APPLICATION FORM FOR VERIFICATION OF OFFICIAL DEGREES
1. UNIVERSITY, CENTRE AND DEGREE TO THE APPLICATION

In accordance with Royal Decree 1393/2007, where the management of the Official University Education is established

UNIVERSITY APPLICANT	**CENTRE**	**CENTRE CODE**
University of Malaga	Hygher Polytechnic School	29009119
LEVEL	**SHORT DESIGNATION**	
Degree	Industrial Design Engineering and Product Development	
SPECIFIC DESIGNATION		
Industrial Design Engineering and Product Development Degree by the University of Malaga		
BRANCH OF KNOWLEDGE		
Engineering and Architecture		
ASSOCIATED UNIVERSITIES	AGREEMENT	
No		
ENABLING TO EXERCISE A REGULATED PROFESSION	ENABLING RULES	
No		
APPLICANT		
NAME AND SURNAMES	POSITION	
MARIA JOSE BLANCA MENA	Vice-Rector for Academic Affairs at the University of Malaga	
Type of Document	Document Number	
IDENTITY CARD	25084614D	
LEGAL REPRESENTATIVE		
NAME AND SURNAMES	POSITION	
MARA JOSE BLANCA MENA	Vice-Rector for Academic Affairs at the University of Malaga	
Type of Document	Document Number	
IDENTITY CARD	25084614D	
RESPONSIBLE FOR THE DEGREE		
NAME AND SURNAME	POSITION	
Alejandro Rodríguez Gómez	DEAN HIGHER POLYTECHNIC SCHOOL	
Type of Document	Document number	
IDENTITY CARD	33381949W	

2. ADDRESS FOR NOTIFICATION PURPOSES
In order to practice notifications of all procedures relating to this application, communications must be sent to the address shown in this paragraph.

ADDRESS	POSTAL CODE	TOWNSHIP CITY	TELEPHONE
C/ El Ejido s/n. PABELLÓN DE GOBIERNO DE LA UNIVERSITY OF MALAGA	29071	Malaga	952131038
E-MAIL	PROVINCE		FAX
blamen@uma.es	Malaga		952132694

3. PROTECTION OF PERSONAL DATA In compliance with the Personal Data Protection Organic Law 5/199, December 13th, Protection of Personal Data, we inform that the requested data in this Form are required for the processing of the application and will be processed automatically. The responsibility of the automated file is for the Council of Universities. Applicants who give data may apply to the Council the rights of information, access, rectification and cancellation which are referred to in Title III of the Law 5-1999, without prejudice with provisions of other legislation which protects those who give the personal data.
The applicant acknowledges the terms and agrees to accomplish with de requirements thereof, and expressly consenting the notification by using telematic media to the purposes of Article 59 of the 30/1992 of November 26th, on Legal Regime of Public Administrations and the Common Administrative Procedure, as given by Law 4/1999 of January 13th release.

	Malaga, _____ (date)
	Signature: Legal Representative for the University

1. DESCRIPTION OF CERTIFICATE
1.1 BASIC DATA

LEVEL	SPECIFIC DESIGNATION	ASSOCIATED UNIVERSITIES	AGREEMENT	ATTACHED
Degree	Industrial Design Engineering and Product Development Degree	NO		See annexes. Paragraph

MENTIONS LIST
No data

BRANCH	ISCED 1	ISCED 2
Engineering and Architecture	Design	Design

NOT ENABLED OR LINKED TO ANY REGULATED PROFESSION
ASSESSMENT AGENCY
Andalussian Agency for Quality Assessment and Accreditation (AGAE)
UNIVERSITY APPLICANT
University of Malaga
LIST OF UNIVERSITIES

CODE	UNIVERSITY
011	University of Malaga

LIST OF FOREIGN UNIVERSITIES	
CODE	UNIVERSITY
No data	

LIST OF PARTICIPATING INSTITUTIONS
No data

1.2 DISTRIBUTION OF CREDITS IN THE DEGREE

TOTAL CREDITS	BASIC EDUCATION CREDITS	CREDITS IN INTERNSHIPS
240	60	0
OPTIONAL CREDITS	COMPULSORY CREDITS	WORKING CREDITS ENDING DEGREE/ MASTER
30	138	12

LIST OF MENTIONS	
MENTION	OPTIONAL CREDITS
No data	

1.3 University of Malaga

1.3.1 CENTRES IN WHICH IS OFFERED

LIST OF CENTRES	
CODE	CENTRE
29009119	Higher Polytechnic School

1.3.2. Higher Polytechnic School

1.3.2.1 1.3.2.1 DATA OF THE CENTRE

TYPES OF TEACHINGS WHICH ARE TAUGHT IN THE CENTRE		
ON-CAMPUS CLASS	BLENDED LEARNING	ON-LINE
Yes	No	No
NEW OFFERED SEATS		
FIRST YEAR OF IMPLEMENTATION	SECOND YEAR OF IMPLEMENTATION	THIRD YEAR OF IMPLEMENTATION
125	125	125
FOURTH YEAR OF IMPLEMENTATION	FULL TIME	
125	ECTS MINIMUM ENROLLMENT	ECTS MAXIMUM ENROLLMENT
FIRST YEAR	60.0	240.0
REMAINING YEARS	48.0	240.0

	PART TIME	
	ECTS MINIMUM ENROLLMENT	ECTS MAXIMUM ENROLLMENT
FIRST YEAR	30.0	240.0
REMAINING YEARS	30.0	240.0
RULES FOR PERMANENCY		
http://www.uma.es/secretariageneral/normativa/propia/consejo/Junio_2011/Anexo04.pdf		
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
Yes	No	No
GALICIAN	VALENCIAN	ENGLISH
No	No	Yes
FRENCH	GERMAN	PORTUGUESE
No	No	No
ITALIAN	OTHER	
No	No	

2. JUSTIFICATION, ADEQUACY FOR PROPOSAL AND PROCEDURES

See anexess, paragraph 2.

3. COMPETENCES

3.1 CORE AND GENERAL COMPETENCES
CORE
CC1 – Ability to prove, recall and understanding knowledge in a field of study which are suposed to be from the general secondary education, and is typically at a level which, although it is supported by advances textbooks, includes also some aspects which imply knowledge of the forefront of their area of study.
CC2 – Ability to apply their knowledge to their work or vocation in a profesional way and have the competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study.
CC3 – Ability to gather and interpret relevant data (usually within their field of study) to make judgements including consideration on relevant social scientific or ethical aspects.
CC4 – Ability to communicate information, ideas, problems and solutions to specialized and unskilled audiences.
CC5 – Ability to develop those learning skills necessary to undertake further studies with a high degree of autonomy.
GENERAL
DA1.- Ability to conceive, write, plan industrialize and sign projects in the field of Industrial Design Engineering and Product Development, related to the conception, development, exploitation and other tasks associated to product and product family portfolio of products and associated support systems.
DA2- Ability to manage the activities under the development of products, from the perspective of the life cycle in the field of Industrial Design and Product Development.
DA3.- Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.
DA4.- Ability to manage the design and innovation with strategic and forward-looking approach in terms of products, and processes distributed and concurrent product development in a business context.
DA5.- Ability to generate scale models and rapid prototypes, short series and industrialization of the product under economic criteria, safe and environmentally friendly.
DA6.- Ability to design integrated products into the company, users, groups, culture and environment through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Industrial Design and Product Development Engineer, under ethical criteria.
DA7.- Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of Industrial Design and Product Development, wether for the courts of law, government and private company.
DA8.- Ability for modeling, simulation and optimization of products in the context of a proposed industrial product, articulating the basic knowledge of the branch of engineering and technological knowledge specific of the design specialty and product development associated tools.
DA9.- Knowledge of the history of Industrial Design and aesthetic movements in relation to Industrial Design, characterization styles product design.
DA10.- Ability for artistic expression with classical and expressive computer-assisted techniques.
DA11.- Ability for analysis and synthesis of forms, color and texture, composition, harmony of the formal aspects of the product, and the application of social psychology and anthropology of the formal attributes of the product and semiotics indicial.Ability for analysis and synthesis of form, color and texture, composition, harmony of the formal aspects of the product, and the application of social psychology and anthropology of the formal attributes of the product and the indexical semiotic.
DA12.- Ability to apply methodologies, techniques and tools for designing and developing products which enable a sustainable product design, packaging, and instructions in the different sectors of the habitat, consumption, furniture urban, industrial equipment and service organizations.

DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and required standards
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
DA15.- Knowledge of basic matters, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.
DA16.- Knowledge and application of basic principles of economics and human resource management, organization and project planning, as well as legislation, regulation and standardization in the field of design and development of projects portfolio ranges, lines and product family.
DA17.- Knowledge of graphic design and the information associated with the industrial design company systems, such as graphic design, signage and corporate identity design.
DA18.- Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT[1].
DA19.- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.
3.2 CROSS-CURRICULUM COMPETENCES
No data
3.3 SPECIFIC COMPETENCES
DB1.- Ability to solve mathematical problems which may arise in engineering. Ability to apply knowledge of linear algebra; geometry; differential and integral calculus; differential equations and partial derivatives; numerical methods; numerical algorithms; statistics and optimization.
DB2.- Understanding and mastering the basic concepts of the general laws of mechanics, thermodynamics, , electromagnetism and their application to solving engineering problems.
DB3.- Basic knowledge of the use and programming of computers, operating systems, databases and programs computing with applications in engineering.
DB4.- Ability to understand and apply the principles of basic knowledge of general chemistry, organic and inorganic chemistry and applications in engineering.
DB5.- Ability for spatial vision and knowledge of graphic representation techniques, both traditional methods of metric and descriptive geometry, and geometry through applications of computer-aided design.
DB6.- Adequate knowledge of the business concept, institutional and legal framework of the company. Organization and management companies.
DC1 - Knowledge of the fundamentals of science, technology and materials chemistry. Understanding the relationship among microstructure, synthesis or processing and materials properties.
DC2 - Basic knowledge of production and manufacturing systems.
DC3.- Applied knowledge of business organization.
DC4.- Knowledge of applied thermodynamics and heat transmission. Basic principles and their application to solving engineering problems.

[1] ICT: Information and communication technology

DC5.- Knowledge of the basic principles of fluid mechanics and its application to solving problems in the field engineering. Calculating pipes, fluid channels and systems channels.
DC6.- Knowledge of the principles of the theory of machines and mechanisms.
DC7.- Knowledge and use of the principles of the strength of materials and product structures.
DC8.- Applied knowledge of business organization.
DC9.- Knowledge and use of the principles of circuit theory and electrical machines.
DC10.- Knowledge of the basics of electronics.
DC11.- Knowledge of the basics of automation and control methods.
DC12.- Knowledge and Skills of Technical Drawing
DC13.- Knowledge and ability to organise and manage projects. Knowing the organizational structure and functions of a project office.
DC14.- Knowledge and skills of engineering projects and product industrialization.
DC15.- Design process. Synthesis and assessment of knowledge of design science applicable to the design of an industrial product, subjects explained in conceptual design and design methodology.
DC16.- Projective Methodology. Understand and apply project documentation. Apply knowledge of projective methodology and other subjects taught in a projective problem.
DC17.- Project management. Coordinate teamwork, quality standards apply to the project and plan and control the development of a project; learn the basic concepts of project management; know the activity projective in the design field.
DD1.- Ability to choose, relate and apply methods and techniques of industrial design formalised in relation to a target innovation, improvement or efficiency.
DD2.- Ability to apply technical Fuzzy front end. Creativity applied. Triz. Invention, patent and design protection industry. Design for X: Design for Reliability and Quality. Design for Six Sigma: Taguchi and Design of Experiments.
DD3.- Ability to perform reverse engineering. Development models, models and prototypes.
DD4.- Ability to formulate and realize proposals for design innovation by distributed teams. Concurrent engineering tools and ICT collaborative engineering.
DD5.- Ability to perform economically design proposals and sustainable products from the knowledge of theory and product design. Business strategy. Marketing mix. Product platform and modular design. Packaging.
DD6.- Ability to perform socially sustainable design proposals from the knowledge of ergonomics, interaction design and product safety for both normal and special populations. Ergonomic design software tools.
DD7.- Ability to perform environmentally sustainable design proposals from knowledge of engineering lifecycle. Environmental impact, life cycle analysis, eco-design, eco-innovation and eco-labeling. Eco-design software tools.
DD8.- Ability to design proposals products from the knowledge of sensory and symbolic properties environmental materials.
DD9.- Knowledge of basic design and Packaging.
DD10.- Understanding Concurrent Engineering from everything concerning the PDPD (Process Design and Product Development)
DD11.- Knowledge of assessment methodologies, design optimization and product development.

DD12.- Ability to conceptualize mathematical and geometric transformations entities. Modeling processes simulation design and computer assisted product engineering.
DD13.- Ability to model, simulate and manage product data from the perspective of the life cycle.
DD14.- Ability to formalise, solve and simulate by conventional methods or computer aided graphics engineering problems from the knowledge of metric geometry and descriptive geometry. Technical drawing. Functional dimensioning.
DD15.- Ability to analyze products from the aesthetic, historical, hermeneutical, semiotic, sociological and anthropology knowledge.
DD16.- Knowledge of fundamentals of aesthetic, evolution from aesthetic ideas to be shown at the design analysis industrial products.
DD17.- Knowledge of history of industrial design to operate as an actor of material culture from sustainability culture.
DD18.- Ability to make formal proposals product design with conventional techniques artistic expression (chiaroscuro, charcoal, pastel, watercolor, colored pencils, markers, tempera, airbrush) and computer assisted.
DD19.- Ability to communicate the product with illustrations, styling and sketches research, exploration, explanation and seduction.
DD20.- Ability to make proposals for analysis and synthesis of forms, from the knowledge of morphological variables: composition, harmony, rhythm, form, color, light and lighting, textures product, semantic and perceptual aspects of product.
DD21.- Complementary knowledge of metrology, calibration and accreditation.
DD22.- Knowledge and capacities for the application of materials engineering knowledge and skills for application of engineering materials.
DO1.- Ability to develop skills and abilities to perform graphic design projects, oriented mainly to the image of the Company, Brand and Product, Corporate Identity, Branding and Packaging.
DO2.- Knowledge of the structuring of a project.
DO3.- Understanding the methodology for the implementation phase of the General Theory Project.
DO4.- Application of the knowledge acquired to the planning issues, administration and control of projects.
DO5.- Knowledge of basic techniques and standards for images compression.
DO6.- Knowledge of the different color representation systems.
DO7.- Knowing the basic algorithms to improve an image.
DO8.- Knowing the fields of application of digital image analysis.
DO9.- Ability to display a product presentation in multimedia format.
DO10.- Ability to communicate through images.
DO11.- Ability to differentiate features from the spoken expression and written expression characteristics.
DO12.- Ability to delimit a topic and appropriate management of ideas.
DO13.- Ability to correctly draft a text and compose a speech in a logical order, providing the accurate information and according to the grammatical and lexical rules established.
DO14.- Ability to make correct use of intonation and use their expressive possibilities.
DO15.- Ability to publicly launch a project or a report and present a topic to a specified audience.
DO16.- Understand the meaning and necessity for safe working conditions.
DO17.- Know the responsibilities of the occurrence of accidents, features and methods in solving labor disputes.
DO18.- Knowing in detail the basics of Safety Inspection and Accident Investigation. Methodology and Implementation.
DO19.- Know the basics of scientific documentation and information sources in industrial hygiene. Knowledge the basics of research of occupational diseases.

DO20.- Knowing the main chemical and biological health hazards physical.
DO21.- Knowledge and ability to determine the characteristic parameters of the behavior of materials in different conditions.
DO22.- Ability to select materials for specific applications.
DO23.- Capacity for the implementation of integration in manufacturing design criteria.
DO24.- Basic knowledge of modeling discrete event systems and dynamic systems.
DO25.- Knowledge and use of the principles of circuit theory and electrical machines.
DO26.- Ability to calculate and design electrical installations of low and medium voltage.
DO27.- Ability to identify and evaluate opportunities for energy savings and renewable energy integration in products: industrial processes, buildings, and transportation; leading to reduced production costs and operation, reduced environmental impact and product differentiation in the market compared to other less efficient.
DFG.- Ability to perform an original exercise individually, present and defend it to a tribunal, consistent in a project of Design Engineering and Product Development in professional character, which the skills are synthesized on lessons learned.

4. ACCESS AND ADMISSION OF STUDENTS

4.1 PREVIOUS INFORMATION SYSTEMS

See annexes. Paragraph 3.

4.2 ENTRY REQUIREMENTS AND ADMISSION CRITERIA

Article 42 of the Organic Law of Universities 6/2001 of December 21st, states that all the Spaniards have the right to study at the University, under the terms established in the legal system and for access to the University will need to be in possession of the Baccalaureate or equivalent. This article points out that, in addition, in all cases, and in accordance with the provisions of Article 38 of the Organic Law of Education 2/2006 of May 3rd, students will need to pass one only exam to access to university.

Despite the foregoing, paragraph 4 from Article 42 of the Organic Law of Universities establishes that, to facilitate retraining and reskilling and full and effective participation in cultural, economic and social life, the Government, prior Universities Council report, shall regulate the procedures to access the university of those who, proving a working or professional experience, do not have the educational degrees legally required to that effect. This access system, which will allow admission to any university, academic CENTRE and teaching CENTREs, may also be made use, under the conditions established for such purpose, by those who, unable to prove that experience, have exceeded a certain age.

In order to accommodate these and other forms of access to official university degree and the procedure for admission to the Spanish public universities, the Royal Decree 1892/2008, of November 14th (BOE[2] number 283, on 24-11-2008) has been dictated.

According to the provisions of the aforementioned Royal Decree to access the official university degree in Spanish universities, under the conditions for each case which are determined in the Royal Decree, those who accomplish one of the following requirements:

- Those who are in possession of the Baccalaureate to which Articles 37 and 50.2 of the Organic Law of Education 2/2006 of May 3rd, are referred and have passed the entrance examination related by the Article 38 of the aforementioned law. This test shall assess, along with their grades in high school, academic maturity, knowledge and ability of students to successfully follow university education. Chapter II of the Royal Decree we have been quoting, regulates the conditions of performance and features of the test, which shall be carried out, generally, at the university assigned to the secondary school in which the Baccalaureate was obtained.

