PRODUCT DESIGN
1st and 2nd semester

DESIGN BASICS

The main role of this subject is to equip students with the basic resources for creation in terms of form, composition and colour, through creative and experimental learning processes, building on students' existing skills and knowledge.

The content of this course is taught according to concise learning processes, which help students to assimilate the principles of visual language, providing them with a solid base of knowledge and skills in complex visual processes.

DRAWING AND GRAPHIC TECHNIQUES

This course provides students with an introduction into the theory and practice of techniques, methods and procedures that will enable them to represent three dimensional objects in a two dimensional plane using conventional drawing techniques. Students will develop their ability to graphically define ideas, images, objects and spaces, whether real or of their own invention.

This subject fulfils two roles: it is based on students' ongoing work under the guidance of the teacher, as it is an essentially practical and experimental course, and it acts as a basic introduction to graphic expression applied to design.

SYSTEMS OF REPRESENTATION

In the Systems of Representation course, students will build on their knowledge and learn different communication and information languages.

They will learn to develop a spatial perspective of objects, incorporating logic into the drawings and constructions that they propose, which must always centre on the need to communicate. This will be in addition to other specific languages that will help to clarify ideas and the aesthetic, technical and formal information of the item in question.

Finally, students will approach any technical representation issues that may arise in Design studies.

They will learn the following representation systems: Orthographic projections, Axonometric and Conical projections, and sketching.

DIGITAL LANGUAGES AND TECHNIQUES

The aim of this subject is for students to learn the importance, relevance and application of IT tools in the product design sector and to gain the necessary skills to use basic procedures used in computer-based drawing and design. In short, students will use new technologies as a technique in their creative and productive process and as a tool for communication and management.

PHOTOGRAPHY AND AUDIOVISUAL MEDIA

Photography and Audiovisual Media (PAM) is a practical and workshop-based subject. After starting off by looking at concepts, students then get to grips with the subject through practical projects, showing them that photography and audiovisual media are the tools by which modern designers can universally exhibit their creations. In this approach, the contents of PAM have not only been created for students to learn to use these tools for audiovisual creation and distribution (vimeo, youtube, etc.) but also to integrate photography and audiovisual media into design itself.

At present, 100% of design knowledge and promotion is carried out by means of a photo or a video. Based on this reality, the aim is to turn photography and video into more than just a tool, into another element of the designer's work, thereby converting this tool of photographic and videographic distribution into a tool for creation and design. In other words, in PAM,

students gain technical and practical skills in the use of cameras, lighting and video and photo-editing software, but integrated in the design process.

PRINCIPLES OF DESIGN HISTORY (theoretical)

Principles of Design History is a basic subject that forms part of the Art and Design History area. Each teaching unit gives a detailed view of design history and links it to examples of contemporary art and architecture.

The subject provides future professionals with essential training in styles, movements, trends and designers. In this regard, the course contents support and add to the technical education of designers by asking them to critically consider the historical-conceptual context.

SCIENTIFIC PRINCIPLES OF DESIGN (theoretical)

This subject provides the scientific tools students need to be able to later approach the technological contents of the Product Design specialization.

The course is a combination of theory and practice, and is prepared according to the artistic specialization in order to adapt the scientific techniques to the student's profile. They will learn to correctly apply calculation tools, interpret the necessary physical and chemical phenomena, and analyze the behavior of the different elements that constitute a Product Design project, whilst being aware of the need to conserve the environment.

BASIC PROJECTS (practical)

This subject initiates students in project work and teaches them the basic resources and criteria necessary to successfully carry out and resolve projects in later years.

Students will become familiar with project techniques, tools and skills by combining different knowledge and skills.

By carrying out a specific, basic project, students will work combining theory and practice, like a game between experiences and skills, which will help them in the art of designing. While carrying out the project, students will be able to apply and gain practical experience of the information learnt in the subject; they will be able to experiment and try out techniques and tools to learn new skills.

