MASTER'S DEGREE IN PRODUCT DESIGN AND DEVELOPMENT

Start date: September and February  
ECTS Credits: 60  
Language: Spanish  
Qualification: Master's Degree in Product Design and Development degree awarded by Pompeu Fabra University (UPF) and ELISAVA School of Design and Engineering of Barcelona.  
Schedule: Monday, Tuesday and Wednesday, from 5pm to 9.15pm  

The qualification of Master's Degree in Product Design and Development is obtained by studying:

- **POSTGRADUATE DIPLOMA IN PRODUCT CONCEPT**  
  From September to February.

- **POSTGRADUATE DIPLOMA IN PRODUCT DEVELOPMENT**  
  From February to July.

Course leader

**JOSEP PUIG**  
Industrial designer. Tutor of the Degree in Design at ELISAVA. Responsible for the industrial design studio PUIG\[i\]CABEZA Design.

**XAVIER RIUDOR**  
Industrial engineer, mechanical speciality. Director of the Science and Technology Department at ELISAVA. Lecturer of the Degree in Engineering in Industrial Design at ELISAVA.

Coordination of the Postgraduate Diploma in Product Development

**MARTA JANERAS**  
Graduate in Physics, and a Master's Degree in Numerical Methods in Engineering. Lecturer at the Degree in Engineering in Industrial Design at ELISAVA.

Aimet at

- Graduate in Design.  
- University graduate in the fields of Engineering, Technology, Production or Design.  
- Architect.  
- University lecturer in the fields of Engineering, Technology, Production or Design.  
- Professional with experience in this field.

Net


Presentation

The Master's Degree in Product Design covers everything from initial concept to the development of the final product, through the various stages of design and engineering development.

The Postgraduate Diploma in Product Conceptualisation focuses on enhancing the initial phase of the design project with methods and resources conducive to generating innovative concepts.

The Postgraduate Diploma in Product Development focuses on providing a solid understanding of the latest manufacturing technologies offered by the industry and the various materials available in the market, to develop the product in the most simple, effective and cost-effective manner.

The master's degree is designed for professionals and graduate students from various sectors who wish to specialise and update their knowledge. It is especially geared toward professionals in the design and product development engineering fields. Most professionals who teach in this master's degree come from these areas.

One of the keys to the success of the Master's Degree in Product Design is the relationship with partner companies. The briefings in proposed projects are continuously monitored by partner companies. Field trips to technology centres and companies allow students to come in direct contact with the current professional reality. Some of the companies which handle their own design and production and have worked with the programme since the beginning or currently do so are: Play, Hewlett Packard, Cosmic, Roca Sanitario, Santa&Cole, Simon, Figueras, Valira, Lamp Lighting, Educa Borras, Laken and El Naturalista.

Course aims

This programme's main objectives are to:

- Provide resources to facilitate the development of new concepts for innovative products.  
- Know the current state of the product design field and its future outlook.  
- Relate project activity to the discussion and analysis of social and cultural aspects of contemporary manufacturing.  
- Provide solid know-how on the latest technologies in the industry and the different materials available on the market to develop a product in the most simple, effective and economic manner possible.  
- Be aware of the technical viability and the production costs of a project so as to make the best decisions during development.  
- Study and assess the specific decisions taken in a product development project by presenting and discussing real projects implemented by companies.  
- Learn to use various CAD (Computer Aided Design) / CAE (Computer Aided Engineering) tools which make it possible to define and analyse the product correctly, and exchange information easily and dynamically.
Postgraduate Diploma in Product Concept

Start date: September
ECTS Credits: 30
Language: Spanish
Qualification: Postgraduate Diploma in Product Concept, degree awarded by Pompeu Fabra University (UPF) and ELISAVA School of Design and Engineering of Barcelona.
Schedule: Monday, Tuesday and Wednesday, from 5pm to 9.15pm

Syllabus

The structure of the Postgraduate Diploma in Conceptualisation is based on the following modules:

DESIGN CONCEPTS MODULE
The up-to-date subjects presented are essential in project culture and connected with the social, economic and cultural context. These subjects can stand alone, but they can also be connected with the projects implemented throughout the course.