- Those in possession of any of the degrees or certificates listed below, corresponding to syllabus of previous educational arrangements, or foreign studies certified or validated by the same and have passed the entrance test referred by the previous paragraph:
· Baccalaureate relevant to the ordination of the education system regulated by the Organic Law 1/1990 of October 3rd, of General Organisation of the Educational System.
· Supporting certificate of having passed the the University Orientation Course.
· Supporting certificate of having passed the Pre-University Course.
· Any other degree that the Ministry of Education, Social Policy and Sport declares equivalent to the Baccalaureate regulated by the Organic Law of Education 2/2006 of May 3rd.

- Students from educational systems of Member States of the European Union or other countries with which Spain has signed international agreements in this regard, under Article 38.5 of the Organic Law of Education 2/2006 of May 3rd, that meet the requirements in their respective countries for university admission. These students may access the Spanish university in the same conditions as students who passed the admission test referred to in the preceding two paragraphs.

- Students from foreign education systems, prior application for approval of the origin degree to the Spanish Baccalaureate and passing the access test to university organised by the National Distance Education University (UNED).

- Those who are in possession of the degrees of Higher Technical corresponding to the teachings of Vocational and Artistic Education or Higher Sports Technician corresponding to Sports Education referred by the articles 44, 53 and 65 of the Organic Law of Education 2/2006. These students do not have to perform any access test.

- People over twenty-five years, according to the provisions of the additional twenty-fifth order of the Organic Law of Universities 6/2001 of December 21st. They may be able to access the official Undergraduate university teachings by passing an entrance exam. They may only attend that test access those who reach or have reached 25 years of age by October 1st of the calendar year in which this test is held, whose characteristics are regulated in Articles 28 to 35 of the Royal Decree.

- Those who accredite working and professional experience in accordance with the provisions of Article 42.4 of the Organic Law of Universities 6/2001 of December 21st, as amended by Law 4/2007 of April 12th. Candidates with working and professional experience related to these studies may access through this channel, with none enabling academic degree for university entrance in other ways and reach or have reached the age of 40 before October 1st of the academic year.

Access will be performed with respect to the specific teachings offered by the university, for which the applicant will address the application to the Chancellor of the university

The University of Malaga shall establish accreditation criteria and scope of the working and professional experience related to any of the undergraduate courses, so as to allow applicants to order. Such criteria shall include, in any case, a personal interview with the candidate.

- People over forty-five years, according to the provisions of Article 42.4 of the Organic Law of universities 6/2001 of December 21st, as amended by Law 4/2007 of April 12th. They will have to pass an entrance test whose characteristics are detailed in Articles 37-44 of Royal Decree 1892/2008; not possess any academic degrees enabling access to the university by other means; and being unable to accredit working and professional experience.

[2] BOE: en español, Boletín Oficial del Estado.

- Those in possession of an official university undergraduate degree or equivalent.

- Those who are in possession of an official university bachelor's degree, Technical Architect, Technical Engineer, Graduate, Architect, Engineer, corresponding to the previous ordinance of university education or equivalent.

- Those who have completed partial abroad university studies, or have conclude them, do not have obtained their official approval in Spain and wish to continue studies in a Spanish university. In this case, at least 30 credits should be recognised by the corresponding Univesity.

Access to the Spanish university from any of the events just related will be carried out in full respect of fundamental rights and principles of equality, merit and ability.

Likewise the principles of universal accessibility and design for all will be considered as established in the Law 51/2003 of December 2nd, of equal opportunities, non-discrimination and universal accessibility for people with disabilities.

Likewise, it will be ensured that the admission of students to the official university degree teaching is general, objective and universal, valid in all Spanish universities and satisfies the criteria in line with the European Higher Education Area.

As established in the Single Transitional Provision of Royal Decree 1892/2008 and in accordance with Article 17 of Royal Decree 806/2006 of June 30th, by which the implementation calendar of the new education system ordinance is established by the Organic Law 2/2006 of June 3rd, on Education, the entrance test regulated by Chapter II of this Royal Decree 1892/2008 shall be applied from the academic year 2009-2010. Until the end of the academic year 2008-09 shall be applicable the Royal Decree 1640/1999, of October 22nd, by which the entrance test to university studies is regulated, as amended and supplemented by Royal Decrees 990/2000, of June 2nd, 1025/2002, of October 4th and Royal Decree 406/1988, of April 29th, on the organisation of the aptitude tests for access to faculties, technical schools and university colleges, and composition of the examination board as amended by Royal Decree 807/1993, of May 28th.

According to the provisions of the Article 17 of Royal Decree 806/2006, of June 30th, by which the implementation calendar of the new education system is established by the Organic Law 2/2006 of June 3rd, on Education, amended by the first final provision of Royal Decree 1467/2007, of November 2nd, by which the Baccalaureate structure is established and its minimum teachings are set, the entrance test regulated by Chapter III of the Royal Decree 1892/2008, shall be applied from October 1st, 2009. Until September 30th of 2009, shall be applicable the Order of June 12th, 1992, by which the aptitude tests for students with recognised foreign studies to access to Faculties, Higher Technical Schools and University Colleges are regulated, amended by Order of May 13th, 1993, and the Order of May 4th, 1994.

The entrance test for people over than 25 years, regulated by Article 28 of Royal Decree 1892/2008, shall be applicable from January 1st, 2010. Until December 31st, 2009, the provisions of Royal Decree 743/2003, of June 20th, shall be applied by which the entrance test to the University for people over 25 years is regulated.

The entrance test for people over than 25 years, regulated by Article 28 of Royal Decree 1892/2008, shall be applicable from January 1st, 2010. Until December 31st, 2009, the provisions of Royal Decree 743/2003, of June 20th, shall be applied by which the entrance test to the University for people over 25 years is regulated.

The access of undergraduates regulated by Article 26 of Royal Decree 1892/2008 shall be applied to the admission procedures to the university from the academic year 2010-2011. Until that time calculating the admission punctuation to official university degree teachings shall be performed according to the provisions of the Resolution of June 4th, 2001, by the General Directorate of Universities, by which the rules for the calculation of the average punctuation on the academic record of students who access university teachings leading to obtaining official degrees since Vocational Training, according to the preemption provisions established in Annex II of Royal Decree 1892/2008.

Access through accreditation of working and professional experience, in order to take official university degree teachings, regulated by Article 36 of Royal Decree 1892/2008, shall be applied to the admission procedures to the university from the academic year 2010-2011.

Access to university for older than 45 years, in order to take official university degree teachings, regulated by articles 37-44 of Royal Decree 1892/2008, shall be applied to the admission procedures to the university from the academic year 2010- 2011.

In addition to accredit the established requirements for access to university for some of the paths just noted, the admission request to perform some specific studies shall be carried out according to the procedure described in Chapter VI of Royal Decree 1892/2008. In this regard it should be observed that place booking quotas are established for certain paths of reservation, in the percentages indicated in the following table:

WAY OF ACCESS	% MINIMUM	% MAXIMUM
Older tan 25 years	2%	-----
Older tan 45 years and older than 40 with working experience	1%	3%
Students with university degree or equivalent	1%	3%

Furthermore, five percent of the seats available for students who have recognised a degree of disability equal or superior to thirty three percent and for students with permanent special educational needs associated with personal circumstances of disability is set aside, while during their previous education have needed resources and support for their full educational standards.

Also, a minimum rate of three percent of the positions offered by the universities shall be reserved for those who accredit their status as top-level or high performance athletes and meet the corresponding academic requirements. The institutions providing studies and teachings referred by the fourth paragraph of section 1 of Article 9 of Royal Decree 971/2007 of July 13th, on high-level and high performance athletes, shall reserve an additional quota equal to at least five percent available places for these athletes, although this quota may be increased.
According to the provisions of article 75 of Andalusian Law of Universities 15/2003, for the sole purposes of admission to the university CENTREs, all Andalusian public universities constitute a single district, tending to avoid the requirement of several EVALUATION tests. The performances to be undertaken for this purpose shall be carried out by a technical committee of the Andalusian Council of Universities.
It has not been established conditions or special access test to the degree to which this report refers.
Despite the above, the recommended entry profile should be:
· Good previous education in mathematics and physics
· Skill and speed for numeric calculation and solving quantifiable problems
· Ability to observation and analysis
· Logical and abstract reasoning
· Personal attitude of initiative
· Ability to establish relationships between observed reality and the description of it by mathematical models
· Ability to team cooperation
· Personal work organization
· Ability to work under pressure
· Ability to solve problems with initiative, decision making, creativity and critical thinking
· Leadership, responsibility and caring for the practical application of knowledge to solve real problems
· Manual skill in handling instruments or equipment
· High capacity for mobility and integration in different working environments, multidisciplinary and multilingual
· High communication capability
· Versatility to manage new situations
According to the established in the Single Transitional Provision of Royal Decree 1892/2008, Chapter VI, on admission to the Spanish public universities, it will be applied to the admission procedures to university from the academic year 2010-2011. Until reached that point, the admission of students in the Andalusian universities are governed by the rules agreed by the Commission of University Unique District of Andalusia.
On the Internet address, http://www.infouma.uma.es/acceso/preinscripcion/default.htm, future students shall find accurate information about access and admission systems.

4.3 SUPPORT FOR STUDENTS

4.3 Support for students

4.3.1 Welcoming to the new students.
Hosting action: academic event in which the Management Team of the High Polytechnic University School welcomes the new students of all degrees. It is performed the day before the first official class and in this event all members of the management team are presented, explaining the functions of each one of them. Also allusions are made to CENTRE infrastructure, information technology, website, ON-LINE campus of the University of Malaga and questions that may arise are answered. It also has the presence of representatives of the delegation of students and the Dean of the College of Experts and Industrial Engineers of Malaga.

4.3.2. Centre support and guidance to students once enrolled.

Once students are enrolled, they will receive a CD in which they can find all the information about the CENTRE and the syllabus of their degrees: career opportunities, schedules, exam schedule, access requirements to the degree, etc.Also, this CD collects important aspects of the convergence process to European Higher Education Area within the branch of engineering and in particular the sub-branch of industrial engineering.

4.3.3. Support and guidance for foreign students.

Exchange students welcomed in the UMA from partner universities are assigned an academic coordinator and, upon request, a volunteer student who shall be a companion tutor, facilitating integration into the university and academic life at the University of Malaga.

Some welcomed students, according to agreement with their home university, shall be provided and sometimes subsidized accommodation and meals from the budget of International Development Cooperation.
4.3.4. Specific support for students with disabilities.

The University of Malaga considers that attention to the educational needs of students with disabilities is a recognition of the values of the person and their right to higher education. For this reason and with the objectives of: a) to ensure equal opportunities and full integration of disabled university students in academic life and b) to promote sensitivity and awareness of other members of the university community, the University of Malaga that, through its Vice-Chancellorship of Social Welfare and Equality, offers an office intended to the assistance of their students with disabilities: Support Service for Students with Disabilities (SAAD[3]).

This service is intended to guide and assist people with a disability percentage similar or higher than 33%, wishing to enter or are enrolled in the University of Malaga, trying to solve the needs arising from the student's disability situation, that hinder the development of their university studies and can put them in a disadvantaged position. These needs vary depending on the person, TYPE of disability, studies performed, and socio-economic status, so it will be necessary to conduct an assessment and individualized attention to each student.

Below, some examples of resources are listed. They are illustrative, since, depending on the student with disabilities may arise new measures or vary the nature of the currently existing:

- Academic and vocational guidance and counseling to students and parents.
- Curricular adaptations in coordination and collaboration with the competent faculty.
- Technical aids for curricular access: recorders, carbonless notebooks, FM transmitters...
- Seat reservation in Classroom s and university gauging.
- Sign language interpreter. Adaptation of Classroom material: benches, desks, chairs...
- Adaptation of class material: notes, practice.

4.4 TRANSFER SYSTEM AND RECOGNITION OF CREDITS

Recognition of credits in Superior Officers non-University Teachings

MINIMUM	MAXIMUM
0	228

Recognition of credits in Degrees.

MINIMUM	MAXIMUM
0	36

Detailed Specific Degree

See anexess. Paragraph 4.

Recognition of credits obtained by Accreditation and Professional Experience

MINIMUM	MAXIMUM
0	36

Transfer System and Credit Recognition

The Royal Decree 1393/2007 of October 29th, by which the ordinance of official university education is established, provides in Article 6 that in order to make effective the mobility of students, both inside and outside the country, universities shall elaborate and make public their regulations on the credits recognition and transfer system, subject to the general criteria established in this regard in the aforementioned Royal Decree.

In compliance with this, the University of Malaga, through the agreement of the Government Council, adopted at the meeting held on June 23th, 2011, and published in the BOJA dated August 2nd, 2011, has established the "Guiding rules of studies or activities recognition, and working or professional experience, for the purpose of obtaining official university degrees of Undergraduate and University Master as well as credits transference."

Recollecting the provisions of Royal Decree 1393/2007, the quoted rules contemplate the possibility of recognition of the following studies and/or activities:

- Subjects and/or credits obtained, corresponding to studies leading to university degrees of official value throughout the national territory, undertaken in university centres.
- Studied subjects, corresponding to other university degrees different from the ones of official value throughout the national territory.
- Studied subjects, corresponding to higher artistic education.
- Studied subjects, corresponding to advanced vocational education.
- Studied subjects, corresponding to professional plastic arts and design higher education.
- Studied subjects, corresponding to sports higher education.
- Work experience resulting from participation in Cooperative Education Programs (Internships).
- Work or professional experience not related to Educational Cooperation Programmes.
- Participation in cultural, sporting, student representation, charity and cooperation university activities.

Those who possess student status with open academic record in the corresponding degree of the University of Malaga may request the corresponding recognition of studies, activities or professional experience during the corresponding enrollment period (for new students in the respective Centre and degree of the University of Malaga), or during March of each academic year (for students already enrolled in that Centre and Degree).

Applications for studies or professional experience recognition shall be resolved by the Dean or Director of the corresponding Centre after a report of "Recognitions Committee" of the corresponding degree on the suitability between the acquired and alleged COMPETENCES and knowledge, and those required by the corresponding syllabus at the University of Malaga, and in accordance with the following criteria:

- In no case the Final Degree Projects may be recognised or validated.

- When the degree of origin and destination belong to the same branch of knowledge, the alleged credits obtained in subjects considered as basic training of the quoted branch of knowledge shall be recognised in accordance with the provisions of Annex II of the Royal Decree 1393/2007. In the event the

[3] SAAD: En español, Servicio de Apoyo al Alumnado con Discapacidad

credits corresponding to all basic subjects of the origin degree, recognition of at least 36 of those credits shall be ensured.

• When the degree of origin and destination belong to different branches of knowledge, shall be recognised the alleged credits obtained in subjects considered as basic training for the branch of knowledge to which the degree of destination belongs, in accordance with the provisions of Annex II of Royal Decree 1393/2007.

• They shall not be recognised the credits obtained in the degree of origin by validation or count, where they have been recognised for the same degree of destination the studies that originated the aforementioned validation or count, and vice versa.

• Credits obtained in other degrees other than those of official status shall not be recognised in a number greater than 15% of the total of the degree of destination, except in the case referred by the article 6.4 of the Royal Decree 1393/2007 (the degree has been extinguished and replaced by the official degree).

• It shall not be possible to recognize (non-university) official higher education which have been used by the applicant for access to the degree of destination.

• The recognition of accredited working or professional experience not related to Educational Cooperation Programmes, shall be made taking into account the relationship with the COMPETENCES inherent to the degree, and shall be counted at the rate of one credit for each accredited year. In the case of work experience related to Educational Cooperation Programmes, the count shall be performed at a rate of one credit for every twenty-five accredited hours. In both cases, the number of counted credits may not exceed 15% of the total of the corresponding degree.

The recognition applications for participating in university cultural, sports, student representation, solidarity and cooperation activities, shall be resolved by the sole Government body of the University of Malaga with COMPETENCES in each one of the quoted subjects, according to the following criteria:

• It shall only be possible the recognition for those degrees in whose syllabus this possibility is expressly contemplated.

• It shall only be possible the recognition of carried out activities after the first enrollment into the CENTRE and degree of the University of Malaga to which the respective recognition is wished to apply.

• It shall not be possible to recognise a higher number of credits above 5% of the total of destination degree altogether.

• Within the limit prescribed in the preceding paragraph, a credit shall be counted every 25 hours of participation in university cultural, sports, student representation, solidarity and cooperation activities.

• Studies of specialization, updating and continuous or permanent training or postgraduate shall be considered as university cultural activities while accredited by other degrees issued by the University of Malaga, as well as activities of academic and/or professional orientation organised by the University.

• They may be considered as university cultural activities those courses organised by the foundations promoted by the University of Malaga

• They shall only be considered university activities of student representation those one belonging to collegiate government bodies and/or representation of a Spanish University, or fees arising from those, provided by the University Statutes or theirs implementing rules.

Furthermore, these rules provide for the possibility, at the request of the corresponding student, of credit transfer, understood as the constancy in the academic record of all the credits obtained by the student in official teachings corresponding to the order established by the Royal Decree 1393/2007, previously studied in the same or another University, and have not led to the obtaining of an official degree.

4.5 COURSE OF ADAPTATION FOR GRADUATES

1. ADAPTATION COURSE DESCRIPTION.

1.0 DESIGNATION

UNIVERSITY EXPERT OF ADAPTATION TO DEGREE IN INDUSTRIAL DESIGN ENGINEERING AND PRODUCT DEVELOPMENT

1.0.1 STUDY TYPE

	MASTER (60 credits minimum)
x	EXPERT (30 credits minimum)

1.0.2 FIELD

	Health Sciences
	Sciences
	Social and Legal Sciences
	Art and Humanities
x	Engineering and Architecture

1.1 CENTRE/S WHERE TEACHING TAKES PLACE

1.1.1 Place of teaching (Classroom , on-line campus...)
(Space reservation will be detailed)

HIGHER POLYTECHNIC SCHOOL

1.2 TYPE OF TEACHING

	In person class	x	Blended learning		On-Line

1.3. INFORMATION WEBSITE FOR STUDENTS:

http://www.uma.es/vrue/tpropias/index.html

1.4. ACADEMIC DIRECTOR

Name and surname

	NIF
OSCAR DE COZAR MACIAs	33396022

Category

Lecturer

Knowledge Area

GRAPHIC EXPRESSION IN ENGINEERING

Department

GRAPHIC EXPRESSION, DESIGN AND PROJECTS

Signature: OSCAR DE COZAR MACIAS

ACADEMIC VICE- RECTOR

Name and surname

	NIF
MOYA GARCIA, Mª VICTORIA	25579246A

Category

Senior Professor

KNOWLEDGE AREA

MATERIAL SCIENCE AND METALLURGICAL ENGINEERING.