The methodology followed in this subject could be described as an open system that enables students to structure a design project according to the conditions imposed by the product to be designed, identifying: its phases, its procedures, actions, etc

DESIGN AND BUSINESS (theoretical)

This subject provides students with basic knowledge on the workings of the economy and companies.

Decision-making, internal company practices and the relationships that businesses make with the market, as well as the protection of designers' rights, are key areas of knowledge for future designers to be able to successfully apply and exercise their technical and creative skills in the professional world.

SPACE AND VOLUME (practical)

Space and Volume is a pivotal subject for students to understand and develop their visual language in a physical, three-dimensional context by learning specific, volume-related procedures and how to handle physical components. These tools bring students closer to understanding the tangible and sensitive aspects of forms and as a result, to the physical experience of the creative process from an intuitive and unique perspective.

3rd and 4th semesters

MATERIALS

Product designers must be able to approach the extensive range of materials available today and understand which will best adapt to the final characteristics they are looking for in a product. This is a scientific subject and will equip students with the necessary knowledge to make these decisions.

STRUCTURES AND SYSTEMS

This subject provides students with the necessary foundations to know how to solve and calculate structures, which is vitally important in the field of product design.

Product designers need to learn these skills in order to improve and guarantee the stability of their designs.

TECHNICAL DEPARTMENT PROJECTS

This type of project is one that could occur in professional situations when a designer is working in a company's Design Department.

In this case, the design of a product will be carried out according to strict, pre-established project conditions (work order), proposed by the Design Department.

Even though students will carry out all the phases of the project, they will focus on the technical phase, meaning that they will become familiar with the technical language, standards and technical communication.

This type of project is highly structured in terms of information input and output, with little room for freedom and risk, and is highly defined.

The technical communication and standards are set out according to:

- 1. Report, which will include the Background Report; the Objectives Report (of the project); the Design Criteria Report, (conceptual or supporting report), and the Descriptive Report.
- 2. Appendices.
- 3. Plans compliant with standards, with an overview plan and detail plans.

This standardised, technical communication may be used with the same structure in different countries, taking into account the technical standards in place in each country.

HISTORY AND CULTURE OF PRODUCT DESIGN

Building on the contents studied in the Principles of Design History, this subject is more specifically linked to the specialisation of Product Design. The aim of the course is to define and update the theoretical field known as the History of Industrial Design.

The main mission of this subject is to organically link events that have determined the development of product design with leading design theories and how these can be seen in the various artistic languages of everyday objects.

INDUSTRIAL DRAWING

Industrial Drawing offers students the communication tools they need to convey the graphic documents that make up a design project, using plans that are compliant with current standards, making it possible to manufacture and mass produce objects and their parts.

The contents of the course comprise a study programme in which communication and creative development converge into a single project process and are reflected in the various sections that make up the graphic documentation of the project.

The standards, graphic symbology, finishes and presentations form part of the visual language that we refer to in the learning process.

DESIGN STUDIO PROJECTS

In Design Studio Projects, students will work on areas of design with a highly-structured input of information and a highly varied output. In this type of project, there is a moderate level of freedom, risk, and definition.

The setting for these projects could occur in professional situations in which the designer is working on an assignment ordered by a specific company in areas such as innovation, idea contributions, tenders, or trend proposals to make potential developments that are qualitatively innovative to provide solutions for types, materials, uses and production arising from new approaches, etc. These are jobs in which the demand, proposal or assignment may be defined by a brief or pre-established project conditions.

The project process and the creation of alternative proposals will be subject to how the client responds and their acceptance. During the project process, students will gain experience in finding, processing, organising and simplifying information; and in working with systems, organising and simplifying that information.

CULTURE OF DESIGN

In today's society there is a growing need for information about and, communication with one's most immediate environment and with the world in general. Following the process of globalisation and the constant changes facing social groups, there is a need to study human beings and the cultural manifestations that surround them and determine their reality. A designer must be able to understand all these phenomena, be able to adapt to the circumstances and decide what they are designing, and how and why they are doing it.

