Wikipedia

- Unit 3. Plagiarism. 3.1. Appointment concept. 3.2. Differences between: paraphrasing, quoting verbatim and summarizing.. 3.3. Divergences between: citation, footnote and bibliographic reference. 3.4. Plagiarism detection tool: Turnitin. 3.5. Types of plagiarism.
- Unit 4. Sources of general information. 4.1. Informational, biographical, historical, geographical, technical, statistical, normative, thematic, institutional, bibliographic, documentary, non-existent published, multimedia, lexicographic and telematics. 4. 2. Sources of information specialized in Communication

Year: <b>2nd</b>	Course code: <b>9980002212</b>	Course: <b>Influence and Relational impact</b> <i>(Influencia e impacto relacional)</i>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Communication in the professional context. 1.1. Communication strategies and noise in communication. 1.2. Types of speech. 1.3. Persuasion.
- Unit 2. Emotional intelligence and interpersonal relationships. 2.1. Intercultural communication. 2.2. Critical discourse analysis.
- Unit 3. Development and success: the ability to adapt to change. 3.1. Multimodal communication. . 3.2. Computer science and new media.

Year: <b>3rd</b>	Course code: <b>9980002301</b>	Course: <b>Radio Lab (podcasting)</b> <i>(Laboratorio de radio (podcasting))</i>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1. Interactive radio and digital radio. Different Types of Specialized digital Broadcasters
- Unit 2. On-chain programming.
- Unit 3. Creative radio production.
- Unit 4. Expressive language and realization.
- Unit 5. Experimentation with new radio formats. Streaming and podcasting.

Year: <b>3rd</b>	Course code: <b>9980002302</b>	Course: <b>Sport and Communication</b> <i>(Deporte y Comunicación)</i>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1. Sport Communication general framework
- Unit 2. History of Sport
- Unit 3. Language of Sport
- Unit 4. Communication and Sport in Journals
- Unit 5. Sports information processes
- Unit 6. Emerging processes in Sport
- Unit 7. Sport Radio
- Unit 8. Sport TV
- Unit 9. Communication and Sport in Internet

Year: <b>3rd</b>	Course code: <b>9980002303</b>	Course: <b>Journalistic analysis of the cultural environment</b> <i>(Análisis periodístico del entorno cultural)</i>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1: Culture in Contemporary Society
- Unit 2: Journalistic culture and communication
- Unit 3: Cultural Supplements and Magazines; Cultural journalism on the web
- Unit 4: Cultural journalism in the audiovisual media

Year: <b>3rd</b>	Course code: <b>9980002304</b>	Course: <b>Science Communication</b> <i>(Comunicación de la Ciencia)</i>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1. Fundamentals of Scientific Thought: Current Scientific and environmental.

- Unit 2. Sources of information.
- Unit 3. Scientific language. Dissemination and outreach