DEPARTMENT

CIVIL ENGINEERING, MATERIALS AND MANUFACTURING

Signature: Mª VICTORIA MOYA GARCIA

1.5 NUMBER OF OFFERED SEATS

Minimum number of students:	15	Maximum number of students:	30

1.6. Number of offered European credits of the degree	36 ECTS

1.7. BRIEF DESCRIPTION OF THE COURSE

A blended learning course which provides the necessary COMPETENCES to complete the formationofor graduates in Industrial Design Engineering specialty of Design opting to next Degree in Industrial Design Engineering and Product Development

1.8 SYLLABUS

Module I: Competential updating with 36 ECTS divided into six subjects of 6 ECTS each: Math, MATERIAL TECHNOLOGY , Projects of Design, Packaging, Energy engineering and fluid mechanics, Electronics and Automatization of the product

1.9. DURATION:

Start Date	End Date	Timetable
October 4, 2013	February 28, 2014	Friday: 17:00/21:30 h; Saturday: 8:45/14:15 h.

Information for pre-admission

http://www.juntadeandalucia.es/economiainnovacioncienciayempleo/

Aplication period:

Start date End Date

September 9, 2013	September 21, 2013

Enrollment period:

Start date End date

September 23, 2013	September 27, 2013

1.10. PRICES AND TIME LIMITS:

DEGREE	Price per credit	Total price	Number of credits
MASTER	€	€	
EXPERT	26€	936€	36 ECTS

Installment payment	Yes x No
Number of Payments / Payment Deadline	Amount
Pre- registration: SEPTEMBER 25	300 €
1st period: OCTOBER 3	318€
2nd period: NOVEMBER 3	318€

2. JUSTIFICATION

2.1. Justification of the proposed DEGREE, claiming academic, scientific or professional interest

The Royal Decree 1393/2007, of October 29th (BOE of October 30th), by which the ordinance of official university education is established, in its Fourth Additional Provision, section 3, indicates that those being in possession of an official DEGREE, Technical Architect or Technical Engineer, and intend to take lessons aimed at obtaining an official university Degree, shall obtain recognition of applicable credits in accordance with the provisions of Article 13 of the aforementioned Royal Decree, giving to it powers to universities which may make such recognition, based on the correlation between the COMPETENCES and knowledge associated with the remaining subjects studied by the applicant. This point has been the subject of a report, dated November 20th, 2009, the Subdirectorate General of Academic Coordination and Legal System of the Directorate General of University Policy of the General Secretariat of Universities, Ministry of Education.

In the sense described in the preceding paragraph, must be considered:

1) The curricula being phased out are governed by RD 1402/1992, 1403/1992, 1404/1992, 1405/1992 and RD 1462/1990 of November 20th, by which the typical general guidelines of study leading to the award of degrees of Technical Engineer in Electricity, Industrial Electronics, Mechanics, Industrial Chemistry and Industrial Design are established. In these RD is established, first, that the global teaching load in no case shall be less than 205 credits or greater than the maximum of credits RD 1497/1987 allows for first-stage studies in the DEGREEs of Technical Industrial Engineering (Electricity, Industrial Electronics, Mechanics, Industrial Chemistry). On the other hand, it is established that the global teaching load in the degree of Technical Engineering in Industrial Design in no case shall be less than 180 credits.

2) The curricula (corresponding to the degrees of Technical Industrial Engineering, in its different specialties, and the degree of Technical Engineering in Industrial Design) were planned and developed at the Public University System of Andalusia, with a minimum of 217 credits, and specifically 225 at the University of Malaga.

3) The RD 1497/1987 in Article 7.3b) stated that the percentage of free choice credits for the curriculum of these students may not be less than 10% of the overall teaching load of the curriculum leading to the award of the official degree in question. All degrees of Technical Industrial Engineering and Technical Engineering in Industrial Design of the Public University System of Andalusia have a load of 10% of LRU credits corresponding to free choice subjects.

4) All Technical Engineering degrees contemplate as basic subject the Final Degree Project.

5) The RD 1954/1994 of September 30th, on recognition of DEGREEs to the catalog of Official University Degrees, created by the RD 1497/1987 of November 27th.
Since previous studies, to the entry into force of RD 1393/2007, keep all their academic and professional purposes, the degree of the previous academic system shall be recognised in full, and therefore, taking into account the above considerations, it is only fair that any degreed in Technical Engineering of the Industrial Branch had a recognition between 203 and 212 ECTS credits.
The above, together with the analysis of skills to acquire, implies to plan an adaptation course in which each Degree in Technical Industrial Engineering or Technical Engineering in Industrial Design, had a specific timetable for a maximum of 48 ECTS credits (a total of 36 ECTS credits in basic subjects, plus 12 ECTS credits corresponding to the Final Degree Project) which would serve to develop the skills not covered by the DEGREEs to be phased out and introduced in the degrees of Engineering of the Industrial Branch. This specific timetable will depend on the specific studied technology (industrial design, industrial electronics, electricity, mechanics or industrial chemistry). The skills to be developed in each specific timetable of the Adaptation Course would be focused primarily on the training COMPETENCES common to the industrial branch or product engineering.

The credits recognition of their degree and the completion of the Adaptation Course should give access, if you meet the academic requirements provided by the Verification Report of Engineering DEGREE of the Industrial Branch to which access is sought, to the Degree.

The proposed Adaptation Course includes a total of 36 credits, then is REQUIRED the completion of the Final Degree Project.

AND COMPETENCES

3.1. Objectives reflecting the overall orientation of the degree

Overall objective:

- Curricular adaptation to the training plan of new degrees within the European Higher Education Area in the field of Industrial Engineering branch.

Specific objectives:

- Increase knowledge and general training in the industrial sector.

- Upgrade the Technical Industrial Engineers specialized in Industrial Electronics into new COMPETENCES emerged after the implementation of the new degrees within the European Higher Education Area.

3.2. General and specific COMPETENCES that students should acquire during their studies and are required to grant the DEGREE

The COMPETENCES included here were agreed at the meeting of March 25th, 2011, of School Principals of the Andalusian Public University System that provide Technical Engineering DEGREEs. These COMPETENCES were selected from the Ministerial Order CIN/351/2009, collecting all those who were not covered by any of the Technical Engineering DEGREEs of the aforementioned Schools, so that each of them, within their university scope and their DEGREEs, may establish what compulsory subjects should be part of the adaptation course, thus completing the corresponding degree COMPETENCES. The study of these COMPETENCES was set in agreement with the Recognition Commitee and subsequent approval by the Centre Board of the Higher Polytechnic School of the University of Malaga, on date of November 26th, 2012.

COMPETENCE	DEFINITION
GENERAL COMPETENCES RD 1393/2007	• Ability to prove, recall and understanding knowledge in the area of Electrical Engineering and Industrial branch of the base of general secondary education,and is typically at a level which, althoughit is supported by advanced textbooks also includes some aspects which imply knowledge of the forefront of Electrical Engineering and

	Industrial branch. • Abilityto apply their knowledge to their work or vocation in a professional way and have competences typically demonstrated through devising and defending arguments and solving problems within Electrical Engineering and Industrial branch. • Ability to communicate information, ideas, problems and solutionsto both specialist and non-specialist audience. Students should have developed the skills needed to undertake further study with a high level of autonomy.
SPECIFIC COMPETENCESINDUSTRIAL DESIGN ENGINEERING AND PRODUCT DEVELOPMENT	• Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way. • Ability to solve mathematical problems which may arise in engineering. Ability to apply knowledge of linear algebra; geometry; differential and integral calculus; differential equations and partial derivatives; numerical methods; numerical algorithms; statistics and optimization. • Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues. • Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public. • Ability to develop those learning skills necessary to undertake further study with a high level of autonomy. • Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way. • Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations. • Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT. • Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT. • Ability to solve mathematical problems which may arise in engineering. Ability to apply knowledge of linear algebra; geometry; differential and integral calculus; differential equations and partial derivatives; numerical methods; numerical algorithms; statistics and optimization. • Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues. • Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public. • Ability to develop those learning skills necessary to undertake further study with a high level of autonomy. • Knowledge and ability to organise and manage projects. Knowing the organizational structure and functions of a project office. • Knowledge and skills of engineering projects and product industrialization. • Design process. Synthesis and evaluation of knowledge of design science applicable to the design of an industrial product, subjects explained in conceptual design and

design methodology.

- Projective Methodology. Understand and apply project documentation. Apply knowledge of methodology projective other subjects taught in a projective problem.
- Project management. Coordinate teamwork, quality standards apply to the project and plan and control the development of a project; learn the basic concepts of project management; know the activity projective in the design field.
- Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.
- Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts of law, government and private company.
- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and required standards
- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.
- Knowledge and capacities for the application of materials engineering.
- Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.
- Ability to manage the activities under the development of

products, from the perspective of the life cycle in the field of Industrial Design and Product Development.

- Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.
- Ability to generate scale models and rapid prototypes, short series and industrialization of the product under economic criteria, safe and environmentally friendly.
- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.
- Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts of law, government and private company.
- Ability for analysis and synthesis of form, color and texture, composition, harmony of the formal aspects of the product, and the application of social psychology and anthropology of the formal attributes of the product and the indexical semiotic.
- Ability to apply methodologies, techniques and tools for designing and developing products which enable a sustainable product design, packaging, and instructions in the different sectors of the habitat, consumption, furniture urban, industrial equipment and service organizations.
- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and required standards.
- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.
- Ability to perform economically design proposals and sustainable products from the knowledge of theory and product design. Business strategy. Marketing mix. Product platform and modular design. Packaging.
- Ability to perform socially sustainable design proposals from the knowledge of ergonomics, interaction design and product safety for both normal and special populations. Ergonomic design software tools.
- Ability to perform environmentally sustainable design proposals from knowledge of engineering lifecycle. Environmental impact, life cycle analysis, eco-design, eco-innovation and eco-labeling. Eco-design software tools.
- Knowledge of basic design and Packaging
- Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

	• Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study. • Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public. • Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy. • Ability for modeling, simulation and optimization of products in the context of a proposed industrial product, articulating the basic knowledge of the engineering branch and technological knowledge specific of the design specialty and product development associated tools. • Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way. • Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations. • Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT. • Knowledge of applied thermodynamics and heat transmission. Basic principles and their application to solving engineering problems. • Knowledge of the basic principles of fluid mechanics and its application to solving problems in the field engineering. Calculating pipes, fluid channels and systems channels. • Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study. • Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study. • Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public. • Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy. • Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems. • Ability to manage the activities under the development of products, from the perspective of the life cycle in the field of Industrial Design and Product Development. • Ability to generate scale models and rapid protoTYPEs, short series and industrialization of the product under economic criteria, safe and environmentally friendly. • Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way. • Knowledge of basic materials, technologies and tools which enable learning and development of new methods

	and technologies, as well as to equip them with the versatility to adapt to new situations. • Applied knowledge of business organization. • Knowledge of the basics of electronics. • Knowledge of the basics of automation and control methods. • Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study. • Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study. • Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

4.1 Information system, prior to registration and admission procedure and guidance to new students

PRIOR INFORMATION SYSTEM

A. Information available on website of the Centre: www.politecnica.uma.es in specific section for Adaptation to Degree.

B. Information Day. An information day on the specific course of adaptation as well as other alternatives will be performed. The corresponding call of the day will be carried out through the existing pathways for graduates, supported by the social partners for the broadest possible diffusion among those who are in possession of the relevant Title under the previous regulations.

C. Informative Diptychs. Several informative diptychs will be created to inform about the pathways of adapation and this Adaptation Course

To participate in the admission prcess at any Curricular Itenerary

An application for registration in an Adaptation Course taught in Andalusian Public Universities will need to be completed and submitted on the following electronic access point:

http://www.juntadeandalucia.es/economiainnovacioncienciayempleo/

University CENTRE can determine the registration limits for each itinerary and more than one period during the academic year.

The registration periods will be published on the electronic access point mentioned in the previous point, at least 15 days in advance and will be open for a period of not less than one week. Universities also make public such periods on the notice boards of their Admission Offices:

University of Malaga. Access Office. Campus Teatinos, s/n. 29071-Malaga.

WELCOMING PROCEDURE AND GUIDANCE

An academic event is performed, there the Academic Directorate of the degree, welcomes participants to the Adaptation Course. It is performed before the first official day of class and in this act of presentation of the course, arrangement thereof, participant professors, CENTRE infrastructure, computer media, website, ON-LINE campus of the University of Malaga and some question time.

4.2 Access requirements and conditions or special Access tests

Accessing the university education is an act regulated and RD 1892/2008, of November 14 which regulates and provides in Article 4.1, defining it as the guiding principle of access to the Spanish University, which will take place from any of the cases which the royal Decree refers to "full respect for fundamental rights and the principles of equality, merit and ability".
Accessing by the special way and contained in Resolution of the Directorate General of Universities laying in the agreement of February 6, 2013 of the Commission's Single District College student of Andalucía for the admission procedure is set to specific curricular itineraries for those having a degree of technical architect, engineer, graduate or teacher intending to obtain the degree.
http://www.juntadeandalucia.es/boja/2013/42/14

In this adaptation course can only be accessed by applicants with a degree in Technical Industrial Engineering Design and Product Development specialties, obtained according to plans regulated by the Organic Law 11/1983 studies, August 25, University Reform, make the adaptation course to access the degree according to the Organic Law 6/2001 of 21 December, on Universities.
Applicants must apply for registration and be in possession of a degree of Technical Industrial Engineering Design and Product Development specialty.

Acccess. Percentage of reservation of seats for those accrediting disability.

It is required to keep a 5 per cent of the offered seats to those who justify any disabling condition in an equal or higher than 33 percent grade

4.3 Criteria for selection of students if applications exceed the number of seats

- 60% academic records in the degree of origin.

- 40% Professional experience (only related to the degree).

The assessment is carried out based on a maximum of 10 points, 6 for the academic record and 4 for working experience.
The record is assessed on the maximum possible sbasic in this section, accounting for up to 6 points on the total of 10.
The valuation of professional experience is assessed based on a maximum of 4 out of 10. When an applicant exceeds the maximum sbasic in this section, he/she shall be given the maximum level, while the valuation of the other contestants will be proportionately. Therefore both, the sbasic achieved as the total points sbasicd in the competition must be regarded solely as a relative measure established with respect to other candidates in the same competition. For the same reason, in any case that sbasic can be extrapolated or comparable with that obtained in one or more other competitions where each candidadate takes part.

4.4 SUPPORT AND GUIDANCE TO STUDENTS, ONCE REGISTERED.

Once registered students are informed of the structure and organization of the degree, and the different communication ways to move any impacts on the development of the degree.

SPECIFIC SUPPORT FOR STUDENTS WITH DISABILITIES

The University of Malaga considers that attention to the educational needs of students with disabilities is a recognition of the values of the person and their right to a higher education. For this reason there is an office for the attention of students with disabilities: Support Service to Students with Disabilities (SAAD).

4.5 Selection criteria for awarding grants

Income.

Academic performance in the course

4.6 Transfer and credit recognition

According to RD. 1393/2007 of October 29, by which the management of the Official University Education is established, and RD. 861/2010, on July 2, approving the modification of the latter, the recognition of credits from the professional experience and unofficial teachings, will not exceed 15% of the total credits to constitute the Syllabus.

Considering that the Degree in Industrial Design Engineering and Product Development includes 240 credits, the maximum credits that could recognize is 36 credits.

As it is reflected in the agreement of the Committee of Degrees of the Industrial Branch in the University System Andalusian Public, the Academic Committee belonging to the body responsible for the Adaptation Course will performe the recognition of professional activity, based on reports issued by the corresponding social partners, the Official College of Expertises and Industrial Engineers or, alternatively, the Public Administration.

The equivalence for recognition is 2 ECTS per year of work experience related to the profession and related to inherent COMPETENCES in the subjects.

Distribution of the Syllabus in European credits

TEACHING METHODS	EUROPEAN CREDITS
Theory /practical teaching in Classroom	24 ECTS
Teaching on-line	12 ECTS
Work placements in companies	0 ECTS
Fnal Degree Project for Adapation Course	0 ECTS
EUROPEAN TOTAL CREDITS	36 ECTS
Total hours of class (theory /practice)	180
Total hours of students work (25 hours x 1 credit)	900

5.1.2. General explanation of the Syllabus planning

- Monitoring activities and study

- A theoretical and practical teaching material

- Problems

- Further reading

- Training test and / or assessment of each module / subject

- Consultations by email and / or discussion forums
This structure will allow to acquire the skills for each subject that will be evaluated by, at least, four partial exams for each of the subjects , as included in "5.2.4. Assessment and DEGREE systems.

5.2. Detailed description of the modules / subjects / subjects of the teachings in the Syllabys

GENERAL INFORMATION	
Designation of the Module	Module: **Competences updated. Subjects**: Mathematics (Algebra and Advanced calculus), Projects of Design, Material Technology, Packaging, Energy Engineering and Fluid Mechanics, Electronics and Product Automatization
Number ofEuropean Credits(in campus/off campus): 36 ECTS(6 ECTS each subject). Blended learning.	
Nature (REQUIRED / Optional): Required	
Temporary Unit: Semester	

5.2.1 COMPETENCES

COMPETENCES	DEFINITION
GENERIC COMPETENCES RD 1393/2007	• Ability to prove, recall and understanding knowledge in the area of Electrical Engineering and Industrial branch of the base of general secondary education,and is typically at a level which, althoughit is supported by advanced textbooks also includes some aspects which imply knowledge of the forefront of Electrical Engineering and Industrial branch. • Ability to apply their knowledge to their work or vocation in a professional way and have competences typically demonstrated through devising and defending arguments and solving problems within Electrical Engineering and Industrial branch. • Ability to communicate information, ideas, problems and solutionsto both specialist and non-specialist audience. • Students should have developed the skills needed to undertake further study with a high level of autonomy.