Subjects:
• Design focused in the user.
  In this subject the fundamental concepts and techniques of user design will be introduced and the design of systems, products and services will be addressed as well.
• Contexts and concepts.
  Gain familiarity with tools for user research and experience design in a practical way.
  Use the prototyping as a tool for starting the conceptualization concept.
  Develop strategies of narrative communication for supporting concepts.

REPRESENTATION RESOURCES MODULE
Practical look at the representation and communication resources currently used in the professional sector of product design. It also includes a chapter on project management techniques for work models. The presentation of the various subjects will be eminently informative about the current situation, and under no circumstances will it constitute a practical course on them.

Subjects:
• Digital expression.
  To optimize the capacity to communicate any creative idea through representation systems understandable by the professional interlocutors, exploiting the possibilities of the 3D world. To present which are the needs and the computer resources used in the field of product design in our context
• Models verification.
  To give sense to the working model as an element in the design process. To consider the possibility to make fast verifications through models and prototypes made of simple materials.
• Sketching.
  To provide the basic tools for creating and representing concepts and projects through freehand drawing.

PROJECT MODULE
Agreement and the convergence of interests are sought with companies representing the current management and production model in a globalised context, companies which decide and design in Spain, and which manufacture totally or partially in emergent economies. The objective consists of conducting research projects in the field of design based on collaboration agreements that are of interest to the three parties: students, school and company. Each of these projects is supported by school tutors who manage their implementation and who are responsible for the company’s representative projects. Agreements signed with PLAY, HEWLETT PACKARD, COSMIC, ROCA SANITARIO, LAMP Lighting, VALIRA, EDUCA-BORRÁS, LAKEN, EL NATURALISTA, ZOBELE, TECH-ROCK, ESPORTIVA AKSA and PANDO.

Subjects:
• Strategy project 1. A subject and a company. In opposition to the classical project in product design that follows a lineal journey from the order of the company, this subject encourages a new profile of designer who has initiative for generating innovative proposals and proposing strategies for interesting companies.
• Strategy project 2. A subject and a company. Innovation through design, very interactive sessions that encourage the collaboration between participants, generating very interesting dynamics and new ways of understanding and facing challenges. This subject wants to encourage the creation of concepts and strategies that will be provided when working in real projects in collaboration with renowned firms.

ORGANIZATION AND MANAGEMENT MODULE
Introduce the students to the skills of communication, projects management, design company strategy, register and protections. Learning aims: to know the fundamentals of management. Ability for calculating honoraries and budgets, monitoring the project development, improving the skills for communicating the proposals.

Subjects:
• Design Management. This subject is a practical map for introducing the necessary elements for understanding and adopting the role of Design Manager.
  The addressed topics will be the relation with clients, hiring projects, the role of the design manager, the service sector, etc...
• Protection of design. To increase awareness of the current situation of the protection and register of industrial design within the framework of the European Union and as a result of the globalization and the ICT.
• Verbal presentation. In the current context, in which image has an increasing power, “orality” is a means for creating images, with the words and the gestures. We need the direct contact, the presence, the confidence beyond words. We will find the perfect combination of technology, strategy, the message, emotion, the word and the gesture for captivating professionally.
Postgraduate Diploma in Product Development

Start date: February
ECTS Credits: 30
Language: Spanish
Qualification: Postgraduate Diploma in Product Development, degree awarded by Pompeu Fabra University (UPF) and ELISAVA School of Design and Engineering of Barcelona.
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Syllabus

This programme provides the necessary tools and technical knowledge for carrying out in a decisive and efficient way a product engineering project. It is necessary to know the current CAD and CAE technologies, the method for selecting the most adequate materials, the different existing fabrication processes and the possible mechanisms for assembling the pieces of a product. In this way and from the requirements of the project briefing, a technological viable project will be successfully carried out.

A global approach of all the process is essential for taking the best decisions in each one of the stages of the process for developing a new product.