Year: <b>3rd</b>	Course code: <b>9980002305</b>	Course: <b>Editing and Web Design (<i>Edición y Diseño Web</i>)</b>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Theoretical and methodological foundations</li> <li>• Unit 2. Introduction to Web Editing</li> <li>• Unit 3. Web Coverage</li> <li>• Unit 4. Journalistic language for the web</li> <li>• Unit 5. Integration of content into the creation of a course project</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002306</b>	Course: <b>Digital Marketing (<i>Marketing Digital</i>)</b>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Digital Strategy and Online Marketing Strategy; development models.</li> <li>• Unit 2. Planning and design of the web platform. How to plan and design the company's website for optimize it according to the tastes in the different international markets and gain positioning in them.</li> <li>• Unit 3. Strategies for attracting and selling in foreign markets.</li> <li>• Unit 4. Social media. Analysis of existing ones and how companies can use them to Reach the international consumer more effectively.</li> <li>• Unit 5. Acquisition strategies for e-commerce; e-mail marketing and affiliate marketing.</li> <li>• Unit 6. Search strategy: SEO and SEM. Study of organic and paid positioning techniques for Appear in the top positions of search engines, depending on the countries where sales are targeted.</li> <li>• Unit 7. Mobile marketing. Study of the set of practices that allow companies to communicate with your customers interactively through mobile devices.</li> <li>• Unit 8. International legislation applied to the Internet. Data Protection Laws and Regulations and issues related to e-commerce transactions.</li> <li>• Unit 9. Analytica &amp; metrics of an e-marketing plan. Study of web analytics and measure the traffic of the site</li> <li>• Unit 10. E-marketplaces. Study of the portals where supply and demand meet between companies (B2B), whether they are multi-sector (horizontal portals) or sector-specific (vertical). Marketplaces in the international digital strategy.</li> <li>• Unit 11. E-commerce. Study of online sales as a channel that allows expanding marketsthrough new technologies.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002307</b>	Course: <b>Immersive Journalism (<i>Periodismo inmersivo</i>)</b>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Immersive Communication: Origins and Development.</li> <li>• Unit 2. Virtual Reality / Augmented Reality / 360º Video / Immersive Sound</li> <li>• Unit 3. Journalism 360: Immersive Experiences in Journalism and Trends</li> <li>• Unit 4. Journalism in the Metaverse: Risks and Challenges</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002308</b>	Course: <b>News Workshop and Live Television Production (<i>Taller de informativos y Producción de Directos en Televisión</i>)</b>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Audiovisual news genres</li> <li>• Unit 2. Presentation of news</li> <li>• Unit 3. Image and sound processing in news</li> <li>• Unit 4. News production</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002309</b>	Course:	Program:	Term: <b>Semester 2</b>	Teaching Language:	Cr:
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		<b>Social Research Methods</b> ( <i>Métodos de investigación social</i> )	<b>Bachelor's Degree in Journalism</b>		<b>Spanish</b>	<b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1 – Introduction to the research process.</li> <li>• Unit 2 - Research project.</li> <li>• Unit 3 – Critical review of the literature.</li> <li>• Unit 4 – Scientific writing.</li> <li>• Unit 5 – Research design and methodology.</li> <li>• Unit 6 - Quantitative research techniques.</li> <li>• Unit 7 - Qualitative research techniques.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002310</b>	Course: <b>Literary creation and communication</b> ( <i>Creación literaria y comunicación</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Approach to the relationship between Journalism and Literature.</li> <li>• Unit 2. Fundamentals of narrativity. Critical Analysis of Creative Journalistic Texts of the 20th and 21st centuries.</li> <li>• Unit 3. Tools to transform the informative discourse into a narrative discourse.</li> <li>• Unit 4. Typical features of chronic gender specificity</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002311</b>	Course: <b>Entrepreneurial leadership</b> ( <i>Liderazgo emprendedor</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Management skills and constant change. 1.1. Flexibility, adaptation and resilience. 1.2. Decision-making. 1.3. Change management. 1.4. Time management. 1.5. Knowledge management.</li> <li>• Unit 2. Effective Communication vs. Emotional Communication. 2.1. How to communicate in the business environment. 2.2. Emotional intelligence. 2.3. Persuasive communication. 2.4. Verbal communication. 2.5. Non-verbal communication.</li> <li>• Unit 3. From the figure of the leader to the competence of leadership. 3.1. Introduction to leadership. 3.2. Fundamentals of leadership. 3.3. Intergenerational leadership. 3.4. Teamwork.</li> <li>• Unit 4. Entrepreneurship &amp; Leadership. 4.1. Proactive versus reactive. 4.2. Laws of entrepreneurship.. 4.3. Social entrepreneurship. 4.4. Personal branding.</li> <li>• Unit 5. The Complexity of Global Society. 5.1. Global complexity in organizations. 5.2. Diversity management. 5.3. Conflict management and negotiation. 5.4. Management and ethics.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002312</b>	Course: <b>Corporate Communication</b> ( <i>Comunicación corporativa</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Identity and Brand</li> <li>• Unit 2. Brand Communication</li> <li>• Unit 3. Internal Communication</li> <li>• Unit 4. External Communication</li> <li>• Unit 5. Brand Communication Plan</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002313</b>	Course: <b>Audience Analysis</b> ( <i>Análisis de audiencias</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to Audience Research Techniques. 1.1. Introduction to the importance of audience measurement. 1.2. Quantitative measurement. 1.3. Qualitative measurement</li> <li>• Unit 2. Audience Research &amp; Analysis. 2.1 Audience research in analogue media. 2.2 Audience research in digital and on-demand media. 2.3 Reading, concepts, and data analysis</li> <li>• Unit 3. The search for the audience and companies in the sector. 3.1. Spin-off companies from audience research. 3.2. The Profession of Audience Analyst. 3.3. Persuasion techniques for large audiences.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9980002314</b>	Course: <b>Observatory of international current affairs</b> ( <i>Observatorio de actualidad internacional</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. Political dynamics of international actors and great powers. 1.1: United States and European Union. 1.2: China, Russia, Regional and emerging powers
- Unit 2. Geopolitical areas and international politics. 2.1: Asia; Atlantic; Indo-Pacific; Africa. 2.2: Trade; Technology; Security; Identity
- Unit 3. International current events. 3.1: International Cooperation, diversity and values. 3.2: International conflicts and global challenges