SPECIFIC COMPETENCES Industrial Design Engineering and Product Development	ALGEBRA ·Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way. ·Ability to solve mathematical problems which may arise in engineering. Ability to apply knowledge of linear algebra; geometry; differential and integral calculus; and differential equations partial derivatives; numerical methods; numerical algorithms; statistics and optimization. ·Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues. ·Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public. ·Ability to develop those learning skills necessary to undertake further study with a high level of autonomy. ADVANCED CALCULUS ·Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way. ·Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations. ·Ability to communicate and discuss proposals and conclusions in multilingual, specialized forums and unskilled, in a clear and unambiguous way, with the use of ICT. ·Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT. ·Ability to solve mathematical problems which may arise in engineering. Ability to apply knowledge of linear algebra; geometry; differential and integral calculus; and differential equations partial derivatives; numerical methods; numerical algorithms; statistics and optimization. ·Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues. ·Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public. ·Ability to develop those learning skills necessary to undertake further study with a high level of autonomy. PROJECTS OF DESIGN ·Knowledge and ability to organise and manage projects. Knowing the organizational structure and functions of a project office. ·Knowledge and skills of engineering projects and product industrialization ·Design process. Synthesis and EVALUATION of knowledge of design science applicable to the design of an industrial product, subjects explained in conceptual design and design methodology. ·Projective Methodology. Understand and apply project documentation. Apply knowledge of methodology projective other subjects taught in a projective problem. ·Project management. Coordinate teamwork, quality standards apply to the project and plan and control the development of a project; learn the basic concepts of project management; know the activity projective in the design field. ·Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study. ·Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study. ·Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public. ·Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy. MATERIAL TECHNOLOGY ·Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria. ·Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts, government and private company. ·Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and required standards ·Knowledge of basic materials, technologies and tools which enable learning and

development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

·Knowledge and capacities for the application of materials engineering

·Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

·Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

·Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

·Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

PACKAGING

·Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.

·Ability to manage the activities under the development of products, from the perspective of the life cycle in the field of Industrial Design and Product Development.

·Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.

·Ability to generate scale models and rapid protoTYPEs, short series and industrialization of the product under economic criteria, safe and environmentally friendly.

·Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.

·Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts, government and private company.

·Ability for analysis and synthesis of form, color and texture, composition, harmony of the formal aspects of the product, and the application of social psychology and anthropology of the formal attributes of the product and the indexical semiotic.

·Ability to apply methodologies, techniques and tools for designing and developing products which enable a sustainable product design, packaging, and instructions in the different sectors of the habitat, consumption, furniture urban, industrial equipment and service organizations.

·Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and required standards.

·Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

·Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.

·Ability to perform economically design proposals and sustainable products from the knowledge of theory and product design. Business strategy. Marketing mix. Product platform and modular design. Packaging.

·Ability to perform socially sustainable design proposals from the knowledge of ergonomics, interaction design and product safety for both normal and special populations. Ergonomic design software tools.

·Ability to perform environmentally sustainable design proposals from knowledge of engineering lifecycle. Environmental impact, life cycle analysis, eco-design, eco-innovation and eco-labeling. Eco-design software tools.

·Knowledge of basic design and Packaging.

·Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

·Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

·Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

·Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

ENERGY ENGINEERING AND FLUID MECHANICS

·Ability for modeling, simulation and optimization of products in the context of a proposed industrial product, articulating the basic knowledge of the engineering branch and technological knowledge specific of the design specialty and product development associated tools.

	·Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way. ·Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations. ·Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT. ·Knowledge of applied thermodynamics and heat transmission. basic principles and their application to solving engineering problems. ·Knowledge of the basic principles of fluid mechanics and its application to solving problems in the field engineering. Calculating pipes, fluid channels and systems channels. ·Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study. ·Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study. ·Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public. ·Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy. ELECTRONICS AND PRODUCT AUTOMATIZATION ·Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems. ·Ability to manage the activities under the development of products, from the perspective of the life cycle in the field of Industrial Design and Product Development. ·Ability to generate scale models and rapid prototypes, short series and industrialization of the product under economic criteria, safe and environmentally friendly. ·Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way. ·Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations. ·Applied knowledge of business organization. ·Knowledge of the basics of electronics. ·Knowledge of the basics of automation and control methods. ·Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study. ·Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study. ·Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

5.2.2 Learning activities and their relationship with the competences to be acquired by the student

- Theoretical and practical in person classes where the necessary knowledge for the achievement of cognitive and comprehensive COMPETENCES is transmitted.

- Self study which allows the student to develop the necessary skills of learning and application of knowledge.

- Performance of work, projects or reports to ensure the COMPETENCES of solving engineering problems with restrictive conditions and develop the aptitudinal and attitudinal COMPETENCES.

- Assessment, which will ensure the achievement of specific COMPETENCES.

5.2.3 Coordination actions (if required)

The academic leadership will handle the task of coordinating the subjects comprising the adaptation degree.

For this will be requirer a meeting with the participating professors before the course starts to program the sequence of contents, establishing teachings student and temporarily coordinate assessments and work required in the different subjects.

5.2.4 Assessment and quialifications systems.

As this is an adaptation of a degree of a Technical Engineering to the new degree it aims to ensure that the professional acquires those skills appearing in the degree which were not covered by the previous degrees in Engineering, or verify that the has acquired in the course of their professional life.

Therefore, the proposed system is a COMPETENCES EVALUATION system which ensures the acquisition of defined COMPETENCES in this adaptation course.

The final grade corresponds to the assessed sbasic (A: 60% B: 20% C: 20%) of the different aspects and activities which are part of this EVALUATION SYSTEM:

A. Multiple choice tests with a valid response. With at least four partial tests for each subject.

B. Works, projects and technical reports.

C. Attendance to in person classes.

The evidence of item A will be defined by the Professor in charge of the teaching of each subject and referred to the Academic Dean to be included in the on-line campus platform so they can be performed by students of the course and they achieve the grades automatically.
The final EVALUATION SYSTEMss of this subject is expressed numerically, according to the provisions of art. 5 of Royal Decree 1125/2003, of September 5 (BOE September 18), whereby the European Credit System and Grading System in university degrees which are official and its validity throughout the national territory is established.

5.2.5 Brief description of contents

The contents listed here are taken from the contents for each of the corresponding subjects of the Memory of the Technical Inspection Certificate in Industrial Design Engineering and Product Development from the University of Malaga.

MATHEMATICS

Two differentiated parts are developed. A first one which corresponds with a course of linear algebra for engineering, with matrix analysis, linear systems and vector spaces, affine and euclidean space. It is introduced into the systems of differential equations.

The second part is an extension of calculus where ordinary differential equations of first order and superior order are developed.
The Laplace transform as a tool for solving ODE of order n and linear systems of differential equations. Finally variable methods and partial differential equations are studied.

MATERIAL TECHNOLOGY

It is a continuation subject of Science of materials where the techniques used in the inspection on material, procuration and processing of material are presented.

PROJECTS OF DESIGN

This subject develops the tools and knowledge necessary for technical work office oriented to Industrial Design Engineering .

PACKAGING

It is introduced in the field of packaging, the impact on the economic environment and environmental life cycle. Develops the methodology for image and design of Packaging and criteria for the selection of materials.

ENERGY ENGINEERING AND FLUIDS MECHANIC

Develops the fundamental concepts of applied thermodynamics and basic knowledge related to the analysis of thermal and energy systems. In addition, will be studied fluids at rest and in motion and its effects on their contours (solid or fluids). The studied concepts are applied to solving many engineering problems related to energy flow, heat transfer and fluid conduits.

ELECTRONICS AND PRODUCT AUTOMATIZATION

It is a subject at the confluence of the basics of analog and digital electronics and an introduction of automatic systems paying more attention to the sensors and industrial actuators and technologies oriented to production processes and manufacturing technologies as CNC machines and flexible manufacturing systems

5.2.6 Module Contents

1.	Mathematics Matrix and determinants. Linear equations systemas. Rouche, Gauss, Gauss-Jordan. Vectorial spaces. Matrix Diagonalization. Numeric Linear Algebra: errors, Numerical Resolution of equations and equations systems. Eigenvalues and eigenvectors calculus. Affine and Euclidean space: Affine and metric problems in the plane and three-dimensional space and related applications: Movements, conical and quadric. Matrix exponential. Linear systems of differential equations and Linear differential equations of order n. Usage of mathematical packages for spatial representation and problem solving. Ordinary differential equations (ODE) of first order. Cauchy Problems, elemental TYPEs of ODE of first order, geometric problems. ODE of superior order: Reduction of order and changes of notables variables. Linear equations of order n: Homogeneous, Wronkskian, non homogeneous. Euler equation. Laplace transform: Application to the resolution of ODE of order n and linear systems of differential equations. Numerical resolution of differential equations and differential equations systems. Complex variable methods: Analitic function and armonic function. Cauchy theorem. Integral of Cauchy. Residues theorem. Conformal transformations: Dirichlet Problems. Partial differential equations: Introduction: solution TYPEs. Partial differential equations of first order. Wave equations, heat equations, Laplace and Poisson equations. Usage of mathematical packages for problems resolution.	6.
2.	Technology of Materiales. Inspection Techniques on materials. Obtention techniques and materials treatment. Behavior in service. Engineering of materials. Recycle and materials valoration.	6
3.	Projects of Design. The engineering job: the industrial designer. The technical office of industrial design and organization . Application of informatics to the industrial design technical office. Technical reports, patents and certificates. The industrial design project: definition and object; stages, formal presentation and structure; processing. Project documents: general index. memory and annexes. Project documents: drawings. Project documents: terms and conditions. Project documents: state measurements. Project documents: budget. MATERIAL TECHNOLOGY	6
4	Packaging: root, evolution and functions. Package and environment. Packaging life-cycle, a methodology for packages design. Package and it image. Marketing Mix. Materials for packaging. Selection criteria. Labels. Automatic codification and identification of the products. Packages and Merchandising. Planograms. Spanish legislation about packages and packaging wastes. Materials and manufacturing processes of the package. Optimization of the packages as loading units. Loading units for transport.	6
5	Thermal Engineering and Fluid Mechanics. General concepts about heat transmision: applications to product design. Exergetic analysis of thermodynamic systems. Heat exchangers. Introduction to turbomachines. Introduction to hydraulic turbomachines. Overview	6

	of the ICE. Power cycleswith steam turbine. Power cycles with gas turbine. Refrigeration cycles and heat pumps. Introduction to Fluid Mechanics. Confined flows: impulses. Flows with free surfaces: channels.	
6	Electronics and Product Automatization. Introduction to analog electronic. Transistors and amplifiers. Introduction to digital electronic. Logic gates and combinationals circuits. Sequential circuits. Industrial sensors and actuators. Automatization technology. Numerical Control Machines. Flexible manufacturing systems.	6
	Total credits	36

ACADEMIC

6.1. Teachers and other necessary and available human resources to carry out the proposed curriculum. Include information about your adequacy.

Name and surname Firstly faculty of the UMA and then another teacher, arranged alphabetically by surname and name)	NIF	Department / Company of origin	Category	Credits for each Professor	Module / subject / subject per credits	In-campus classes hours
CARRILLO ANDRES, ANTONIO	44575738-J	Machines and termal motors.	Assistant Doctor	3	Update competences/ Energy engineering and fluid mechanics	15
CASTILLO RUEDA, FRANCISCA	25669260-H	Graphic expression, design and projects	Lecturer	2	Updated competences, packaging	10
de ANDRES, DIAZ, JOSE RAMON	25080054-A	Graphic expression, design and projects	Lecturer	1.5	Updated competences, Projects of Design	7.5
DOMINGUEZ MUÑOZ, FERNANDO	74824372-j	Machines and termal motors.	Assistant Doctor	3	Update competences/ Energy engineering and fluid mechanics	15
GUTIERREZ ARIZA, FRANCISCO J	25067077-K	Graphic expression, design and projects	Lecturer	2	Updated competences, packaging	10
GUZMAN SEPULVEDA, RAFAEL	52560310-C	Graphic expression, design and projects	Lecturer	1.5	Updated competences, Projects of Design	7.5
LEAL RUPERTO, JOSE LUIS	24685104-R	Applied Mathematics	Lecturer	3	Updated competences/ Linear Algebra and Advanced calculus	15
MARIN GRANADOS, MANUEL	33383341-Z	Graphic expression, design and projects	Lecturer	2	Updated competences, packaging	10
MARQUEZ SIERRA, FCO	25048894-P	Graphic expression, design and projects	Associated professor	1.5	Updated competences, Projects of Design	7.5
MUÑOZ VEGA, TOMAS	24797406-W	Graphic expression, design and projects	Associated professor	1.5	Updated competences, Projects of Design	7.5
RODRIGUEZ SANCHEZ, FRANCISCO	24882291-V	Applied Mathematics	Lecturer	3	Updated competences/ Linear Algebra and Advanced calculus	15
TORRES LOPEZ, VICTOR	25108427-V	Systems engineering and automatics	Lecturer	3	Updated competences/ Electronics and Product automatization	15
TRUJILLO AGUILERA, FRANCISCO D.	25668403-N	Electronic Technology	Lecturer	3	Updated competences/ Electronics and Product automatization	15
VILLAVIEJA URZAINQUI, ANGEL	25166441-K	Civil Engineering, Materials and Manufacturing	Assistant Doctor	6	Updated competences/ Material Technology	30

6.2. Evaluating the adequacy of Professors

All participating teachers belonging to the Knowledge Areas which are associated / affiliated Grade subjects and, therefore, faculty participants have sufficient experience and required for the teaching of subjects in the course of adaptation, if included on the Human resources Verified Memory of the Degree of Industrial Electronics Engineering.

6.3. Human Resources: administrative or technical support

Administrative management:

Name and surname: NIEVES SERRANO MARTÍN Departament or contact location: School Secretary Phone: 951 952 478 E-mail: mnserrano@uma.es
Name and surname: Mª VICENTA BLANEZ RUIZ Departament or contact location: School Secretary Phone: 951 952 479 E-mail: mvblanes@uma.es
Name and surname: ANA LÓPEZ GARCÍA Departament or contact location: School Secretary Phone: 951 952 480 E-mail: anastasi@uma.es
Name and surname: Mª CARMEN SALAS ARENAS Departament or contact location: School Secretary Phone: 951 952 482 E-mail: mcsalas@uma.es
Name and surname: MARGARITA MERELO SANCHEZ Departament or contact location: School Secretary Phone: 951 952 478 E-mail: mms@uma.es
Name and surname: INMACULADA MUÑOZ RUIZ Departament or contact location: School Secretary Phone: 951 952 310 E-mail: inmamruiz@uma.es

Justification of the adequacy of the material resources and available services

The material resources and available services are the same as proper Grade.

Physical space: Higher Polytechnic School

ON-LINE Campus: campusON-LINE.uma.es

7.2 Forecast acquisition of material resources and services.

The acquisition of material resources and services is not expected, because it has the resources available.

8.1. Estimated quantitative values for the indicators and its justification

REQUIRED INDICATORS	Estimated Value
Degree Graduation Rate:	80%
Degree Dropout Rate:	20%

8.2. Introduction of new indicators (if applicable)

DESIGNATION	Definition	Estimated Rate
Degree Efficiency Rate:	(Total number of credits earned by students in the course 100%, x / total credits which are needed to enroll) * 100. This indicator aims to analyze how much it costs to the students to overcome the credits of the curriculum. x: Previous course which indicator measurement is performed.	100%

8.3. Justification of the estimates.

To estimate the indicators were considered the values used in the application for verification of the Degree of Bachelor in Industrial Design Engineering and Product Development at the University of Malaga, validated by ANECA, but considering more positive and high values on the basis that it is a course specifically aimed at graduates in Engineering with proven preparation and ability.

9. QUALITY ASSURANCE SYSTEM OF THE DEGREE

The Quality Assurance System of the Adaptation University Degree in Industrial Design Engineering and Product Development will be adjusted with the model which is annexed, this was approved at a meeting of the Governing Council of the University of Malaga, celebrated on April 18, 2013

9.1 Responsible of system quality assurance Syllabus.

It includes the Quality Assurance Committee formed by the Academic Dean and Vice-Dean, at least two Professors participating in the Degree, a student representing the group, and a representative belonging to the administration.

9.2 Procedures to evaluate and improve the quality of teachings and professors.

The objective of this procedure is to know and analyze the results of the Degree.

Recollection of data.

The Committee of Quality Assurance of the Degree will analyze the results of the following indicators at the end of each academic year:

- Success rate: percentage of students on the total who have successfully completed their studies.

- Failure rate: percentage of students who have dropped out.

The Commission will be supported by Quality Service, Strategic Planning and Social Responsibility, which will be responsible for their valuation as long as the data is in the database of the University of Malaga.

In addition to these indicators, the Commission of Quality Assurance of the Degree should specify whatever it is considered as relevant.

Information Analysis and Improvement of the System

The Committee of Quality Assurance will be responsible for analyzing the results of the indicators, and The Committe must thoroughly examine if the estimated quantitative rates for them are satisfied or not.

These results are taken into account to prepare the Annual Report of the Results of the Degree and to prepare the Improvement Plan.

9.3 Procedure to ensure the quality of internships and mobility programs.

Not applicable

9.4 Procedures to analyze labor insertion of graduates and satisfaction with their training.

The objective of this procedure is to establish the system for measuring and analyzing the results on labor insertion.

Recollecting Data.

Quality Service, Strategic Planning and Social Responsibility will support the *Section of the Degrees* and Commissions of Quality Assurance of the Degrees, to develop an annual questionnaire for people who have completed the Degrees (graduates) in order to know the satisfaction of graduates with their studies and their employment status.

Information Analysis and Improvement of the System

The Committee of Quality Assurance of the Degree shall analyze the results of the Questionnaire of Degree and the result of the following indicators:

- Employability of the degree: percentage of students who start to work within two years after completing the degree.

- Average time of employability of the degree: average time it takes for graduates to start working.

These results are taken into account for preparing the Annual Report on the Results of the Degree. In the event of any improvements, these will be joined the Improvement Plan.

9.5 Procedure to analyze the satisfaction of the groups involved (students, academic staff and administration and services, etc.) and to receive the suggestions and complaints. Specific criteria in case of expiration of the degree.

PROCEDURE FOR THE ANALYSIS OF THE SATISFACTION OF GROUPS INVOLVED IN THE DEGREE

Satisfaction surveys will be used to recollect information about students, faculty and graduates. These surveys include items about the organization and development of the Degree.

Meetings will be necessary to test the satisfaction for the Personnel of Administration and Services, linked to administrative management of the program.