Through Culture of Design students will become familiar with and understand the meaning of design in contemporary societies, with the aim of being able to effectively communicate with the support of semiotics, aesthetic and the theory of form, function and structure.

In short, when a designer enters the professional world of work, he or she will need to intuitively sense and understand cultural, social and artistic changes to plan well-suited and responsible solutions in their cultural and social context.

MANUFACTURING PROCESSES

Choosing a material or a manufacturing process is a rational and objective exercise, but there is almost always more than one solution to create a form, structure or an aesthetic, as well as ways to reduce costs.

This subject studies product design, focusing on the manufacturing processes that currently exist on the market. It provides students with information on moulding, plastic deformation, material removal and bonding pieces made of different materials. It aims to be a tool for students to be able to assess the potential of their ideas and decide which manufacturing process would be the most suitable to carry out on an industrial scale.

It is crucial for designers to know the correct manufacturing process for each design as the initial investment needed for large-scale industrial manufacturing can be considerable.

BIONICS AND ERGONOMICS

Ergonomics is an essential factor for success both in product design and in occupational design. It is something that has to be considered in the first stages of the design process.

Bionics offers a different focus when approaching design, looking at nature with a new perspective.

This subject aims to provide students with the information they need to carry out designs according to ergonomic and bionic criteria.

MODELLING AND PROTOTYPING

Creating models and prototypes is essential during the process of a product design project. These are very useful both in the physical and tangible visualisation phases and in the final checks before the industrial production of the product.

The conceptual or experimental scale-models, the volume, ergonomics, and presentation models, and quick, virtual prototypes etc. are three-dimensional representations that make it possible for the designer to clearly visualise the product and understand the formal, functional and symbolic configuration of the object being designed.

This subject initiates students in conceptual and three-dimensional design, making it possible to physically and/or virtually represent their initial ideas and verify specific aspects of the product being developed. The contents related to modelling materials and processes will qualify these future professionals to independently carry out three-dimensional visual configuration projects.

5th and 6th semester

PACKAGING PROJECTS

Packaging can be any product, manufactured with any sort of materials, that is used to contain, protect, handle, distribute, present and promote goods, which are transformed from raw materials into finished products and even services, in any phase of the manufacturing, distribution and consumption chain.

In a market as demanding as today's, packaging marks a key factor in innovation and competitiveness, and the sectors that call on its services are increasingly more receptive to the need for a design that fits the specific requirements of each product and user.

Packaging projects is a subject that looks at the professional situations in which designers work; in the areas of innovation and differentiation, having to closely watch social and economic codes (protection and conservation, promotion, presentation, choice of materials and production systems, sustainability, etc.), and variables in the field of communication and marketing (identification and differentiation in a highly segmented market, trend and consumption studies related to users, etc.).

In this course, students will carry out short projects and exercises, that may be open or defined, whether designing a new product, doing a redesign, styling or even a concept design; in all cases observing the requirements of the products to be packaged, consumer habits and market expectations.

AESTHETICS AND CONTEMPORARY TRENDS IN PRODUCT DESIGN

This subject is the culmination of the History of Product Design courses, as it focuses on the theoretical and aesthetic analysis of contemporary product design and its relationship with political and cultural, social and economic, environmental and technological phenomena that are constantly transforming the daily life of society.

This course will consist of assessing design products that have appeared since the emergence of postmodernism and the multiple trends and structure that it has taken on after the turn of the century, with the challenges of today and the trends of tomorrow.

The aim is not only for students to learn about the latest trends in product design but also to receive training in research techniques and methods that are inherent to this specialisation.

MARKETING AND COMMUNICATION

This subject analyses the concept and practise of marketing an object so that these future designers understand Marketing philosophy and are able to apply marketing principles, methods and techniques to develop their own collections and to apply in their professional careers.

Marketing is about creating a product or service that satisfies the needs of the client, offering it at a price that clients are willing to pay, making it available to the client in the place and at the time that they want it and drawing attention to it using codes and media that the client can relate to. Product designers need to identify and understand marketing strategy, the business environment, the target audience, positioning and companies' marketing mix, to be able to design a product whose values suit those of the client. Product designers have to create products that satisfy the needs of the client.