Year: <b>4th</b>	Course code: <b>9980002401</b>	Course: <b>Communication Law and Deontology</b> ( <i>Derecho y Deontología de la Comunicación</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to Communication Law and Deontology. 1.1: Introduction to Communication Law. 1.2: Basic concepts. Legal Terminology. 1.3: Communication deontology. Concepts, principles, codes. Analysis
- Unit 2. Fundamental rights and communication. 2.1: Freedom of expression, freedom of information and the right to information. 2.2: Other Fundamental Rights: Prior Censorship, Judicial Sequestration, Secrecy right to rectification, professional secrecy, objection to awareness and data protection. 2.3: Right to honour, personal and family privacy and self-image.
- Unit 3. Regulation of audiovisual communication
- Unit 4. Copyright and Communication. Social Networks

Year: <b>4th</b>	Course code: <b>9980002402</b>	Course: <b>Documentary Workshops in TV</b> ( <i>Taller de documentales en Televisión</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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**Course content/Units:**

- Unit 1. What is the documentary? 1.1 Viewing and reviewing a documentary.
- Unit 2. The first documentaries. Narrative documentary. 2.1. Viewing and reviewing a documentary. 2.2. Analysis of a practical manual of documentary design
- Unit 3 Topic 3. Types of Documentaries. 3.1. Identification and analysis of documentary narratives. 3.2. Watching a documentary
- Unit 4. The documentary as a social judgment. 4.1. Viewing and analysis of the documentary. 4.2. Final Documentary Practice

Year: <b>4th</b>	Course code: <b>9980002403</b>	Course: <b>Television reports</b> ( <i>Reportajes en Televisión</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Technical and formal aspects of television reporting.
- Unit 2. The narrative of the television report.
- Unit 3. Treatment of information in television reporting.
- Unit 4. Production of the television report.

<b>4</b>	<b>9980002801</b>	<b>Branded content</b> <b>Se imparte en COMUNIC AUDIOVISUAL</b>	<b>Semestre 1 / Fall Term (Sept - Jan)</b>		<b>Español</b>	<b>6</b>
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Year: <b>4th</b>	Course code: <b>9980002802</b>	Course: <b>Infography and Data processing</b> ( <i>Infografía y procesamiento de datos</i> )	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Course content/Units:**

- Unit 1. Introduction to data culture.
- Unit 2. General principles of infographics.
- Unit 3. General principles of data visualization.
- Unit 4. Project.

Year: <b>4th</b>	Course code: <b>9980002803</b>	Course: <b>App Design (Diseño de apps)</b>	Program: <b>Bachelor's Degree in Journalism</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to App Design</li> <li>• Unit 2. User Journey</li> <li>• Unit 3. User Experience</li> <li>• Unit 4. User Interface</li> <li>• Unit 5. Wireframes</li> <li>• Unit 6. High definition prototyping</li> <li>• Unit 7. Project</li> </ul>						

4	9980002804	<b>Transmedia narrative (Narrativa Transmedia)-Se imparte en COMUNIC AUDIOVISUAL</b>	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9980002805	<b>Gamification (Gamificación)-Se imparte en COMUNIC AUDIOVISUAL</b>	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9980002806	<b>Producción audiovisual multiplataforma Se imparte en COMUNIC AUDIOVISUAL</b>	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9980002807	<b>Nuevas tendencias en televisión Se imparte en COMUNIC AUDIOVISUAL</b>	Semestre 1 / Fall Term (Sept–Jan)		Español	6
4	9980002808	<b>Formatos de entretenimiento Se imparte en COMUNIC AUDIOVISUAL</b>	Semestre 2 / Spring Term (Jan–Jun)		Español	6
4	9980002809	<b>Retransmisiones de eventos en televisión Se imparte en COMUNIC AUDIOVISUAL</b>	Semestre 2 / Spring Term (Jan–Jun)		Español	6

## Bachelor's Degree in Publicity (Grado en Publicidad) (Spanish)

1	9812001101	<b>Teoría de la Comunicación</b>	Semestre 1 / Fall Term (Sept–Jan)		Español	6
1	9812001102	<b>Historia de la publicidad</b>	Semestre 1 / Fall Term (Sept–Jan)		Español	3
1	9812001103	<b>Ecosistema publicitario</b>	Semestre 1 / Fall Term (Sept–Jan)		Español	3

Year: <b>1st</b>	Course code: <b>9812001104</b>	Course: <b>Rhetoric and oratory (Retórica y oratoria)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Fundamentals of classical rhetoric. Contemporary rhetoric.</li> <li>• Unit 2. Persuasive and efficient public speaking on multiple screens. Contrastive rhetoric.</li> <li>• Unit 3. Efficient public speaking through the creation of metaphors.</li> <li>• Unit 4. Speech and narration.</li> <li>• Unit 5. Rhetoric and oratory with NLP techniques.</li> <li>• Unit 6. Rhetoric in everyday colloquial discourse. Rhetoric in political discourse.</li> </ul>						

- Unit 7. Neuro-oratory through the voice, and the efficient management of silences. Rhetoric in the business discourse. Mindfulness and intra- and inter-personal public speaking.
- Unit 8. Rhetorical analysis.
- Unit 9. Public Speaking and Elevator Pitch.
- Unit 10. Concentration techniques in influential one-to-one public speaking. Mindfulness Strategies and meditation in the face of speech anxiety.
- Unit 11. Mindful Oratory: Mindfulness and Rhetoric.