If there are a very high number of PAS, a questionnaire will be required.

Quality Service, Strategic Planning and Social Responsibility will prepare the model questionnaires, as directed by the Degree Section.

Once the data are submitted from different groups involved by the Commission on Quality Assurance Degree, the Degree Sections will send the data necessary for the completion of the questionnaires (emails) to Service, Strategic Planning and Social Responsibility Service is responsible for managing the questionnaires through LimeSurvey manager surveys and to send the results to the Degree Sections, which will forward them to the Commission to be analyzed.

Information Analysis and Improvement of the System

The Committee of Quality Assurance will be responsible for analyzing the information of the results of satisfaction of the groups involved in the Degree.

These results are taken into account to prepare the Annual Report of the Results of the Degree and to prepare the Improvement Plan.

The Improvement Plan includes the improvement actions which the Commission on Quality Assurance establishes once all the results of the system are measured, including derivatives valuating satisfaction groups (results of questionnaires, etc.)

PROCEDURE TO MANAGE SUGGESTIONS AND COMPLAINTS

To receive any suggestion, the procedure is established at the University of Malaga, on the general procedure for complaints, suggestions and compliments, approved by the Governing Council of 21 July 2011.

The process includes the tasks to be performed at the opening, processing and closing of Complaints, Suggestions and Congratulations as well as control and monitoring.

From the Quality Service, Strategic Planning and Social Responsibility, the Regulation will be presented to the Commission on Quality Assurance of the Degree and the members of the Commission (or responsible) will be trained in the computing tool which manages complaints, suggestions and compliments.

The Degree must include on its website a link of the System of Complaints, Suggestions and Congratulations from the University of Malaga:
http://dj.uma.es/quejasysugerencias/ http://dj.uma.es/quejasysugerencias/

Furthermore, the Degree must possess the printed paper "Form of complaints, suggestions and compliments" for possible complaints, suggestions or compliments on paper.

In relation to any submitted complaint, it will be sent to the Commission of Quality Assurance of the Degree by different means: email, letter, etc.
Information Analysis and Improvement of the System

The Committee of Quality Assurance is responsible for analyzing and processing the complaints, suggestions and compliments related to the Degree. Annually the Quality Service, Strategic Planning and Social Responsibility will send a report of the complaints, suggestions and compliments regarding the Degree, including the suggestions and compliments received, recollected and also processed. This report together with the complaints will be taken into account to prepare the Annual Report of the Results of Degree, as well as to prepare the Improvement Plan.

5. PLANNING OF THE TEACHING

5.1 DESCRIPTION OF THE SYLLABUS
See annexes. Paragraph 5
5.2 LEARNING ACTIVITIES
LEARNING ACTIVITIES IN CLASS (Masterclass, classroom practices, laboratory practices...)
E- LEARNING ACTIVITIES (presentations, practices, documents, projects, reports, study...)
ASSESSMENT (partial exam, final exam, questionnaire, project, report...)
5.3 TEACHING METHODS
On campus : EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK...).
On campus: PRACTICE ACTIVITIES IN CLASSROOM (PROBLEMS, DESIGN ACTIVITIES, SIMULATION PRACTICE, TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC).
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSROOM S, IN AUDIOVISUAL CLASSROOM S, IN WORKSHOPS...).
On campus: ACTIVITIES OUTSIDE THE UNIVERSITY (CLINICAL PRACTICE, IN INSTITUTIONS, IN COMPANIES, FIELDWORKS, VISITS TO CENTRES/INSTITUTIONS…).
On campus: SEMINARS/WORKSHOPS, REVIEW, DISCUSSION.
E-Learning: EXPOSITIVE ACTIVITIES (MASTERCLASSES, CONFERENCES AND ON-LINE PRESENTATIONS).
E-Learning: PRACTICAL ACTIVITIES (PROBLEMS, PROJECTS, DESIGNS AND CASE STUDIES.
E- Learning : DOCUMENTATION ACTIVITIES (BIBLIOGRAPHIC/DOCUMENTARY SEARCH, TEXT COMMENTARY, REALIZATION OF GLOSSARIES, PREPARATION OF DATABASES…)
E-Learning: DOCUMENTS (REPORTS, MEMORIES, ESSAYS, DOSSIER, DIARIES, PORTFOLIOS...).
E-Learning: DISCUSSION ACTIVITIES (PARTICIPATION IN FORUMS, WIKIS, CHATS, ON-LINE SEMINARS…).
On campus : ASSESSMENT ACTIVITIES (PARTIAL AND FINAL EXAMS, SELF ASSESSMENTS, ESSAYS AND PROJECTS, PARTICIPATION IN CLASS…).
On campus: ASSESSMENT ACTIVITIES (ON-LINE TESTS, SURVEYS, QUESTIONNAIRES…).
On campus : TUTORING.
On campus : ASSESSMENT ACTIVITIES (DEFENSE OF THE END OF DEGREE PROJECT)
5.4 EVALUATION SYSTEMS
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OUT OF GRADES): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.
FINAL EXAM (BETWEEN 20% AND 80% OUT OF GRADES): In-class test: two hours minimum – four hours maximum.
DEFENSE OF THE FINAL DEGREE PROJECT IN FRONT OF AN EXAMINING BOARD.

5.5 LEVEL 1: CORE LEARNING		
5.5.1 Core Information Level 1		
LEVEL 2: MATHEMATICS		
5.5.1.1 Core Information Level 2		
TYPE	BRANCH	SUBJECT
CORE	Engineering and Architecture	MATHEMATICS
ECTS LEVEL2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: LINEAR ALGEBRA		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
Matrix and determinants Linear equations systems. Rouche, Gauss, Gauss-Jordan Vectorial spaces: Linear applications: eigenvectors and eigen values. Matrix diagonalisation.		

Numerical linear algebra: errors. Numeric al resolution of equations and equation systems.

Eigen values and eigen vectors calculus.

Affine and Euclidean space: Affine problems and metrics in the plane and three-dimensional space

Affine applications: Movements, conical and quadric.

Exponential of a matrix. Linear systems of differential equations and linear differential equations of n-order. Usage of mathematical packages for spatial representation and problems solving.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further study with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

Choose a value

5.5.1.5.3 SPECIFIC

DB1.- Ability to solve mathematical problems which may arise in engineering. Ability to apply knowledge of linear algebra; geometry; differential and integral calculus; differential equations and partial derivatives; numerical methods; numerical algorithms; statistics and optimization.

Choose a value

Choose a value

Choose a value

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)

E- Learning classes: PERSONAL STUDY

On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT

CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: GRAPHIC EXPRESSION		
5.5.1.1 Core Information Level 2		
TYPE	BRANCH	SUBJECT
CORE	Engineering and Architecture	GRAPHIC EXPRESSION
ECTS LEVEL2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: GRAPHIC EXPRESSION IN ENGINEERING		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
Metric Geometry		

Principles of Standardization

Diedric (Basics and Distances)

Diedric (Angles)

Diedric (Flat sections)

Diedric (Surfaces intersection)

Axonometric perspective

Cavalier perspective

Contour maps

Introduction to CAD

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA4.- Ability to manage the design and innovation with strategic and forward-looking approach in terms of products, and processes distributed and concurrent product development in a business context.

DA10.- Ability for artistic expression with classical and expressive computer-assisted techniques.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DB5.- Ability for spatial vision and knowledge of graphic representation techniques, both traditional methods metric and descriptive geometry, and geometry through applications of computer-aided design.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)

E- Learning classes: PERSONAL STUDY

On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: BUSINESS		
5.5.1.1 Core Information Level 2		
TYPE	BRANCH	SUBJECT
CORE	Engineering and Architecture	BUSINESS
ECTS LEVEL2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
	6	
ECTS Semester	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	**CATALAN**	**BASQUE**
YES	NO	NO
GALICIAN	**VALENCIAN**	**ENGLISH**
NO	NO	NO
FRENCH	**GERMAN**	**PORTUGUESE**
NO	NO	NO
ITALIAN	**OTHER**	
NO	NO	

LEVEL 3: BUSINESS MANAGEMENT		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
	6	
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		

5.5.1.3 CONTENTS
THE FIRM SCIENCE, TECHNOLOGY AND INDUSTRY SYSTEMS COMPETITIVENESS AND INNOVATION OF THE COMPANY SOCIAL RESPONSIBILITY COMPANY STRATEGY AND POLICY BUSINESS CREATION TECHNIQUES OF DIRECTION AND MANAGEMENT FINANCIAL MANAGEMENT OF THE COMPANY COMMERCIAL MANAGEMENT SYSTEM PRODUCTION MANAGEMENT SYSTEM HUMAN RESOURCES IN THE COMPANY MANAGEMENT OF BUSINESS RISKS QUALITY MANAGEMENT ENVIRONMENTAL MANAGEMENT IN THE COMPANY PROJECT MANAGEMENT
5.5.1.4 OBSERVATIONS
5.5.1.5 COMPETENCES
5.5.1.5.1 CORE AND GENERAL COMPETENCES
DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.
DA7.- Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts of law, government and private company.
DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and Required standards
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
DA16.- Knowledge and application of basic principles of economics and human resource management, organization and project planning, as well as legislation, regulation and standardization in the field of design and development projects portfolio ranges, lines and product family.
CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DB6.- Adequate knowledge of the business concept, institutional and legal framework of the company. Organization and management companies.

5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: PHYSICS		
5.5.1.1 Core Information Level 2		
TYPE	BRANCH	SUBJECT
CORE	Engineering and Architecture	PHYSICS
ECTS LEVEL2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO

ITALIAN	OTHER	
NO	NO	
LEVEL 3: PHYSICS 1		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
Particle mechanics Particle systems mechanics Elasticity and fluids Oscillations and waves Thermodynamics		
5.5.1.4 OBSERVATIONS		
5.5.1.5 COMPETENCES		
5.5.1.5.1 CORE AND GENERAL COMPETENCES		
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.		
DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.		
CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.		
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.		
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.		
5.5.1.5.2 CROSS-CURRICULUM		
No data exist		
5.5.1.5.3 SPECIFIC		
DB2.- Understanding and mastering the basic concepts of the general laws of mechanics, thermodynamics, , electromagnetism and their application to solving engineering problems.		
5.5.1.6 LEARNING ACTIVITIES		

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: COMPUTING		
5.5.1.1 Core Information Level 2		
TYPE	BRANCH	SUBJECT
CORE	Engineering and Architecture	COMPUTING
ECTS LEVEL2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: BASICS OF COMPUTING		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION

CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

Computer and information

Computer structure

Basic concepts of Operative Systems

Database basic concepts

Algorithms and programs

Introduction to Programming in C language

Control structures

Functions

Structure data

Communication systems: Telecomputing and Internet.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DB3.- Basic knowledge of the use and programming of computers, operating systems, databases and programs computing with applications in engineering.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0

EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	**MINIMAL ASSESSMENT**	**MAXIMAL ASSESSMENT**
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: CHEMISTRY		
5.5.1.1 Core Information Level 2		
TYPE	BRANCH	SUBJECT
CORE	Engineering and Architecture	CHEMISTRY
ECTS LEVEL 2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: CHEMISTRY		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6

ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

Structure of subject and nuclear chemistry.

Chemical transformations.

Chemistry of pollution.

Electrical-chemistry.

Instrumental analysis.

Basics of Industrial Chemistry.

Applications of organic and inorganic chemistry to engineering

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DB4.- Ability to understand and apply the principles of basic knowledge of general chemistry, organic and inorganic chemistry and applications in engineering.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
5.5 LEVEL 1: CORE COMPLEMENTARY FORMATION		
5.5.1 Core Data Level 1		
LEVEL 2: MATHEMATICS		
5.5.1.1 Core Information Level 2		
TYPE	BRANCH	SUBJECT
CORE	Engineering and Architecture	MATHEMATICS
ECTS LEVEL2	18	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6	12	
ECTS Semester	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: CALCULUS		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
6		
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6

ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: VECTOR AND STATISTICAL ANALYSIS		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
	6	
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: ADVANCED CALCULUS		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
	6	
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
Calculus.		

Real and complex number.

Real function of a real variable: limits, continuity and derivability: graphical representation of curves (explicit, parametric and polar).

Real function integration of a real variable. Primitives.

Numerical series and series of functions: Taylor series and Fourier series.

Real function integration of a real variable. Primitives. Geometric and physical applications.

Interpolation and approximation of functions.

Numerical differentiation and integration.

Vector fields and scalar fields. Limits and differentiability of fields. Taylor theorem.

End of functions, conditioned ends. Functional and numerical optimization. Usage of mathematical packages for the representation of functions and problem solving.

Vector and Statistical Analysis

Differential geometry: curves and surfaces in space, Frenet trihedron, Gaussian curvature and average to surfaces.

Line integral. Double integral and triple integral. Surface integral. Integral theorems. Usage of mathematical packages for the representation of curves and surfaces and problem solving.

Dimensional and two-dimensional descriptive statistics.

Introduction to Discrete Mathematics: Using numerical algorithms and counting techniques. Calculation of probabilities. Random variable and fundamental distributions. Confidence intervals and hypothesis tests. Usage of mathematical packages for data processing.

Advanced calculus

Ordinary differential equations (ODE) of first-order: Cauchy problem, basic types of first-order ODE, geometric problems.

Superior order ODE: Reduction of order and notable changes variables. Linear equations of order n: Homogeneous, Wronskian, not homogeneous. Euler equation.

Laplace Transform: Application to solving ODE of order n and linear systems of differential equations.

Methods of complex variable: analytic function and harmonic function. Cauchy theorem. Cauchy integral. Residue theorem.

Conformal transformations: Dirichlet problem.

Partial Differential Equations: Introduction: TYPEs of solutions. Partial differential equation of first order. Wave equation, heat equation, Laplace Equations

Poisson. Usage of mathematical packages for problem solving.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

DA18.- Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT.

DA19.- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.

CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.		
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.		
5.5.1.5.2 CROSS-CURRICULUM		
No data exist		
5.5.1.5.3 SPECIFIC		
DB1.- Ability to solve mathematical problems which may arise in engineering. Ability to apply knowledge of linear algebra; geometry; differential and integral calculus; differential equations and partial derivatives; numerical methods; numerical algorithms; statistics and optimization.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: PHYSICS		
5.5.1.1 Core Information Level 2		
TYPE	BRANCH	SUBJECT
CORE	Engineering and Architecture	PHYSICS
ECTS LEVEL2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
	6	
ECTS Semester	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9

ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: PHYSICS 2		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
CORE	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
	6	
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
Electric field. Magnetic field. Time-dependent fields. Electromagnetic waves.		
5.5.1.4 OBSERVATIONS		
5.5.1.5 COMPETENCES		
5.5.1.5.1 CORE AND GENERAL COMPETENCES		
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.		
DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.		
CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.		
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.		
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.		
5.5.1.5.2 CROSS-CURRICULUM		

No data exist		
5.5.1.5.3 SPECIFIC		
DB2.- Understanding and mastering the basic concepts of the general laws of mechanics, thermodynamics, , electromagnetism and their application to solving engineering problems.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
5.5 LEVEL 1: SPECIFIC LEARNING OF INDUSTRIAL DESIGN AND PRODUCT ENGINEERING I: Materials and Processes.		
5.5.1 Core Data of Level 1		
LEVEL 2: SCIENCE AND ENGINEERING OF MATERIALS		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	9	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
		9
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH

NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: SCIENCE OF MATERIALS		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	9	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
		9
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
MATERIAL SCIENCE: CHARACTERISTICS, BEHAVIORS, IMPLEMENTATION AND CLASSIFICATION OF MATERIALS. CRYSTALLINE AND AMORPHOUS STRUCTURE. IMPERFECTIONS. PROPERTIES AND FEATURES OF SOLID STATE. DIFFUSION KINETIC OF THE PHASE CHANGE SOLIDIFICATION. BALANCE SYSTEMS. DIAGRAMS OF EQUILIBRIUM. MECHANICAL BEHAVIOR AND FRACTURE. CONTROL OF FREQUENTLY USED MATERIALS IN DESIGN. STUDY OF METALLIC MATERIALS. Metals and alloys. THERMAL TREATMENTS. CERAMICS. POLYMERS. COMPOUNDS		
5.5.1.4 OBSERVATIONS		
5.5.1.5 COMPETENCES		
5.5.1.5.1 CORE AND GENERAL COMPETENCES		
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.		

DA19.- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DC1 - Knowledge of the fundamentals of science, technology and materials chemistry. Understanding the relationship among microstructure, synthesis or processing and materials properties.
DC2 - Basic knowledge of production and manufacturing systems.
DC3.- Applied knowledge of business organization.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	90	100
CLASSROOM ACTIVITIES	112,5	0
EVALUATION	22,5	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: INDUSTRIAL PROCESSES

5.5.1.1 Core Information Level 2

TYPE	COMPULSORY

ECTS LEVEL 2	9	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
		9
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: INDUSTRIAL PROCESSES		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	9	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
		9
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
INTRODUCTION TO MANUFACTURING PROCESSES AND SYSTEMS FORMED BY MOULDING FORMING BY DEFORMATION FORMED BY UNION AND ASSEMBLY FORMED BY MACHINING AUTOMATION MANUFACTURING PROCESSES UNCONVENTIONAL PROCESSES AND OTHER MATERIALS SURFACE TREATMENT PROCESS, INDUSTRIAL COATINGS AND INDUSTRIAL FINISHES		
5.5.1.4 OBSERVATIONS		
5.5.1.5 COMPETENCES		
5.5.1.5.1 CORE AND GENERAL COMPETENCES		

DA1.- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.
DA3.- Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.
DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.
DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and required standards
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DC2 - Basic knowledge of production and manufacturing systems.
DC3.- Applied knowledge of business organization.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	90	100
CLASSROOM ACTIVITIES	112,5	0
EVALUATION	22,5	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT

CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

5.5LEVEL 1: COMMON LEARNING TO THE PRODUCT ENGINEERING II: MECHANISMS, PRODUCT STRUCTURE AND ENERGY		
5.5.1 Core Data Level 1		
LEVEL 2: ENERGY ENGINEERING, HEAT TRANSMISSION AND FLUIDS		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: ENERGY ENGINEERING AND FLUID-MECHANICS		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		

General concepts of heat transfer: product design applications. Exergy analysis of thermodynamic systems. Heat exchangers. Introduction to turbomachines. Introduction to hydraulic turbomachines. Overview of the ICE[4]. Power cycles steam turbine. Cycle gas turbine power. Refrigerator cycles and heat pump. Introduction to fluid mechanics. Confined flows: drives. Free surface flows: channels.
5.5.1.4 OBSERVATIONS
5.5.1.5 COMPETENCES
5.5.1.5.1 CORE AND GENERAL COMPETENCES
DA8.- Ability for modeling, simulation and optimization of products in the context of a proposed industrial product, articulating the basic knowledge of the engineering branch and technological knowledge specific of the design specialty and product development associated tools.
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.
DA19.- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DC4.- Knowledge of applied thermodynamics and heat transmission. Basic principles and their application to solving engineering problems.
DC5.- Knowledge of the basic principles of fluid mechanics and its application to solving problems in the field engineering. Calculating pipes, fluid channels and systems channels.
5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY

[4] ICE: Internal Combustion Engine

CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: STRENGTH OF MATERIALS AND PRODUCT STRUCTURE		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
		6
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: STRENGTH OF MATERIALS		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER

DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
		6
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

INTRODUCTION TO THE ELASTICITY AND STRENGTH OF MATERIALS.