The structure of the Postgraduate Diploma in Conceptualisation is based on the following modules:

**Modul 1: Tecnologies CAD / CAE**
In this module the students will learn to model any 3D product using CAD tools and to apply boundary conditions to a particular piece ant to the whole for analyzing its structural and thermal behaviour. In this way, the redesign and optimization of the product will be carried out with technical justifications. The presentation of the product through renders, a video of the assembly and a video of the mechanisms will be keys to the success of the project.

1.1.- CAD: DESIGN OF SOLIDS, ASSEMBLIES AND MECHANISMS
- Creation of 3D solids.
- Creation of assemblies. Restrictions in the assembly of parts.
- Strategies for the design of complex parts and assemblies.
- Cinematic simulation and mechanisms dynamic.
- Mechanism description and selection criteria.
- Render of images and videos
- Creation of an animation sequence of a product assembly.

1.2.- CAE: STRUCTURAL AND THERMAL STIMULATION
- Structural assembly simulation. Analysis and interpretation of results.
- Introduction to the finite elements: mesh and convergence.
- Materials mechanics characteristics. Material fail criteria.
- Idealisations: shells, beams.
- Advanced simulations: toughness and compound materials analysis.
- Redesign of the parts: Optimisation.
- Thermal simulation.

**Modul 2: Materials and Fabrication Processes**
In this module, we will learn to analyse and select the different kinds of materials that exist in the market, taking into account their mechanical, thermal, electric, optic characteristics. We will address the current application of technical ceramics, metals, compounded materials, polymers, active and intelligent materials.

We will explain with a practical approach the fabrication aspects that provide a piece of plastic or metal in an ideal way, according to the transformation process. Knowing the dimensional tolerance and the union systems will be key factors for a good design of the final product.

2.1.- MATERIALS SELECTION
- Classification and properties of the materials
- Consultation databases
- Tools for selecting materials
- Recyclability of the materials. Sustainable materials.
- Criteria for selecting materials according to the design function and functionality.
- Applications of intelligent materials.

2.2.- TRANSFORMATION AND DESIGN OF PLASTIC AND METAL PIECES
- Characteristics of the different transformation processes.
- Characteristics of the process versus characteristics of the pieces.
- Basic characteristics of the plastic pieces design.
- Most common faults in plastic pieces and how to avoid them
- Union systems between pieces.
- Selection of fabrication technologies.
- Trends of the production advanced technologies.
- Fast obtaining of prototypes: Rapid Prototyping.
- Additive manufacturing.

**Modul 3: Companies Projects**
One of the key points of the Postgraduate Diploma in Product Development is the relationship with the companies which collaborate in the programme. The briefs of the projects proposed are supervised weekly by the collaborating companies. The various postgraduate professionals also collaborate by tutoring the parts of the Final Projects they are experts in.

Another main aspect is that the student work groups consist of designers and engineers. This factor helps students to gain the experience of working in a group, and it enables the professionals taking part in the product design and development phases to exchange know-how effectively. This methodology leads to top quality product development projects, proved by the interest shown by the companies collaborating in the postgraduate programme’s final projects. The programme has had agreements with SIMON, FIGUERAS, SANTA&COLE and PLAY.

- Presentation of companies and presentation of the project briefing.
- Analysis of the different needs of the company and the market.
- Market study. Against briefing.
- Stages of product development and technical requirements. Tutorship.
- Study and selection of technical solutions.
- Presentation of the project in the company.

**Modul 4: Workshops and Visits to Companies**
Knowledge of the various manufacture technologies, onsite visits to the various companies, foundations, and technology centres which collaborate in the master’s degree framework. These visits enable students to discover first-hand the current professional situation.

Visits to: PLAY, LAMP, Fundació CIM, ASCAMM Technological Centre, MATER, etc.
Lecturers of the Postgraduate Diploma in Product Concept

TERESA BARÓ. Graduated in Philology. Master's Degree in protocol. Specialist in personal communication.

MARIÀ CAPELLA. Solicitor specialising in intellectual property.

NÚRIA COLL. Industrial Designer. Teacher of Industrial Design Projects and Materials Technology in ELISAVA.