Year: <b>1st</b>	Course code: <b>9812001105</b>	Course: <b>Creative thinking</b> ( <i>Pensamiento creativo</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. The world of ideas.</li> <li>• Unit 2. What is an idea?</li> <li>• Unit 3. The creative process.</li> <li>• Unit 4. Development of a creative attitude.</li> <li>• Unit 5. Learn to think.</li> <li>• Unit 6. Inspiration, simplicity.</li> <li>• Unit 7. Block recognition.</li> <li>• Unit 8. Divergent, parallel and lateral thinking.</li> </ul>						

Year: <b>1st</b>	Course code: <b>9812001106</b>	Course: <b>Persuasive Communication</b> ( <i>Comunicación Persuasiva</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Dynamics and design of advertising communication to influence human behavior;</li> <li>• Unit 2. General theoretical knowledge of the rhetorical figures of objective-based communication;</li> <li>• Unit 3. Tools and persuasive effects it produces in the receiver;</li> <li>• Unit 4. Advertising argumentation tools (impulse buying, rational buying); figures of speech in persuasive advertising communication;</li> <li>• Unit 5. Figures of speech applied to advertising creativity; Interpretation of the figures rhetoric in the application of advertising;</li> <li>• Unit 6. Essential Pillars of Persuasive Conscious Communication through Theoretical and experiential foundations of mindfulness in communication.</li> </ul>						

<b>1</b>	<b>9812001107</b>	<b>Fundamentos de marketing</b>	<b>Semestre 2 / Spring Term</b> (Jan–Jun)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9812001108</b>	<b>Comunicación corporativa</b>	<b>Semestre 2 / Spring Term</b> (Jan–Jun)		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9812001109</b>	<b>Edición y diseño gráfico</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9812001110</b>	<b>Tecnología Audiovisual</b>	<b>Semestre 1 / Fall Term (Sept–Jan)</b>		<b>Español</b>	<b>6</b>
<b>1</b>	<b>9812001111</b>	<b>Fotografía y artes visuales</b>	<b>Semestre 2 / Spring Term</b> (Jan–Jun)		<b>Español</b>	<b>6</b>

Year: <b>2nd</b>	Course code: <b>9812001201</b>	Course: <b>Work Processes in Advertising Agencies</b> ( <i>Procesos de trabajo en agencias de publicidad</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Structure and operation of advertising departments, as well as a vision of the rest of the business organization.</li> <li>• Unit 2. Advertiser/company relationships.</li> <li>• Unit 3. Creative conceptualization. Introduction to art direction and copywriting.</li> <li>• Unit 4. Production management: selection of portfolios/images/spots/photos. Artwork</li> <li>• Unit 5. Finish: Position Tests, Color Tests, Corrections, etc. Budgets.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9812001202</b>	Course: <b>Consumer Psychosociology</b> <i>(Psicosociología del consumidor)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Conscious perception of Advertising Communication</li> <li>• Unit 2. Individual determinants of consumer behaviour</li> <li>• Unit 3. Motivation</li> <li>• Unit 4. Attitudes and beliefs</li> <li>• Unit 5. Influence of the environment on consumer behavior</li> <li>• Unit 6. Culture</li> <li>• Unit 7. Social groups</li> </ul>						