SOLID ELASTIC.

PLASTICIZING CRITERIA AND BREAK.

STRENGTH OF MATERIALS, BASICS.

TENSION AND COMPRESSION.

FLAT ELASTIC FLEXION

INTRODUCTION TO PLASTIC CALCULUS.

DEFLECTED FLEXO-COMPRESSION.

TWIST IN CIRCULAR PROFILES.

ELASTIC POTENTIAL BAR. ENERGY METHODS.

INSTABILITY OF PRISMATIC BARS. BUCKLING

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and required standards

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.		
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.		
5.5.1.5.2 CROSS-CURRICULUM		
No data exist		
5.5.1.5.3 SPECIFIC		
DC7.- Knowledge and use of the principles of the strength of materials and product structures.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: MECHANISMS AND PRODUCT MACHINE ELEMENTS		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
6		
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: MECHANICAL SYSTEMS

5.5.1.1.1 Core Information Level 3

TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER

DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
6		
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

INTRODUCTION TO THE STUDY OF MECHANISMS

KINEMATIC ANALYSIS OF FLAT MECHANISMS

DYNAMIC ANALYSIS OF MECHANISMS

BALANCING

FLYWHEELS

GEARS

GEAR TRAINS

ELEMENTS OF DIFFERENT MACHINES

FLEXIBLE ELEMENTS

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA1.- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.

DA3.- Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.
DA5.- Ability to generate scale models and rapid protoTYPEs, short series and industrialization of the product under economic criteria, safe and environmentally friendly.
DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.
DA8.- Ability for modeling, simulation and optimization of products in the context of a proposed industrial product, articulating the basic knowledge of the engineering branch and technological knowledge specific of the design specialty and product development associated tools.
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DB1.- Ability to solve mathematical problems which may arise in engineering. Ability to apply knowledge of linear algebra; geometry; differential and integral calculus; differential equations and partial derivatives; numerical methods; numerical algorithms; statistics and optimization.
DB2.- Understanding and mastering the basic concepts of the general laws of mechanics, thermodynamics, , electromagnetism and their application to solving engineering problems.
DB3.- Basic knowledge of the use and programming of computers, operating systems, databases and programs computing with applications in engineering.
DB5.- Ability for spatial vision and knowledge of graphic representation techniques, both traditional methods metric and descriptive geometry, and geometry through applications of computer-aided design.
DC6.- Knowledge of the principles of the theory of machines and mechanisms,

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

5.5LEVEL 1: COMMON LEARNING TO THE PRODUCT ENGINEERING III: ELECTRICITY, ELECTRONICS AND AUTOMATICS		
5.5.1 Core Data Level 1		
LEVEL 2: ELECTRIC TECHNOLOGY APPLIED TO PRODUCT		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
6		
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: BASICS OF ELECTRIC ENGINEERING		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
6		
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9

ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

INTRODUCTION TO CIRCUIT THEORY.

CIRCUIT ANALYSIS TECHNIQUES

ADDITIONAL THEOREMS AND ANALYSIS TECHNIQUES.

STATIONARY REGIME SINE.

THREE PHASE SYSTEMS.

ELEMENTS IN ELECTRICAL SYSTEMS.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

DA18.- Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DC9.- Knowledge and use of the principles of circuit theory and electrical machines.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0

EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: ELECTRONICS AND PRODUCT AUTOMATIZATION		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: ELECTRONICS AND PRODUCT AUTOMATIZATION		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3

ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

Introduction to analog electronics. Transistors and amplifiers.

Introduction to digital electronics. Combinational logic gates and circuits. Sequential circuits.

Industrial sensors and actuators.

Automation technology.

CNC machines.

Flexible manufacturing systems.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA1.- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.

DA2.- Ability to manage the activities under the development of products, from the perspective of the life cycle in the field of Industrial Design and Product Development.

DA5.- Ability to generate scale models and rapid protoTYPEs, short series and industrialization of the product under economic criteria, safe and environmentally friendly.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC		
DC8.- Applied knowledge of business organization.		
DC10.- Knowledge of the basics of electronics.		
DC11.- Knowledge of the basics of automation and control methods.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
5.5LEVEL 1: COMMON LEARNING TO THE PRODUCT ENGINEERING IV: PRODUCT ENGINEERING I		
5.5.1 Core Data Level 1		
LEVEL 2: TECHNICAL DRAWING		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
6		
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO

GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: TECHNICAL DRAWING		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER

DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
6		
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

Cuts and sections.

Dimensional, geometric and surface specifications.

Standard machine elements.

Fixed and removable unions.

Analysis and interpretation of mechanical assemblies. Assembled and exploded.

Fundamentals of three-dimensional representation by CAD.

The plane environment.

The environment part.

The set environment.

The metal sheet environment.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DC12.- Knowledge and Skills of Technical Drawing

5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: PRODUCT ENGINEERING PROJECTS		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: PROJECTS OF DESIGN

5.5.1.1.1 Core Information Level 3

TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER

DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

INTRODUCTION.

APPROACH TO THE PROJECT.

GENERAL STRUCTURE OF THE PROJECT.

FEASIBILITY STUDIES.

PROJECT DOCUMENTS.

THE PLANNER AND THEIR PROFESSIONAL ENVIRONMENT.

PROJECT PRESENTATION

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DC13.- Knowledge and ability to organise and manage projects. Knowing the organizational structure and functions of a project office.
DC14.- Knowledge and skills of engineering projects and product industrialization.
DC15.- Design process. Synthesis and EVALUATION of knowledge of design science applicable to the design of an industrial product, subjects explained in conceptual design and design methodology.
DC17.- Project management. Coordinate teamwork, quality standards apply to the project and plan and control the development of a project; learn the basic concepts of project management; know the activity projective in the design field.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

5.5LEVEL 1: SPECIFIC LEARNING TO THE PRODUCT ENGINEERING I: PRODUCT ENGINEERING II
5.5.1 Core Data Level 1
LEVEL 2: Design Methodology

5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	9	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	9	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: Design Methodology		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	9	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	9	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		

INTRODUCTION TO INDUSTRIAL DESIGN METHODOLOGY.

CONCURRENT ENGINEERING (CE)

DESIGN METHODOLOGY FOR EC

METHODS AND TECHNIQUES OF SPECIFIC DESIGN

VALUE ANALYSIS

INTEGRATED DESIGN AND DEVELOPMENT OF PRODUCTS

ROBUST DESIGN. TAGUCHI TECHNIQUE

INDUSTRIAL DESIGN FOR COSTS TECHNIQUES TO GENERATE AND EVALUATE ALTERNATIVES PLANNING DESIGN MODELING AND SIMULATION OF INDUSTRIAL DESIGN ENVIRONMENTS. DETAIL DESIGN. "DESIGN FOR" CONCEPT OPTIMIZATION PROCCESS AND CONTINUOUS IMPROVEMENT IN DESIGN. PROFESSIONAL ETHICAL CRITERIA AND PRODUCT DESIGN
5.5.1.4 OBSERVATIONS
5.5.1.5 COMPETENCES
5.5.1.5.1 CORE AND GENERAL COMPETENCES
DA1.- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.
DA2.- Ability to manage the activities under the development of products, from the perspective of the life cycle in the field of Industrial Design and Product Development.
DA3.- Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.
DA5.- Ability to generate scale models and rapid protoTYPEs, short series and industrialization of the product under economic criteria, safe and environmentally friendly.
DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.
DA11.-Ability for analysis and synthesis of form, color and texture, composition, harmony of the formal aspects of the product, and the application of social psychology and anthropology of the formal attributes of the product and the indexical semiotic.
DA12.- Ability to apply methodologies, techniques and tools for designing and developing products which enable a sustainable product design, packaging, and instructions in the different sectors of the habitat, consumption, furniture urban, industrial equipment and service organizations.
DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and Required standards
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DD1.- Ability to choose, relate and apply methods and techniques of industrial design formalised in relation to a target innovation, improvement or efficiency.

DD2.- Ability to apply technical Fuzzy front end. Creativity applied. Triz. Invention, patent and design protection industry. Design for X: Design for Reliability and Quality. Design for Six Sigma: Taguchi and Design of Experiments.		
DD3.- Ability to perform reverse engineering. Development models, models and protoTYPEs.		
DD4.- Ability to formulate and realize proposals for design innovation by distributed teams. Concurrent engineering tools and ICT collaborative engineering.		
DD8.- Ability to design proposals products from the knowledge of sensory and symbolic properties environmental materials.		
DD10.- Understanding Concurrent Engineering from everything concerning the PDPD (Process Design and Product Development)		
DD11.- Knowledge of assessment methodologies, design optimization and product development.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	90	100
CLASSROOM ACTIVITIES	112,5	0
EVALUATION	22,5	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: DESIGN AND PRODUCT		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	12	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6

ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: ERGONOMIC DESIGN AND ECODESIGN		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: PACKAGING		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.3 CONTENTS		

Ergonomic Design and Ecodesign

Ergonomics.

Definitions, concepts and objectives. legal aspects.

Anthropometry. Percentiles.

Interfaces. Signaling.

Identification and evaluation ergonomic risks.

Data Viewing screen.

Thermal environment.

Light environment.

Acoustic environment.

Contaminants: environmental factors. Ventilation.

Energy consumption and physical work capacity.

Mental workload.

Development with tools.

Development with furnishings.

Packaging development.

Development environment.

Job development and psychosocial factors.

Specific development for disabilities.

Specific development of critical control positions.

Ecodesign.

Eco-design and eco-products.

Environmental impact.

Ecological footprint.

Product-Service System

Design methodology for the environment

Packaging

Packaging: origin, evolution and functions.

The container and the environment. Packaging lifecycle.

A methodology for packaging design.

The container and its image. Marketing Mix.

Materials for packaging. Selection criteria.

Labeling. Codification and automatic identification of products.

Packaging and Merchandising. planograms

Spanish legislation on packaging and packaging waste.

Materials and manufacturing processes of the container.

Optimization of packaging and loading units. Loading units for transport.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES
DA1.- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.
DA2.- Ability to manage the activities under the development of products, from the perspective of the life cycle in the field of Industrial Design and Product Development.
DA3.- Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.
DA5.- Ability to generate scale models and rapid protoTYPEs, short series and industrialization of the product under economic criteria, safe and environmentally friendly.
DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.
DA7.- Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts of law, government and private company.
DA11.-Ability for analysis and synthesis of form, color and texture, composition, harmony of the formal aspects of the product, and the application of social psychology and anthropology of the formal attributes of the product and the indexical semiotic.
DA12.- Ability to apply methodologies, techniques and tools for designing and developing products which enable a sustainable product design, packaging, and instructions in the different sectors of the habitat, consumption, furniture urban, industrial equipment and service organizations.
DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and Required standards
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
DA19.- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DD5.- Ability to perform economically design proposals and sustainable products from the knowledge of theory and product design. Business strategy. Marketing mix. Product platform and modular design. Packaging.
DD6.- Ability to perform socially sustainable design proposals from the knowledge of ergonomics, interaction design and product safety for both normal and special populations. Ergonomic design software tools.
DD7.- Ability to perform environmentally sustainable design proposals from knowledge of engineering lifecycle. Environmental impact, life cycle analysis, eco-design, eco-innovation and eco-labeling. Eco-design software tools.
DD9.- Knowledge of basic design and Packaging.

5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

5.5 LEVEL 1: SPECIFIC LEARNING OF INDUSTRIAL DESIGN AND PRODUCT ENGINEERING II:GRAPHIC ENGINEERING
5.5.1 Core Data of Level 1
LEVEL 2: COMPUTER AIDED DESIGN

5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	9	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	9	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: COMPUTER AIDED DESIGN		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	9	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	9	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
CAD SOFTWARE 2D DRAWING WITH A CAD APPLICATION 3D DRAWING WITH A CAD APPLICATION PHOTOREALISTIC REPRESENTATIONAND COMPUTER ASSISTED ANIMATION (CAA)		
5.5.1.4 OBSERVATIONS		
5.5.1.5 COMPETENCES		
5.5.1.5.1 CORE AND GENERAL COMPETENCES		
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.		
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.		
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.		
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.		
5.5.1.5.2 CROSS-CURRICULUM		
No data exist		
5.5.1.5.3 SPECIFIC		
DD12.- Ability to conceptualize mathematical and geometric transformations entities. Modeling processes simulation design and computer assisted product engineering.		
DD13.- Ability to model, simulate and manage product data from the perspective of the life cycle.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
	90	100

CLASSROOM LEARNING ACTIVITIES		
CLASSROOM ACTIVITIES	112,5	0
EVALUATION	22,5	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: EVALUATION ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: GRAPHIC ENGINEERING OF THE PRODUCT		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
		6
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: GRAPHIC ENGINEERINGOF THE PRODUCT		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		

ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
		6
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

Representation Systems I: Inverse Angles.

Representation Systems II: Surface Intersection.

Sheet-metal and boiler-making drawing: Development of polyhedral, cylindrical and conical shapes.

Sheet-metal and boiler-making drawing: Development of complex pieces.

Representation systems.

Conical system

Shadows

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA4.- Ability to manage the design and innovation with strategic and forward-looking approach in terms of products, and processes distributed and concurrent product development in a business context.

DA10.- Ability for artistic expression with classical and expressive computer-assisted techniques.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DB5.- Ability for spatial vision and knowledge of graphic representation techniques, both traditional methods metric and descriptive geometry, and geometry through applications of computer-aided design.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
5.5LEVEL 1:SPECIFIC LEARNING OF INDUSTRIAL DESIGN AND PRODUCT ENGINEERING III: AESTHETICS AND ARTISTIC EXPRESSION		
5.5.1 Core Data Level 1		
LEVEL 2: AESTHETICS AND HISTORY OF THE INDUSTRIAL DESIGN		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	12	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
6		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE

NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: THEORY AND AESTHETICS OF INDUSTRIAL DESIGN		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
4		
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: HISTORICAL AND CULTURAL DEVELOPMENT OF DESIGN		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		

THEORY AND AESTHETICS OF INDUSTRIAL DESIGN

Introduction. Ways of approach to industrial design.

Design and industrial design. Concept and conceptualizations.

The industrial design object. Concept and conceptualizations.

Theories and interpretive methodologies, criticizes related to industrial design?

Fundamental concepts of aesthetic thought.

Conditions and materials for the industrial design aesthetics.

Formal aesthetic elaboration of the design objects analysis from an integral perspective.

The stories of industrial design.

The geographical territorial organization of the industrial design and its cultural identities.

The beginnings of industrial design and its transition to modernity.

To the productive rationalism.

The impact of the vanguards, the beginnings of the modern movement, the aesthetics of the machine and social democratic concept of design.

1930-1960; The Good Design and Styling.

From enthusiasm of the sixties to skepticism of the seventie. Heterodoxies and expansion of new conceptions of the industrial design.

Postmodernism and other trends at the end of the century.

The twenty-first century: the present and future industrial design.

Industrial design from non-Western perspectives or peripheral contexts.

Industrial design in feminine.

Other transversalities of the industrial design.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.

DA9.- Knowledge of the history of industrial design and aesthetic movements in relation to industrial design, characterization styles product design.

DA11.-Ability for analysis and synthesis of form, color and texture, composition, harmony of the formal aspects of the product, and the application of social psychology and anthropology of the formal attributes of the product and the indexical semiotic.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA18.- Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT.

DA19.- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DD15.- Ability to analyze products from the aesthetic, historical, hermeneutical, semiotic, sociological and anthropology knowledge.		
DD16.- Knowledge of fundamentals of aesthetic, evolution from aesthetic ideas to be shown at the design analysis industrial products.		
DD17.- Knowledge of history of industrial design to operate as an actor of material culture from sustainability culture.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: ARTISTIC EXPRESSION		
5.5.1.1 Core Information Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	12	
DURATION		
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: BASICS OF DESIGN		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3

ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
6		
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: DESIGN OF COMMUNICATION		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		

BASICS OF DESIGN

Form and structure.

The color as a graphic resource.

The graphic space.

Technique of composition.

Light as a graphic element.

Textures as visual and graphic appeal.

The masterpiece.

COMMUNICATION OF DESIGN

Theory and design of communication processes.

Communication of identity.

Designing of the graphic communication.

Creation and production of graphic communication.

Typography and editorial design.

Signage programs.

Schematic.

Technical and graphics applications.

Corporate visual identity.

Creating graphics for packaging, wrappers and labels.

Design for digital media.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DD18.- Ability to make formal proposals product design with conventional techniques artistic expression (chiaroscuro, charcoal, pastel, watercolor, colored pencils, markers, tempera, airbrush) and computer assisted.

DD19.- Ability to communicate the product with illustrations, styling and sketches research, exploration, explanation and seduction.

DD20.- Ability to make proposals for analysis and synthesis of forms, from the knowledge of morphological variables: composition, harmony, rhythm, form, color, light and lighting, textures product, semantic and perceptual aspects of product.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)

E- Learning classes: PERSONAL STUDY		
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
5.5 LEVEL 1: GENERAL FORMATION IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT		
5.5.1 CORE DATA LEVEL 1		
LEVEL 2: MANUFACTURING		
5.5.1.1 Core Data Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: METROLOGY		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO

FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

The metrology laboratory.