BERNAT CUNÍ. Industrial designer specialising in 3D Printing Design. His studio, Cunicode, focuses on digital production. He has over 10 years’ experience in Design Research, Eco-Design and Design and Design Entrepreneurship. Manager of the incubator at the Hong Kong Polytechnic University.

ARIEL GUERENZVAIG. Interaction designer. Lecturer at ELISAVA.

RAIMON MONSARRO. Industrial designer. Collaborator in Lievore Altherr Molina.

MARC MORROS. Associate Director Product Experiences. SMART DESIGN

JOSEP PUIG. Industrial Designer. Director of Puig[i]Cabeza Design

DIEGO QUIROGA. Industrial designer. Founder of the studio ANIMA.

ISAAC SALOM. Industrial designer. Digital 3D Laboratory tutor at ELISAVA.

CRISTINA TAVERNER. Industrial designer, ELISAVA-UPF, Carnegie Mellon University (USA) and Winchester School of Art, Southampton. Master's Degree in Product Development and Management, ETSEIB (School of Industrial Engineering of Barcelona) of the UPC.

Professional lecturers of the Postgraduate Diploma in Product Concept


Lecturers of the Postgraduate Diploma in Product Development

QUIM ALCÀNTARA. Degree in Industrial Design (ELISAVA). Product and Design Director (Partner) of the companies TECHNOBOT and I-MAS.


CLAUDIA CARRASCO. Architect, Master's Degree in Industrial Design. Architects & Designers Relations Manager Iberia at DuPont™ - Building Innovations.

BERNAT FAURA. Technical Engineer in Industrial Design (ELISAVA). Materials engineer (UAB). Product Manager at the I+D Department of VILAGRASA.

SALVA FÀBREGAS. Bachelor of Arts in Design top up (Winchester School of Art, Southampton University), Degree in Industrial Design and Degree in Mechanics. Responsible of the expression area and graphic representation in the ELISAVA Degree in Design.

FELIP FENOLLOSA. Industrial Engineer. Master's Degree in Computer Integrated Manufacturing and Engineering. Assistant Director of the CIM Foundation. Lecturer at the Polytechnic University of Catalonia.

XAVIER FERNÁNDEZ. Technical Engineer in Industrial Design (ELISAVA). Postgraduate in Expression and Representation systems (UPC). Technical Director of LAMP Lighting.

RAMON OLIVER. Chemist Technical Engineer. Master's Degree in Design and Plastic Components Development. Technical assessor and plastic formation as a “free-lance” for companies of the area.

JAVIER PEÑA. PhD in Sciences (specialising in materials). Science director and exhibition organiser of MATER (Centre for Materials of FAD). Head of the ELISAVA Bachelor's Degree in Engineering in Industrial Design.

RAFFAElla PERRUONE. PhD in architecture (UPC). Lecturer at ELISAVA. Responsible of ELISAVA projects area. Editor of the magazine ELISAVA Temes de Disseny.

RUBÉN SALDAÑA. Engineering technician in Industrial Design from ELISAVA. Product Director of ARKOSLIGHT.


Professional lecturers of the Postgraduate Diploma in Product Development

Salvi Plaja, SIMONTECH. Ismael Almazan, IRIS R&D. Ferran Macías, FAURECIA. Anja Querol, T-SYSTEMS. Francesc Mestres, T-SYSTEMS. Xavi Solé, AMAT. Claudia Rieradevall, SANTA&COLE.
ELISAVA - Master's Degree in Product Design and Development

Bold category members of Elisava Alumni Association enjoy a 15% reduction.

The teaching staff is likely to change according to reasons beyond the course programme. ELISAVA reserves the right to make changes in programming as well as the right to suspend the course two weeks before it starts if not reached the minimum number of participants, without further obligation of the amounts paid by each participant.

Master’s and Postgraduate Degree programmes schedules can be expanded according to the selected course activities (weekends included).

MASTER’S DEGREE
Product Design
Furniture Design

POSTGRADUATE DIPLOMA
Alternative Jewellery Design
Digital Modelling or Automotive Industry and Product
Product Conceptualisation
Product Development
Furniture Design for Communities, Contract and Urban
Furniture Design for the Habitat

EXPERT COURSE
Product Design for the Kitchen and the Table