<b>2</b>	<b>9812001203</b>	<b>Legislación Profesional</b>	<b>Semestre 2 / Spring Term</b> <i>(Jan–Jun)</i>		<b>Español</b>	<b>3</b>
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Year: <b>2nd</b>	Course code: <b>9812001204</b>	Course: <b>Media, supports and formats</b> <i>(Medios, soportes y formatos)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction of advertising media</li> <li>• Unit 2. Introduction of advertising media</li> <li>• Unit 3. State-of-the-art vision of supports</li> <li>• Unit 4. Current guerrilla supports and means</li> <li>• Unit 4. Taxonomy of media and advertising development</li> <li>• Unit 5. Development of advertising media applied to advertising</li> <li>• Unit 6. Design of new advertising media</li> <li>• Unit 7. Introduction to operational media planning</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9812001205</b>	Course: <b>Editing &amp; Graphic Design 2</b> <i>(Edición y diseño gráfico 2)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Specialization in the management of the most important software in publishing, layout and design with Adobe Indesign programs.</li> <li>• Unit 2. Specialization in the management of the most important software within illustration and design with Adobe Illustrator</li> <li>• Unit 3. Specialization in the management of the most important software within digital retouching and photo compositing with Adobe Photoshop</li> <li>• Unit 4. Expansion of graphic design and prototyping resources and applications for content on-line: Proto.io, Invision, Marvel, etc.</li> <li>• Unit 5. Application of this acquired knowledge in real advertising jobs, both in Editing, illustration, design and digital retouching of photographs.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9812001206</b>	Course: <b>Video Editing</b> <i>(Edición de vídeo)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Study of current standards in non-linear editing processes.</li> <li>• Unit 2. To this end, the necessary tools for the production of audiovisual pieces will be used both in the capture and recording phase (technical level) and in editing, post-production and export.</li> <li>• Unit 3. Creation of professional audiovisual products starting from their design and going through the different creative processes until its final finish.</li> </ul>						

Year: <b>2nd</b>	Course code: <b>9812001207</b>	Course: <b>Storytelling (Transmedia Narrative)</b> <i>(Storytelling (narrativa transmedia))</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						

- Unit 1. Changes in the advertising message: the revolution brought about by the emergence of the Internet with respect to the theory of communication.
- Unit 2. Narration elements in different media
- Unit 3. User access points, content creation and windows for the exploitation of audiovisual content. Resources for Creative Storytelling

Year: <b>2nd</b>	Course code: <b>9812001208</b>	Course: <b>New Artistic Trends in Advertising</b> <i>(Nuevas tendencias artísticas en publicidad)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Analysis of contemporary art of the 20th and 21st centuries and its implication in the Advertising phenomenon.
- Unit 2. Development of artistic and creative tendencies of all the fields of cultural industries (illustration, street art, stereographic or tactile, collage, etc.), and current artistic movements. The DIY phenomenon (scrapbooking, embossing, embroidery, knitting, etc.) applied to design. New Digital applications and techniques.
- Unit 3. Trends from the popular world

Year: <b>2nd</b>	Course code: <b>9812001209</b>	Course: <b>Brand Strategy</b> ( <i>Estrategia de marca</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Strategic and creative planning of Branding.
- Unit 2. Strategic and creative importance of the brand in the organization.
- Unit 3. This topic studies and analyzes the value of the brand and its creative processes in the organizations, disaggregating the different concepts that make up and integrate the Brand concept and its creative construction in the market.
- Unit 4. Branding concept.
- Unit 5. The construction and creative processes of a brand.
- Unit 6. Brand building.
- Unit 7. Strategic brand marketing and communication.
- Unit 8. Global strategic planning

Year: <b>2nd</b>	Course code: <b>9812001210</b>	Course: <b>Publicity Strategy</b> ( <i>Estrategia Publicitaria</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Advertising strategy concept
- Unit 2. The figure of the strategic planner, their roles and responsibilities
- Unit 3. Planning and methodologies: information stage, research, conclusions, development of the Strategy, Verification & Control

Year: <b>2nd</b>	Course code: <b>9812001211</b>	Course: <b>Ethics and professional efficiency</b> <i>(Ética y eficacia profesional)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Course content/Units:**

- Unit 1. Ethical approaches in the different spheres of professional activity.
- Unit 2. Autonomous learning and self-regulation in personal life and professional practice. Keys to organizing and managing teamwork.
- Unit 3. Strategic brand marketing and communication.
- Unit 4. Global strategic planning.

Year: <b>3rd</b>	Course code: <b>9812001301</b>	Course: <b>Social Research Methods</b> ( <i>Métodos de investigación social</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Course content/Units:**

- Unit 1. General characteristics of scientific research methodology, especially oriented to the social sciences.
- Unit 2. Phases of research (quantitative approach and, especially, qualitative approach).

- Unit 3. Characteristics of a scientific publication.
- Unit 4. Guidelines for the design of the Final Degree Project.