Measurement uncertainty.

Calculation of uncertainty.

The measuring instrument. Measuring methods.

Interferometry.

Length patterns.

Instruments for the direct measurement of lengths.

Length comparators and verifiers.

Angle control.

Dimensional tolerances.

Adjustments.

Metrology forms.

Rugosity

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA1.- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.

DA3.- Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist		
5.5.1.5.3 SPECIFIC		
DD21.- Complementary knowledge of metrology, calibration and accreditation.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: ENGLISH		
5.5.1.1 Core Data Level 2		
TYPE	COMPULSORY	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO

ITALIAN	OTHER	
NO	NO	
LEVEL 3: ENGLISH APPLIED TO INDUSTRIAL DESIGN		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
Nominal groups. Extensive lecture: What is ID and why should I care? Oral expression: Microtext. Verb tenses: conditional sentences, passive voice. Extensive lectura: Built for Comfort ¿ Not for Speed. Oral expression: Microtext. Relative clauses. Extensive lectura: The use of Pyrex in Industrial Design. Oral expression: Microtext. Lexis: Word formation. Extensive lectura: Carbon Fibre in Industrial Design. Oral expression: Microtext. Expressing suasion and intelectual attitudes. Writing: Writing from sketches. Oral expression: Microtext. Giving factual information. Writing: Resumé, application letter. Oral expression: Microtext. Scientific symbol, signs and expressions. Writing: Reports and abstracts. Oral expression: Microtext.		
5.5.1.4 OBSERVATIONS		
5.5.1.5 COMPETENCES		
5.5.1.5.1 CORE AND GENERAL COMPETENCES		
DA18.- Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT.		
DA19.- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.		
5.5.1.5.2 CROSS-CURRICULUM		
No data exist		
5.5.1.5.3 SPECIFIC		
No data exist		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100

CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)

E- Learning classes: PERSONAL STUDY

On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: MATERIALS

5.5.1.1 Core Information Level 2

TYPE	COMPULSORY	
ECTS LEVEL 2	6	

DURATION

ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES

SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: MATERIAL TECHNOLOGY

5.5.1.1.1 Core Information Level 3

TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER

DURATION

ECTS Semester 1	ECTS Semester 2	ECTS Semester 3

ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

MATERIAL INSPECTION TECHNIQUES.

TECHNIQUES FOR OBTAINING AND TREATMENT OF MATERIALS.

BEHAVIOR IN SERVICE.

MATERIAL ENGINEERING.

RECYCLING AND RECOVERY OF MATERIALS.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.

DA7.- Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts of law, government and private company.

DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and Required standards

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DD22.- Knowledge and capacities for the application of materials engineering knowledge and skills for application of engineering materials.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
5.5 LEVEL 1: OPTIONAL LEARNING IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT.		
5.5.1 Core Data Level 1		
LEVEL 2: GRAPHIC EXPRESSION AND DESIGN.		
5.5.1.1 Core Information Level 2		
TYPE	OPTIONAL	
ECTS LEVEL 2	18	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	

NO	NO	
LEVEL 3: DIGITAL GRAPHIC DESIGN		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: IMAGES TREATMENT AND INDUSTRIAL PHOTOGRAPHY		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: MULTIMEDIA PRESENTATION OF THE PRODUCT		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO

GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

DIGITAL GRAPHIC DESIGN

Basics of Design

Basic forms of composition: The sign.

Color history and its basic principles.

Typography and its evolution.

Composition techniques.

Advertising design.

Corporate identity.

Layout.

Prepress and printing.

GRAPHIC DESIGN SOFTWARE THE PRODUCT MULTIMEDIA PRESENTATION.

Oral and written expression.

Graphical presentation of information.

Software for creating multimedia presentations.

IMAGE TREATMENT AND INDUSTRIAL PHOTOGRAPHY.

Photography.

General concepts.

The camera.

The analog image.

Digial treatment.

Digital image.

Video. Previous notions.

Introduction to Digital Video.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA10.- Ability for artistic expression with classical and expressive computer-assisted techniques.

DA11.- Ability for analysis and synthesis of form, color and texture, composition, harmony of the formal aspects of the product, and the application of social psychology and anthropology of the formal attributes of the product and the indexical semiotic.

DA12.- Ability to apply methodologies, techniques and tools for designing and developing products which enable a sustainable product design, packaging, and instructions in the different sectors of the habitat, consumption, furniture urban, industrial equipment and service organizations.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.
DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations
DA17.- Knowledge of graphic design and the information associated with the industrial design company systems, such as graphic design, signage and corporate identity design.
DA18.- Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT.
DA19.- Ability to integrate and lead multidisciplinary teams capable of solving technical changes and needs directives in national and international contexts, the use of ICT.
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DO1.- Ability to develop skills and abilities to perform graphic design projects, oriented mainly to the image of the Company, Brand and Product, Corporate Identity, Branding and Packaging.
DO5.- Knowledge of basic techniques and standards for images compression.
DO10.- Ability to communicate through images.
DO11.- Ability to differentiate features from the spoken expression and written expression characteristics.
DO15.- Ability to publicly launch a project or a report and present a topic to a specified audience.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY

On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: PROJECTS		
5.5.1.1 Core Information Level 2		
TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: PROJECTS OF INDUSTRIAL DESIGN		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		

THE ENGINEERING WORK: INDUSTRIAL DESIGNER.

TECHNICAL OFFICE OF INDUSTRIAL DESIGN AND ITS ORGANIZATION. COMPUTER APPLICATIONS TO THE OFFICE.

TECHNIQUES OF INDUSTRIAL DESIGN.

TECHNICAL REPORT, PATENTS AND CERTIFICATES.

INDUSTRIAL DESIGN PROJECT: DEFINITION AND PURPOSE; PHASES, FORMAL PRESENTATION AND STRUCTURE;
TRAMITACION.

PROJECT DOCUMENTS: GENERAL INDEX, MEMORY AND ANNEXES.

PROJECT DOCUMENTS: DRAWINGS

PROJECT DOCUMENTS: TERMS AND CONDITIONS

PROJECT DOCUMENTS: STATE OF MEASURES.

PROJECT DOCUMENTS: BUDGET.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DO2.- Knowledge of the structuring of a project

DO3.- Understanding the methodology for the implementation phase of the General Theory Project.

DO4.- Application of the knowledge acquired to the planning issues, administration and control of projects.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: DRAWING

5.5.1.1 Core Data Level 2

TYPE	OPTIONAL
ECTS LEVEL 2	6

DURATION

ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES

SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: DRAWING AND ANALYSIS OF FORMS

5.5.1.1.1 Core Information Level 3

TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER

DURATION

ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES

SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS
5.5.1.3 CONTENTS
Drawing as a historical representation system. Sketching techniques.
5.5.1.4 OBSERVATIONS
5.5.1.5 COMPETENCES
5.5.1.5.1 CORE AND GENERAL COMPETENCES
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DD18.- Ability to make formal proposals product design with conventional techniques artistic expression (chiaroscuro, charcoal, pastel, watercolor, colored pencils, markers, tempera, airbrush) and computer assisted.
DD19.- Ability to communicate the product with illustrations, styling and sketches research, exploration, explanation and seduction.
DD20.- Ability to make proposals for analysis and synthesis of forms, from the knowledge of morphological variables: composition, harmony, rhythm, form, color, light and lighting, textures product, semantic and perceptual aspects of product.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT

CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: LANGUAGE		
5.5.1.1 Core Information Level 2		
TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: MODERN LANGUAGE		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.3 CONTENTS

Oral and written comprehension.

Prepositions.

Languages & collocations.

Multiword verbs.

Modality.

Oral and written expression.

Speaking: An interview.

Speaking: Telephoning.

Speaking: An exposition.

Speaking: Participation in discussions.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DD18.- Ability to make formal proposals product design with conventional techniques artistic expression (chiaroscuro, charcoal, pastel, watercolor, colored pencils, markers, tempera, airbrush) and computer assisted.

DD19.- Ability to communicate the product with illustrations, styling and sketches research, exploration, explanation and seduction.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

No data exist

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)

E- Learning classes: PERSONAL STUDY

On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: SAFETY AND HEALTH

5.5.1.1 Core Data Level 2		
TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: SAFETY AND OCCUPATIONAL HEALTH		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		

Concepts of Health and Disease. Determining factors of Occupational Health.

Fundamentals and concepts related to health and safety: accidents at work and occupational disease.

Risk assessment: analysis, assessment and control of specific risks.

Accident investigation.

Individual and collective protection.

Introduction to occupational hygiene: hygienic assessment and risk assessment.

Basics of occupational toxicology.

Chemical agents.

Physical agents, noise and thermal environment.

Physical agents, ionizing and non-ionizing.

Biological agents, toxic and hazardous waste.

Introduction to ergonomics: analysis of working conditions.

Basic concepts on labor physiology.

Occupational Biomechanics. Disorders of the musculoskeletal system.

Physical workload.

Methods for evaluating the physical load.

Mental load of work: Psychosocial Risks at Work: Concept.

Notions of occupational epidemiology.

Legislation and Health.

Management of preventive activity.

Knowledge of first aid.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DO16.- Understand the meaning and necessity for safe working conditions.

DO20.- Knowing the main chemical and biological health hazards physical.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: MATERIALS

5.5.1.1 Core Information Level 2

TYPE	OPTIONAL
ECTS LEVEL 2	6

DURATION

ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES

SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: BEHAVIOR AND MATERIAL SELECTION

5.5.1.1.1 Core Information Level 3

TYPE	ECTS SUBJECT	DURATION
COMPULSORY	6	SEMESTER

DURATION

ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12

OFFERED IN THE FOLLOWING LANGUAGES

SPANISH	CATALAN	BASQUE
YES	NO	NO

GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

DETERMINATION OF FUNCTIONAL MATERIALS REQUIREMENTS.

DESIGN OF MATERIALS FOR ENGINEERING.

SELECTION OF MATERIALS.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.

DA7.- Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts of law, government and private company.

DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and Required standards

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DO21.- Knowledge and ability to determine the characteristic parameters of the behavior of materials in different conditions.

DO22.- Ability to select materials for specific applications.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100

CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: MANUFACTURING		
5.5.1.1 Core Data Level 2		
TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: DESIGN FOR MANUFACTURING		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9

	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

Design for manufacturing and assembly.

Selection process and materials.

Design Foundry.

Design pieces made by machining.

Design of pieces made by plastic forming.

Set design pieces made by welding.

Powder metallurgy.

Plastics, ceramics and composites.

Ergonomics.

Surface finish.

Techniques and related manufacturing processes.

Group technology and flexible manufacturing.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA1.- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.

DA3.- Ability to design, develop, measure, budget, evaluate and ensure the accessibility, ergonomics, usability and product safety, packaging, industrial packaging and related services, and specify them in a technical document according to established regulations and morphology in the various rules and regulations.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DO23.- Capacity for the implementation of integration in manufacturing design criteria.

5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: RECYCLING AND ENVIRONMENT		
5.5.1.1 Core Data Level 2		
TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO

GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: RECYCLING AND ENVIRONMENT		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS
5.5.1.3 CONTENTS
Introduction to ecodesign. Eco-products and sustainable development. Global Framework. Ecodesign and life cycle. Ecomaterials. Practical case studies.
5.5.1.4 OBSERVATIONS
5.5.1.5 COMPETENCES
5.5.1.5.1 CORE AND GENERAL COMPETENCES
DA2.- Ability to manage the activities under the development of products, from the perspective of the life cycle in the field of Industrial Design and Product Development.
DA4.- Ability to manage the design and innovation with strategic and forward-looking approach in terms of products, and processes distributed and concurrent product development in a business context.
DA10.- Ability for artistic expression with classical and expressive computer-assisted techniques.
DA12.- Ability to apply methodologies, techniques and tools for designing and developing products which enable a sustainable product design, packaging, and instructions in the different sectors of the habitat, consumption, furniture urban, industrial equipment and service organizations.
DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA18.- Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT.
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DB4.- Ability to understand and apply the principles of BASIC knowledge of general chemistry, organic and inorganic chemistry and applications in engineering.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: INDUSTRIAL ORGANIZATION

5.5.1.1 Core Data Level 2

TYPE	OPTIONAL

ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: OPERATIONS MANAGEMENT		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		

FUNCTIONS OPERATIONS MANAGEMENT.

LOCATION OF INSTALLATIONS.

DESIGN CAPACITY AND DISTRIBUTION OF THE INSTALLATIONS.

PLANNING AND ANALYSIS PROCESS.

DESIGN AND MEASUREMENT OF WORK.

TOTAL MASTER PLANNING AND PROGRAMMING.

MATERIALS MANAGEMENT: INVENTORY PURCHASE AND ACQUISITION.

INVENTORY CONTROL.

MATERIAL REQUIREMENTS PLANNING.

PROGRAMMING AND CONTROL OF PRODUCTION ACTIVITIES.

PROJECT MANAGEMENT.

QUALITY CONTROL.

MAINTENANCE AND RELIABILITY.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.

DA7.- Ability to perform calculations, valuation, appraisal, surveys, reports, opinions and records CE conformity marking, scheduling and similar work of industrial design and product development, both the courts of law, government and private company.

DA13.- Ability to recognize, understand and implement the necessary legislation during the development the occupation of Industrial Design and Product Development Engineer and managing specifications, regulations and Required standards

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA16.- Knowledge and application of basic principles of economics and human resource management, organization and project planning, as well as legislation, regulation and standardization in the field of design and development projects portfolio ranges, lines and product family.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

No data exist

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: AUTOMATICS

5.5.1.1 Core Data Level 2

TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: MODELING AND SIMULATION OF PRODUCTION SYSTEMS.

5.5.1.1.1 Core Information Level 3

TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
		6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	**CATALAN**	**BASQUE**
YES	NO	NO

GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	**GERMAN**	**PORTUGUESE**
NO	NO	NO
ITALIAN	**OTHER**	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

Introduction to systems. Modeling systems.

Simulation languages and systems.

Continuous-time simulation and discrete time.

Discrete event systems.

Modeling and experiments.

Design and analysis of production systems.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA1.- Ability to design, edit, organise, plan, and sign industrialization projects in the field of Industrial Design Engineering and Product Development, aimed at the design, development, exploitation and other tasks products associated, product family product portfolio and associated support systems.

DA5.- Ability to generate scale models and rapid protoTYPEs, short series and industrialization of the product under economic criteria, safe and environmentally friendly.

DA8.- Ability for modeling, simulation and optimization of products in the context of a proposed industrial product, articulating the basic knowledge of the engineering branch and technological knowledge specific of the design specialty and product development associated tools.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

No data exist

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
	60	100

CLASSROOM LEARNING ACTIVITIES		
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)
E- Learning classes: PERSONAL STUDY
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: CONTINUOUS MEANS MECHANICS.		
5.5.1.1 Core Data Level 2		
TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: AIDED DESIGN AND STRUCTURAL ANALYSIS		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3

ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
	6	
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS

5.5.1.3 CONTENTS

INTRODUCTION TO THE STRUCTURAL ANALYSIS BY COMPUTER.

GENERAL ANALYSIS OF STRUCTURAL TYPE.

MATRIX CALCULATION OF FLAT STRUCTURES ARTICULATED BAR JOINTS. EXAMPLES.

COMPUTER ANALYSIS OF FLAT STRUCTURES ARTICULATED BAR JOINTS. APPLICATION EXAMPLES.

MATRIX CALCULATION OF THREE-DIMENSIONAL STRUCTURES ARTICULATED BAR JOINTS. APPLICATION EXAMPLES.

MATRIX CALCULATION OF STRUCTURES FLAT BARS RIGID JOINTS. APPLICATION EXAMPLES.

COMPUTER STRUCTURAL ANALYSIS FLAT BARS RIGID JOINTS. APPLICATION EXAMPLES.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA8.- Ability for modeling, simulation and optimization of products in the context of a proposed industrial product, articulating the basic knowledge of the engineering branch and technological knowledge specific of the design specialty and product development associated tools.

DA14.- Ability to solve problems with initiative, make decisions with autonomy and creativity and communicating and transmitting knowledge, skills, and achievements of the profession of Industrial Design and Product Development Engineering in a valid, reliable and efficient way.

DA15.- Knowledge of basic materials, technologies and tools which enable learning and development of new methods and technologies, as well as to equip them with the versatility to adapt to new situations.

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist		
5.5.1.5.3 SPECIFIC		
DB2.- Understanding and mastering the basic concepts of the general laws of mechanics, thermodynamics, , electromagnetism and their application to solving engineering problems.		
DB3.- Basic knowledge of the use and programming of computers, operating systems, databases and programs computing with applications in engineering.		
DB5.- Ability for spatial vision and knowledge of graphic representation techniques, both traditional methods metric and descriptive geometry, and geometry through applications of computer-aided design.		
5.5.1.6 LEARNING ACTIVITIES		
LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100
5.5.1.7 TEACHING METHODS		
On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)		
On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)		
On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)		
E- Learning classes: PERSONAL STUDY		
On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)		
5.5.1.8 EVALUATION SYSTEMS		
EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0
LEVEL 2: ELECTRICITY		
5.5. Core Data Level 1		
TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH

NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: TECHNIQUES OF LIGHTING AND DOMOTICS		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
6		
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		

BASIC FACTORS IN LIGHTING.

MAGNITUDES AND UNITS USED IN LIGHTING.

LIGHTING CHARTS AND GRAPHS.

CONSIDERATION, ABSORPTION AND TRANSMISSION OF LIGHT.

TECHNOLOGICAL ASPECTS INCANDESCENT LAMPS.

DISCHARGE LAMPS (I)

DISCHARGE LAMPS (II)

INTERIOR LIGHTING PROJECT.

OUTDOOR LIGHTING PROJECT.

FUNDAMENTAL PRINCIPLE OF STREET LIGHTING.

BASICS TO CONSIDER IN THE CALCULATION ASPECTS OF PUBLIC STREET LIGHTING.

POWER SUPPLY AND CONTROL OF LIGHTING INSTALLATIONS.

GENERAL INTRODUCTION.

WHAT IS MEANT FOR DOMOTICS?

AUTOMATION MARKET CHARACTERISTICS.

USER REQUIREMENTS.

ADJUSTMENT A HOME AUTOMATION SYSTEM.

USER REQUIREMENTS.

ADJUSTMENT A HOME AUTOMATION SYSTEM.