Marketing is about creating, communicating, delivering and exchanging proposals with the

highest value for its clients. Once exercising their profession, designers need to apply marketing principles and techniques to survive in a highly competitive and increasingly demanding environment.

RESEARCH AND PROPOSAL PROJECTS

In the Research and Proposal Projects subject, students carry out projects that may occur in professional situations when designers participate in idea contests, in research seminars on new concepts or in research labs. Creativity, innovation and coherence between research and the proposal are aspects that are highly valued in this subject.

The projects carried out in this subject have an ambiguous structure both in terms of input (at the start of the project) and in the output (proposal). Here students have a high level of freedom and there is a high level of risk and the project definition and details are lower.

WOOD WORKSHOP

There is a vast range of materials that designers can use to take their idea from the sketch stage to the final prototype of a product. The Wood Workshop offers students a wealth of information and possibilities. The huge versatility, variety of types of wood and ways of working it make it the ideal material for students' training. Its expressive nature, its finishes and the different ways of marketing it make it ideal to use in projects.

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SELF-MANAGED PROJECTS

SELF-MANAGED PROJECTS looks at professional situations in which a designer has a managing role, not only in the ideation phase but also in managing the manufacturing, distribution and sale of their designs.

This workshop stands out from the rest for its role in encouraging the business side of future designers. In this course students will start by researching and analyzing both the market and the issues posed by a product or sector, and then from these results, devise a creative solution to the problems and/or deficiencies. Economic viability (market demand, production viability, marketing strategies) play a key role in this workshop.

There are increasingly more and more designers who choose to produce their own designs and sell them directly to the final user, thereby becoming the managers of the entire process which involves manufacturing and selling the product in question. Self-managed projects reflect situations when a designer is starting out in the profession and still doesn't secure enough work to run a studio, or when a designer has an established product design consultancy and designs, promotes, coordinates, produces and launches their products onto the market, making their company a design creation company.

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SCALE-MODEL WORKSHOP

The Scale-Model Workshop responds to the need for students to work with a real, 3D language from the start of the project process, helping them to perceive it as a design tool and part of a process in which the designed volume and space can be analyzed and studied. It always goes hand in hand with other types of languages, making it possible to verify and check the design and what it communicates. The aim of the course is to enhance students' spatial awareness by working in three dimensions and develop suitable criteria when choosing procedures and materials that will impregnate projects with a greater communication capacity.

PRODUCT DESIGN MANAGEMENT

This subject analyses the role of design in industry and its importance when creating added value for a company.

Companies are becoming increasingly aware of the value of design as a means of attaining their strategic and corporate goals. Within the field of design management there are multiple outlooks, from the aspect of organising processes to develop new products and services, to the view of providing solutions for companies' needs and the effective use of design.

With this in mind, and over the five teaching units that comprise the syllabus of this subject, students learn the importance of design management as a decisive area when taking a strategic approach to product design.

PROJECT PRESENTATION AND COMMUNICATION WORKSHOP

In all design work there is a highly important task in each phase of the project that makes it all possible, which is the presentation and communication of the product both to the client and at times, to the general public.

As well as becoming a designer, students need to become skilful speakers who are able to convey ideas, motivate and interact with counter parties.

It is precisely these graphic media, whether verbal or non-verbal, that designers use to communicate, convey, motivate and interact that this subject deals with.

DIGITAL TECHNOLOGY APPLIED TO PRODUCT DESIGN

Digital Technology applied to Product Design is a specific, obligatory subject in digital technology. In this course, students will gain a deeper insight into the basic procedures used in computer-based drawing, modelling and design and in the creation of prototypes. The use of these programmes is promoted as a technique to be applied both in the creative and production processes, and as a tool for communication and management.

Using various professional programes is essential to be able to carry out and interpret projects and to go about presenting them in a contemporary way. In this sense, this subject rounds of training for these future professionals.