Year: <b>3rd</b>	Course code: <b>9812001302</b>	Course: <b>Influence and relational impact</b> <i>(Influencia e impacto relacional)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Communication in the professional field.</li> <li>• Unit 2. Emotional intelligence in interpersonal relationships.</li> <li>• Unit 3. The success of change: The ability to adapt.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001801</b>	Course: <b>Neuromarketing</b> <i>(Neuromarketing)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Brain Physiology: The Triune Brain</li> <li>• Unit 2. Decision-making: emotionality vs. rationality</li> <li>• Unit 3. Neuroscience research techniques</li> <li>• Unit 4. Applications of neuroscience to the variables of the marketing mix: product, price, Distribution &amp; Price</li> <li>• Unit 5. Ethical implications</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001802</b>	Course: <b>Digital Marketing</b> <i>(Marketing Digital)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Fundamental concepts of Digital Marketing.</li> <li>• Unit 2. The digital strategy within the Company's Marketing Plan.</li> <li>• Unit 3. New media, new media and new formats of online communication.</li> <li>• Unit 4. Social Networks as a strategic marketing tool.</li> <li>• Unit 5. Internet search engine positioning.</li> <li>• Unit 6. Online analysis tools and control of results.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001803</b>	Course: <b>Comunicaion Directon</b> <i>(Dirección de Comunicación)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. The communication directorate: El Dircom</li> <li>• Unit 2. Corporate Branding</li> <li>• Unit 3. Strategic communication plan</li> <li>• Unit 4. Corporate communication management</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001804</b>	Course: <b>Events and Sponsorships</b> <i>(Eventos y patrocinios)</i>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Contributions of the events to the business and communication strategy of the Organizations.</li> <li>• Unit 2. Types of events and areas of action.</li> <li>• Unit 3. Conceptual delimitation and doctrinal positioning of sponsorship, as well as other related practices such as patronage.</li> <li>• Unit 5. Preparation of proposals, negotiation and planning of sponsorship projects.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001805</b>	Course: <b>Big Data and Dat Processing</b> <i>(Big data y procesamiento de datos)</i>	Program:	Term: <b>Semester 1</b>	Teaching Language:	Cr:
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			<b>Bachelor's Degree in Publicity</b>		<b>Spanish</b>	<b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction to data culture. Application in the field of communication.</li> <li>• Unit 2. Data collection methods.</li> <li>• Unit 3. Storage and processing of large data sets.</li> <li>• Unit 4. Data analytics.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001806</b>	Course: <b>Online Design and Programming</b> ( <i>Diseño y programación on-line</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Design, accessibility and usability. Advertising on the internet or mobile application.</li> <li>• Unit 2. Programming for content viewing.</li> <li>• Unit 3. SEO (Search Engine Optimization) programming and positioning.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001807</b>	Course: <b>Video Editing 2</b> ( <i>Edición de video 2</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Study of the main theories of film editing.</li> <li>• Unit 2. Evolution of these works through the analysis of classic and contemporary works.</li> <li>• Unit 3. Carrying out specific practices for the assimilation of these theories</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001808</b>	Course: <b>Advertising production (digital, audiovisual, graphic)</b> ( <i>Producción publicitaria (digital, audiovisual, gráfica)</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Production requirements, tools, file formats and processes necessary for the student to be able to perform the final arts necessary for the advertising productions.</li> <li>• Unit 2. Selection of producers, post-producers, directors, announcers, illustrators, music, pre-production books and budgeting.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001809</b>	Course: <b>Neurocreativity</b> ( <i>Neurocreatividad</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Knowledge and application of creative techniques applied to Advertising (Brainstorming, 7 Hats, Investment, Dramatization, Insights, Forced Analogy)</li> <li>• Unit 2. Application of neurocreativity techniques such as (Body scan, projective drawing, googlestorming, storytelling, deep focus¿) to improve capacity narrative.</li> <li>• Unit 3. Technological and neuroscientific advances applied to creativity.</li> <li>• Unit 4. Application of emotional neurointelligence for the creation of personal branding.</li> <li>• Unit 5. Advertising creative processes. Use of individual and group techniques for Realization of real advertising pieces.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001810</b>	Course: <b>Corporate Visual Identity</b> ( <i>Identidad visual corporativa</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						



- Unit 1. Conceptualization of the project: Identity Manual, Corporate 360<sup>º</sup> (online and offline), brand architecture within the branding of a company
- Unit 2. Implementation of Brand graphic criteria. Flexible visual systems, size tests, color definition and typography instructions for the identity.
- Unit 3. Corporate Identity Manual. Online and offline pieces based on the product application.

Year: <b>3rd</b>	Course code: <b>9812001811</b>	Course: <b>Copy (Copy)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Publicity Creativity

**Course content/Units:**

- Unit 1. Concepts necessary for the interpretation, conceptualization and realization of Advertising pieces.
- Unit 2. Writing audiovisual scripts. Writing, editing and sound of Cases of Advertising studios.
- Unit 3. Creation of radio scripts and digital formats.
- Unit 4. Applied strategic thinking simulating client presentations.
- Unit 5. Use of professional software.

Year: <b>3rd</b>	Course code: <b>9812001812</b>	Course: <b>Art Direction (Dirección de Arte)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Publicity Creativity

**Course content/Units:**

- Unit 1. Art direction in direct marketing and promotional materials.
- Unit 2. Art direction in digital campaigns (web and social networks).
- Unit 3. Art direction in packaging.