HOME AUTOMATION APPLICATIONS.

DOMOTIC CONDITIONING FOR BUILDING CONSTRUCTION.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.

CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.

CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.

CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

DO25.- Knowledge and use of the principles of circuit theory and electrical machines.

DO26.- Ability to calculate and design electrical installations of low and medium voltage.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)

E- Learning classes: PERSONAL STUDY

On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT

CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0
FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

LEVEL 2: ENERGY EFFICIENCY IN THE PRODUCT.		
5.5.1.1 Core Data Level 2		
TYPE	OPTIONAL	
ECTS LEVEL 2	6	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

LEVEL 3: ENERGY EFFICIENCY IN THE PRODUCT.		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
OPTIONAL	6	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	6	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	

5.5.1.2 LEARNING RESULTS
5.5.1.3 CONTENTS
Energy: past, present and future. Energy efficiency in the product. Fundamental concepts.

Energy efficiency analysis in building products.

Energy efficiency analysis in industrial processes.

Energy efficiency analysis in transportation products.

5.5.1.4 OBSERVATIONS

5.5.1.5 COMPETENCES

5.5.1.5.1 CORE AND GENERAL COMPETENCES

DA4.- Ability to manage the design and innovation with strategic and forward-looking approach in terms of products, and processes distributed and concurrent product development in a business context.

DA6.- Ability to design integrated into the company, users, groups, culture and environment products through technical product platform, modular design, ergonomics and eco-efficient design, analyzing and evaluating the social impact and environmental impact of technical solutions, understanding the ethical and professional responsibility of the activity of the Engineer in Industrial Design and Product Development, under ethical criteria.

DA12.- Ability to apply methodologies, techniques and tools for designing and developing products which enable a sustainable product design, packaging, and instructions in the different sectors of the habitat, consumption, furniture urban, industrial equipment and service organizations.

DA18.- Ability to communicate and discuss proposals and conclusions in multilingual, specialized and unskilled forums, in a clear and unambiguous way, with the use of ICT.

5.5.1.5.2 CROSS-CURRICULUM

No data exist

5.5.1.5.3 SPECIFIC

No data exist

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	60	100
CLASSROOM ACTIVITIES	75	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS

On campus: EXPOSITIVE ACTIVITIES (MASTERCLASS, CONFERENCE, TALK…)

On campus: PRACTICE ACTIVITIES IN CLASSROOM (ACCOMPLISHMENT OF PROBLEMS, ACTIVITIES OF DESIGN, SIMULATION EXERCISE, ACCOMPLISHMENTS OF TECHNICAL REPORTS, BIBLIOGRAPHIC REVISION, ETC)

On campus: PRACTICE ACTIVITIES IN SPECIFIC FACILITIES (LABORATORY PRACTICE, IN COMPUTER ROOMS, IN LANGUAGE CLASSES, IN AUDIOVISUAL MEDIA CLASSROOM S, IN WORKSHOPS...)

E- Learning classes: PERSONAL STUDY

On campus: ASSESSMENT ACTIVITIES (DOING PARTIAL AND FINAL EXAMS, PRESENTATIONS OF WORKS, PROJECTS, PARTICIPATION IN CLASS…)

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
CONTINUOUS OR TRAINING EVALUATION (BETWEEN 0% AND 100% OF THE DEGREE): Masterclasses, problem solving, laboratory practice, personal work, follow-up exams.	0.0	100.0

FINAL EXAM (BETWEEN 20% AND 80% OF THE DEGREE): In-class test, minimum two hours and maximum four.	0.0	100.0

5.5 LEVEL 1: END OF DEGREE PROJECT		
5.5.1 Core Data Level 1		
LEVEL 2: END OF DEGREE PROJECT		
5.5.1.1 Core Data Level 2		
TYPE	END OF DEGREE PROJECT	
ECTS LEVEL 2	12	
DURATION: Semester		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	12	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
LEVEL 3: END OF DEGREE PROJECT		
5.5.1.1.1 Core Information Level 3		
TYPE	ECTS SUBJECT	DURATION
END OF DEGREE PROJECT	12	SEMESTER
DURATION		
ECTS Semester 1	ECTS Semester 2	ECTS Semester 3
ECTS Semester 4	ECTS Semester 5	ECTS Semester 6
ECTS Semester 7	ECTS Semester 8	ECTS Semester 9
	12	
ECTS Semester 10	ECTS Semester 11	ECTS Semester 12
OFFERED IN THE FOLLOWING LANGUAGES		
SPANISH	CATALAN	BASQUE
YES	NO	NO
GALICIAN	VALENCIAN	ENGLISH
NO	NO	NO
FRENCH	GERMAN	PORTUGUESE
NO	NO	NO
ITALIAN	OTHER	
NO	NO	
5.5.1.2 LEARNING RESULTS		
5.5.1.3 CONTENTS		
END OF DEGREE PROJECT		
5.5.1.4 OBSERVATIONS		
5.5.1.5 COMPETENCES		

5.5.1.5.1 CORE AND GENERAL COMPETENCES
CC1 - Ability to prove, recall and understanding knowledge in a field of study which assumes general secondary education, and is typically at a level which, while it is supported by advanced textbooks, also includes some aspects involving knowledge of the forefront of their field of study.
CC2.- Ability to apply their knowledge to their work professionally and possess the skills typically demonstrated through the development and defending arguments and solving issues within their field of study.
CC3.- Ability to gather and interpret relevant data (usually within their field of study) in order to make judgements including consideration on relevant social, scientific or ethical issues.
CC4.- Ability to communicate information, ideas, problems and solutions to both specialist and non-specialized public.
CC5.- Ability to develop those learning skills necessary to undertake further studies with a high level of autonomy.
5.5.1.5.2 CROSS-CURRICULUM
No data exist
5.5.1.5.3 SPECIFIC
DFG- Ability to perform an exercise individually, expose and defend in front of an university tribunal, consisting in a Project of Design Engineering and Product Development of professional nature in which the skills acquired in the lessons are synthesized.

5.5.1.6 LEARNING ACTIVITIES

LEARNING ACTIVITY	HOURS	PRESENTIALITY
CLASSROOM LEARNING ACTIVITIES	30	100
CLASSROOM ACTIVITIES	255	0
EVALUATION	15	100

5.5.1.7 TEACHING METHODS
On-Campus: TEACHING TUTORING
On-Campus: ASSESSMENT ACTIVITIES (PARTIAL AND FINAL EXAMS, AUTO ASSESSMENT, fulfillment of jobs or projects, class participation ...)
E- Learning : Personal working

5.5.1.8 EVALUATION SYSTEMS

EVALUATION SYSTEM	MINIMAL ASSESSMENT	MAXIMAL ASSESSMENT
DEFENSE IN FRONT OF AN EXAMINING BOARD OF THE END OF DEGREE PROJECT	0.0	100.0

6.1 TEACHERS AND OTHER HUMAN RESOURCES

6. ACADEMIC PERSONNEL

University	Category	Total %	Doctors %	Hours %
University of Malaga	Lecturer at the University	97	100.0	25.0
University of Malaga	Associate Professor At the University	27.1	100.0	25.0
University of Malaga	Lecturer at the University	6.4	100.0	25.0
University of Malaga	Associate Professor At the University	23.65	0.0	25.0
University of Malaga	Doctor Assistant	3.94	100.0	25.0
University of Malaga	Assistant	0.49	0.0	25.0
University of Malaga	Associate Professor (includes associated profesor of the Faculty of Health Sciences	20.2	0.0	25.0
University of Malaga	Collaborating professor. Licensed.	3.94	0.0	25.0
University of Malaga	Professor hired. Doctor	8.87	100.0	25.0
University of Malaga	Another teaching Personnel with Employment contact	3.44	0.0	25.0

ACADEMIC PERSONNEL
See annex, paragraph 6
6.2 ANOTHER HUMAN RESOURCES
See annex, paragraph 6.2

7. MATERIAL RESOURCES AND SERVICES

Vindication the available material resources are adequate: See annexes, paragraph 7.

8. EXPECTED RESULTS

8.1 QUANTITATIVE VALUES ESTIMATION		
GRADUATION RATE %	DROPOUT RATE %	EFICIENCY RATE %
15	30	60
CODE	RATE	VALUE %
No data exist		
Vindication of proposed indicators:		
See annex, paragraph 8.		

8.2 GENERAL PROCEDURE FOR EVALUATING THE PROCESS AND RESULTS

The regulation of the procedure to be followed at the University of Malaga for assessing the progress and results of student learning, in general, it is contemplated in Article 134 of the Statutes of the University, approved by Decree of the Andalusian Regional Government, number 145/2003, of June 3rd (BOJA of June 9th).

In accordance with the provisions of the aforementioned article, for each academic year, and sufficiently in advance to commence the corresponding school year, the School Meetings, based on the information provided by the relevant departments, shall approve the academic schedule of the teaching that belong to the official qualifications taught in the CENTRE. This program should include, inter alia, the teaching program of each of the relevant subjects, and this, in turn, shall incorporate the evaluation system of the students academic performance, Adjustment the type of tests, their number, the criteria for correction and the components that shall be considered for the student
final grade

The aforementioned evaluation system should, in turn, take into account the provisions of article 124 of the quoted Statutes, which establishes the right of students to submit to two ordinary exam sessions per academic year.

In addition to the aforementioned procedure, consequence of the current legal regime in the subject, the assessment of progress and results of student learning is also contemplated in the PE03 procedure ("Measurement, Analysis and Continuous Improvement") of the Quality Assurance System, which is contained in section 9.2 of the Statement, in order to achieve improvement of the teaching quality.

According to the Report on Teaching Innovation in Andalusian Universities (CIDUA), assessment of progress and learning outcomes of students, shall be carried out taking into account that the evaluation should be

considered
as an opportunity to determine the quality of the teaching-learning process and an opportunity for its reformulation and improvement..

The central aim of the evaluation model proposed by the University of Malaga is that the student is aware at all times of their learning process, understand what they learn, Ability to apply it and understand the meaning and social and professional usefulness of learning that they perform. The fundamental methodological support of the teaching project that guide the proposed model framework rely on a combination of individual work, teacher explanations, experimentation in practice, interaction and cooperative work among equals and communication with the tutor.

In summary, it is about transforming the conventional model of oral transmission of knowledge, note-taking and reproduction of what is transmitted in tests and examinations, into a model that reaffirms the tutorial nature of university educational function, which caters to the peculiarities of professional and academic learning of each student.

9. QUALITY ASSURANCE SYSTEM

LINK	http://www.politecnica.uma.es/contenidos/general.action?idselectedsection=2&selectedsection=Conoce%20la%20EPS&parentmenu=Garant%EDa%20de%20la%20Calidad&submenu=Manual%20Sistema%20de%20Calidad&idpage=205

10. IMPLEMENTATION CALENDAR

10.1 IMPLEMENTATION TIMELINE	
COURSE ENTRY	2010

See annex, paragraph 10.

10.2 ADAPTATION PROCEDURE

REGULATION RULES OF THE ADAPTATION SYSTEM OF THE DEGREE QUALIFICATIONS OF STUDENTS FROM PHASED OUT EDUCATIONS BECAUSE OF THE IMPLEMENTATION OF SUCH QUALIFICATIONS.

Article 1. Field of application.
The current rules are applicable to students at the University of Malaga, with transcript in force, in the university degrees of official status about to become extinct as a result of the implementation of an official university degree at the university.
Article 2. Adaptation procedure.
1. Students to whom these rules are applicable may be adapted to the corresponding official degree, in any academic year, without having to request the corresponding vacancy through the pre-enrollment procedure.
2. The administrative procedure for executing the adaptation refered by the previous paragraph shall start upon request, addressed to the Dean/Director of the respective Centre of the University of Malaga during the corresponding official period for student enrollment.
3. The aforementioned adaptation shall entail the right to formalise the enrollment as a student of the respective official degree, without the need to request for the vacancy through the pre-enrollment process not either obtain recognition of credits, in accordance with the provisions of the "regulatory standards of the recognition of studies and activities, and work and professional experience, in order to obtain official university Degrees and Master, as well as transfer credits" approved by the Governing Council of the University of Malaga, meeting of June 23rd, 2011.
Article 3. Fighting Procedures curricula.
1. The expiration of the curricula corresponding to the qualifications referred by the article 1 of the current rules shall occur temporarily, year by year, starting from the academic year in which the respective Degree is implemented, but in any case may exceed the date of September 30th, 2015.
2. After each course has been extinguished, six calls to examination of the corresponding subjects shall be made within three academic years, which will be open to students who may apply the current rules and who are enrolled in these subjects in the reference academic year. This possibility of audience shall also affect students who have not previously studied the corresponding subjects, provided the respective evaluation system so permits.
3. Students who exhaust all calls indicated in the previous paragraph without having passed the respective subjects, may be adapted to the corresponding official Degree, in the same conditions as indicated in article 2 of the current rules.

Table of adaptations

Technical Industrial Design Engineer	Graduate in Industrial Design Engineering and Product Development from the University of Malaga
Mathematical fundamentals of Engineering	Calculus
Applied Statistics and Modelling	Vector and Statistical Analysis
Fundamentals of Physics	Physics 1 Physics 2
Introduction to Computing	Fundamentals of Computing
Fundamentals of Chemistry	Chemistry
Graphic Expression	Graphic Expression in Engineering
Economic and business aspects of the design	Business Management
Fundamentals of Materials	Science of Materials
Industrial processes	Industrial processes
Design of fluids and thermal facilities. Action for fluids systems.	Energy Engineering and Fluids-mechanics
Strength of materials	Strength of materials
Integrated manufacturing systems.	Electronics and product automatization.
Three-dimensional rendering systems applied to industrial design.	Technical Drawing.
General Electrical Engineering Industrial design in electrical engineering.	Fundamentals of Electrical Engineering
Mechanical systems.	Mechanical systems.
Methodology of design.	Methodology of design.
Design and product.	Ergonomic design and ecodesign.
Computer aided Design.	Computer Aided Design.
Graphic Expression.	Graphic Engineering of the Product.
Aesthetics and Industrial Design.	Theroy and Aesthetics of Industrial Design.
Aesthetics and Industrial Design.	Historic-cultural development of Industrial Design
Artistic Expression	Fundamentals of Design.
Artistic Expression	Communication Design.
Quality Technology	Metrology
Graphic Design at Industry	Digital Graphic Design.
Images Treatment and Industrial photography	Images Treatment and Industrial photography
Natural Drawing and movement	Drawing and shapes analysis
Modern language (French) Modern language (English) Modern language (German) Modern language (Italian)	Modern language
Health and safety at work	Occupational Safety and Health

Tecchnology of materials	Behavior and material selection
Design for manufacturing	Design for manufacturing
Recycling and environment	Recycling and environment
Technological innovation. Quality Management.	Operations Management
Design of structures	Design and STRUCTURAL ANALYSIS
Electric lighting technology	Home Automation and Lighting Techniques

10.3 STUDIES BEING PHASED OUT	
CODE	PLAN - CENTRE
5047000-29009119	Technical Engineer in Industrial Design – Escuela Politécnica Superior

11. PERSONS ASSOCIATED WITH THE APPLICATION

11.1 RESPONSIBLE FOR DEGREE			
NIF	NAME	LAST NAME 1	LAST NAME 2
33381949W	Alejandro	Rodríguez	Gómez
ADDRESS	POSTAL CODE	PROVINCE	TOWNSHIP
Campus Universitario de Teatinos. HIGHER POLYTECHNIC SCHOOL	29071	Malaga	Malaga
EMAIL	PHONE	FAX	CHARGE
arodriguez@uma.es	952131038	952132694	DIRECTOR OF HIGHER POLYTECHNIC SCHOOL

11.2 LEGAL REPRESENTATIVE			
NIF	NAME	LAST NAME 1	LAST NAME 2
25084614D	MARIA JOSE	BLANCA	MENA
ADDRESS	POSTAL CODE	PROVINCE	TOWNSHIP
C/ El Ejido s/n. PABELLÓN DE GOBIERNO DE LA UNIVERSIDAD DE MALAGA	29071	Malaga	Malaga
EMAIL	PHONE	FAX	CHARGE
blamen@uma.es	952131038	952132694	VICE-RECTOR OF ACADEMIC ORDINANCE AND FACULTY

11.3 APPLICANT			
Responsible for degree is not the applicant			
NIF	NAME	LAST NAME 1	LAST NAME 2
25084614D	MARIA JOSE	BLANCA	MENA
ADDRESS	POSTAL CODE	PROVINCE	TOWNSHIP
C/ El Ejido s/n. PABELLÓN DE GOBIERNO DE LA UNIVERSIDAD DE MALAGA	29071	Malaga	Malaga
EMAIL	PHONE	FAX	CHARGE
blamen@uma.es	952131038	952132694	VICE-RECTOR OF ACADEMIC ORDINANCE AND FACULTY AT THE UNIVERSITY OF MALAGA

ANNEXES : PARAGRAPH **2**
Name : APARTADO_2_JUSTIFICA PROPUESTA_ING_DIS_IND.pdf
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Size : 157625
APARTADO_2_JUSTIFICA PROPUESTA_ING_DIS_IND.pdf

ANNEXES : PARAGRAPH **3**
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Size : 58333
APARTADO_4.1_INGENIERIA_DISEÑO_INDUSTRIAL.pdf

ANNEXES : PARAGRAPH **5**
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Size : 36634
APARTADO_5.1._ PLAN ESTUDIOS_ ING_DISEÑO_IND.pdf

ANNEXES : PARAGRAPH **6**
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HASH MD5 : a056af50f12f745107140dc5718deaff
Size : 92226
6. RRH PDI.pdf

ANNEXES : PARAGRAPH **6.2**
Name : 6.2. OTROS RECURSOS HUMANOS.pdf
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6.2. OTROS RECURSOS HUMANOS.pdf

ANNEXES : PARAGRAPH **7**
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APARTADO_7_RECURSOS MATERIALES.pdf

ANNEXES : PARAGRAPH **8**
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8 ING DISEÑO JUSTIFICA TASAS.pdf

ANNEXES : PARAGRAPH **10**
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Size : 105685
APARTADO_10_1_ING. DISEÑO INDUSTRIAL.pdf

ANNEXES : PARAGRAPH **11**
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Size : 114367
DELEGACION FIRMA _ [Maria Jose Blanca Mena].pdf