Year: <b>3rd</b>	Course code: <b>9812001813</b>	Course: <b>Creativity Lab (Laboratorio de creatividad)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Publicity Creativity

**Course content/Units:**

- Unit 1. Laboratory from the strategy route and from creativity
- Unit 2. Resolution of proposed briefings producing the pieces in suitable formats
- Unit 3. Portfolio

Year: <b>3rd</b>	Course code: <b>9812001814</b>	Course: <b>Media plan (Planificación de medios)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Publicity Strategy

**Course content/Units:**

- Unit 1. The Media Plan within the Strategic Marketing Plan
- Unit 2. Television within the media plan
- Unit 3. Radio within the media plan
- Unit 4. The press within the media plan
- Unit 5. Outdoor advertising within the media plan
- Unit 6. Internet within the media plan.
- Unit 7. Media Plan Timeline & Budget

Year: <b>3rd</b>	Course code: <b>9812001815</b>	Course: <b>Account Management (Dirección de Cuentas)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
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**Note:** course of the specialty of Publicity Strategy

**Course content/Units:**

- Unit 1. The Advertising Agency
- Unit 2. Account Management
- Unit 3. Account manager functions
- Unit 5. Working systems

- Unit 5. Relationship between account management and advertiser
- Unit 6. Account Planning

Year: <b>3rd</b>	Course code: <b>9812001816</b>	Course: <b>Strategy Lab I (Laboratorio de Estrategia I)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Global communication strategies.</li> <li>• Unit 2. Effective management of the client's budget to achieve maximum diffusion in reaching the target audience.</li> <li>• Unit 3. Resolution of briefings that pose customer communication challenges.</li> </ul>						

Year: <b>3rd</b>	Course code: <b>9812001817</b>	Course: <b>Innovation and entrepreneurship (Innovación y emprendimiento)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Introduction. Culture of innovation.</li> <li>• Unit 2. International cultural models and adaptation.</li> <li>• Unit 3. Design Thinking. Functionalism.</li> <li>• Unit 4. New lines of business innovation.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001401</b>	Course: <b>Entrepreneurial leadership (Liderazgo emprendedor)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Keys to leadership.</li> <li>• Unit 2. Integration of identification and selection (of specialized searches) for the evidence-based decisions.</li> <li>• Unit 3. Proactive thinking and entrepreneurship.</li> <li>• Unit 4. Complex organizations: balance between the domestic and the global.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001818</b>	Course: <b>Retail marketing (shopper marketing)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Concept, structure and composition of distribution channels.</li> <li>• Unit 2. Multichannel and omnichannel.</li> <li>• Unit 3. Spatial evaluation and selection of product and advertising material placement.</li> <li>• Unit 4. Retail Merchandising decisions: communication management at the point of sale.</li> <li>• Unit 5. E-commerce and the new environment of virtual stores.</li> <li>• Unit 6. Future and new trends in communication at the point of sale</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001819</b>	Course: <b>Direct and Promotional Marketing (Marketing directo y promocional)</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>• Unit 1. Concept of Direct and Promotional Marketing. Evolution and adaptation to the digital environment.</li> <li>• Unit 2 Role of Direct and Promotional Marketing within the Marketing Plan</li> <li>• Unit 3. Main tools and formats of Direct and Promotional Marketing.</li> <li>• Unit 4. Management, management and legal regulation of Databases</li> <li>• Unit 5. Creativity adapted to the formats of Direct Marketing and Promotion</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001820</b>	Course:	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
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		<b>Life Communication (Event organization)</b> ( <i>Comunicación en vivo (organización de eventos)</i> )				
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Institutional and company events organization techniques and processes</li> <li>Unit 2. Implementation strategies for national and international events</li> <li>Unit 3. Protocol department structure and management</li> <li>Unit 4. Event planning</li> <li>Unit 5. Cultural background research</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001821</b>	Course: <b>Institutional and Public Relations</b> ( <i>Relaciones Públicas e Institucionales</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Strategy						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Application and management of public relations tools.</li> <li>Unit 2. Advising the company's management and evaluating the effects on institutional reputation.</li> <li>Unit 3. Corporate Social Responsibility Management.</li> <li>Unit 4. Crisis management. Spokesperson</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001822</b>	Course: <b>Publicity Photography</b> ( <i>Fotografía publicitaria</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Photography resources and Tools. Studio lighting and Photometry</li> <li>Unit 2. Preproduction and Postproduction. References</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001823</b>	Course: <b>Usability Design</b> ( <i>Diseño de usabilidad (UX)</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Usability antecedents and its evolution to the current multiscreen</li> <li>Unit 2. Usability, navigation, identity, access or clear content tests</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001824</b>	Course: <b>Video postproduction</b> ( <i>Postproducción de vídeo</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to post-production or the final phase of video editing</li> <li>Unit 2. Correct use of tools or software specialized in audiovisual post-production.</li> <li>Unit 3. Color grading, color correction, and image enhancement techniques</li> <li>Unit 4. Transitions and effects commonly used in non-linear editing.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001825</b>	Course: <b>Infography and Data Visualisation</b> ( <i>Infografía y visualización de datos</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3 ECTS</b>
<b>Note:</b> course of the specialty of Publicity Creativity						
<b>Course content/Units:</b>						
<ul style="list-style-type: none"> <li>Unit 1. Introduction to data culture. Application in the field of advertising.</li> <li>Unit 2. General principles of infographics.</li> <li>Unit 3. General principles of data visualization.</li> <li>Unit 4. Project.</li> </ul>						

Year: <b>4th</b>	Course code: <b>9812001826</b>	Course: <b>Portfolio</b>	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Note:** course of the specialty of Publicity Creativity

**Course content/Units:**

- Unit 1. Laboratory in which students will work on briefings for different supports.
- Unit 2. Students must think and execute the piece in a professional way with the highest quality enough for it to become part of your professional portfolio.
- Unit 3. To make the pieces, all kinds of technological resources must be used and Audiovisual.

Year: <b>4th</b>	Course code: <b>9812001827</b>	Course: <b>Art Direction 2 (packaging, promotional and direct)</b> ( <i>Dirección de Arte 2 (packaging, promocional y directo)</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Note:** course of the specialty of Publicity Creativity

**Course content/Units:**

- Unit 1. Art direction in direct marketing and promotional materials.
- Unit 2. Art direction in digital campaigns (web and social networks).
- Unit 3. Art Direction in Packaging

Year: <b>4th</b>	Course code: <b>9812001828</b>	Course: <b>Digital Creativity Lab</b> ( <i>Laboratorio de creatividad digital</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Note:** course of the specialty of Publicity Creativity

**Course content/Units:**

- Unit 1. Development of campaigns by work teams, which will acquire different roles to the throughout its development.
- Unit 2. Review of production processes related to the parts that are being developing

Year: <b>4th</b>	Course code: <b>9812001829</b>	Course: <b>Trend research</b> ( <i>Investigación de tendencias</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6</b> ECTS
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**Note:** course of the specialty of Publicity Strategy

**Course content/Units:**

- Unit 1. Observatory of current advertising news.
- Unit 2. National and international trends in the advertising business.
- Unit 3. Advertising use of applications and new technologies.
- Unit 4. Study of new methodologies where new formulas will be incorporated Communication.

Year: <b>4th</b>	Course code: <b>9812001830</b>	Course: <b>Strategy Lab II</b> ( <i>Laboratorio de estrategia II</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Note:** course of the specialty of Publicity Strategy

**Course content/Units:**

- Unit 1. Preparation of the advertising strategy: meeting with client and reception of briefing,
- Unit 2. Analysis and research, bible elaboration of the project, coordination interdepartmental, choice of concept, positioning, means and supports.
- Unit 3. Implementation of the project. Verification and control.

Year: <b>4th</b>	Course code: <b>9812001831</b>	Course: <b>Media Lab</b> ( <i>Laboratorio de medios</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 2</b>	Teaching Language: <b>Spanish</b>	Cr: <b>3</b> ECTS
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**Note:** course of the specialty of Publicity Strategy

**Course content/Units:**

- Unit 1. Comprehensive planning of the media campaign.
- Unit 1. Proficiency in software that supports strategic planning of the media.
- Unit 1. Review and analysis of the results of the investment in media.

Year: <b>4th</b>	Course code: <b>9812001832</b>	Course: <b>Digital Online Business models</b> ( <i>Modelos de negocios digitales</i> )	Program: <b>Bachelor's Degree in Publicity</b>	Term: <b>Semester 1</b>	Teaching Language: <b>Spanish</b>	Cr: <b>6 ECTS</b>
<p><b>Note:</b> course of the specialty of Publicity Strategy</p> <p><b>Course content/Units:</b></p> <ul style="list-style-type: none"> <li>• Unit 1. Main players in the online business</li> <li>• Unit 2. Business models</li> <li>• Unit 3. Security, legality and virtual environment</li> <li>• Unit 4. Promotional actions in virtual environments</li> <li>• Unit 5. Own communication techniques in the virtual environment</li> <li>• Unit 6. E-commerce categories</li> <li>• Unit 7. Advantages and disadvantages of disintermediation and the new value chain</li> </ul>						