



# Master in Design Through New Materials

ELISAVA

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## MASTER IN DESIGN THROUGH NEW MATERIALS

**Start date**  
September

**ECTS Credits**  
60

**Language**  
English

**Qualification**  
M<sub>i</sub>Master's Degree in Design through New Materials, degree awarded by Pompeu Fabra University (UPF).

**Schedule**  
Tuesdays, Thursdays and Fridays, from 5 pm to 9.15 pm.

**Where**  
The Master is carried out at Elisava and Materfad (Barcelona Design Hub) facilities.

**Field trip**  
One Materials Exploration field trip to a European city is carried out during the Master. Travel and location expenses are not included in the enrollment fees.

## Direction

### LAURA CLÈRIES

Laura has both creative and scientific backgrounds: she obtained her BA in Physical Chemistry and her PhD in Materials Science from the University of Barcelona and then pursued degree studies in Industrial Design. Laura has worked internationally as designer in main design companies (Zara Home) and design studios, and as researcher for main forecasting publications and think tanks (Pantone Colour Planner, WGSN).

As materials innovation consultant, she has worked for Eurecat electronic textiles division, for the architects of Jean Paul Gaultier's headquarters, and she has curated exhibitions related to materials innovation and forecasting (Materfad — extile area— and 'Materiality').

Her present research work focuses on futures research methodologies, as well as in materials innovation. She is currently professor at Elisava School of Design and Engineering and Head of Elisava Research.

## Aimed at

- Professionals from the design sphere: product design, industrial design, automotive design, textile design, activewear.
- Engineers and architects.
- Marketing and forecasting professionals in search for specialization in their sector.
- Professionals and entrepreneurs who want to seize the opportunity to innovate through materials.

## Presentation

Could materials define the way our future is built? Understanding new materials in order to create new opportunities.

Everything around us are materials. Materials are now at the core of innovation, generating impact not only in industry, but on society and even cultural values. Materials are no longer defined at the end of the design process, but are part of the early design development. Moreover, consumers pay more attention to the materials they surround themselves with, they are far more literate and interested in materials innovation than before. Materials-driven innovation allows for new industries being developed, more sustainable solutions found, and more creative design processes put into place.

In this context, the Master in Design through New Materials aims to generate a new breed of 'materials design specialists' in transdisciplinary fields, providing a working knowledge and active mastery of new materials as agents in innovation.

It joins rigorous and applied university knowledge in design through materials (Elisava) with industrial materials innovation (Materfad, materials innovation hub and library), and it is held in Barcelona, home of social and technological innovation. With an international spirit, the programme includes one European Materials Exploration field trip at a selected city, up-to-date insights from relevant international materials-driven design experts, and a network of leading materials-related innovation hubs and industries.

The contents and methodology of the course allow to experience both theory of materials and hands-on workshops; to envision innovation from research to industry, from speculative to applied projects, and to adopt a scientific, creative and multidisciplinary attitude on the field. The professional orientation of the master allows textile designers, product designers, engineers, architects or interior designers to produce a Final Master Project —on an entrepreneurial basis or for an industrial partner— that results in a new material, a new product collection, or a new architectural project with focus on materials, sustainability, innovation, creativity and near-future inspired solutions.

## Course aims

This Master's course aims:

- To generate a new breed of 'materials design specialist' professionals in transdisciplinary fields.
- To train professionals on new creative ways of making and communicating.
- To prepare professionals for the new opportunities arising from the consolidation of materials and related technologies as innovation boosters.
- To train professionals in the development of projects with social, environmental and technological concerns.

## Rationale behind

The evolution of mankind has been intimately tied to the development in materials: from concrete and the newly built skyscrapers transforming the face and social life of cities, to plastics and synthetic colours allowing for the birth of pop culture.

Material-wise we are currently at a turning point in history. The growing dichotomy between an explosive potential in materials and technological advancements pushing incremental and disruptive innovations on the one hand, and a compression of natural resources and its consequential growing environmental concerns on the other hand, calls for new paradigm in both sustainable solutions and mindset. Spanning across every sector, from high to low-tech, from 3D print automation to biologically grown, from the optimal use of virgin resources to redefining the beauty and qualities of waste, the emphasis of a smarter material-based reality takes its root.

The disciplines of Design and Engineering are fusing with the development of materials as a core focus and common denominator of its intent. Product innovation is intimately dependant on equal developments in materials and their processes, be it experimental or by direct application, spanning across all alignments in methodologies of production, philosophy and communication of brand eventually rippling into market placement and communication strategies, through aesthetically appealing products which are in-line and vertically integrated into the practices of the whole.

Material selection thus becomes a driving catalyst and epicenter in the innovation wave - a front-end claimstake upon which all other differentiations, including brand aesthetics, business models, sourcing and craft to industry processes are rooted in the effort of creating new circular economies of scope and scale.

From a consumer's perspective, materials are languages of communication, where form, colour and texture of products merge with sensorial appeal, and philosophical beliefs, providing both a tangible and intangible experience.

The world of materials has multidisciplinary character, involving transversal knowledge and practices, transcending geography and fusing the technological with the creative and the historical through interaction.

The future of industry will thrive and be heavily dependent on materials - skilled professionals, defined by those who understand the importance of materials - driven innovation and design.

## Admission requirements

- Applicants: BA degree in design, engineering, architecture, arts or related fields.
- Documents: Academic and professional CV + Portfolio/Projects + Motivation letter.
- Selection: Based on background, professional motivation and personal commitment criteria

## Competences

The master course is structured for students to acquire, develop and exercise and specific abilities and competences, which cumulatively encompass the necessary skill-set to design, develop, optimize and efficiently communicate a project in terms of both materials-driven innovation, process based production and design solutions.

At the end of the course, the student will:

- Be able to analyse future socio-cultural scenarios and contextualise new materials in a global context.
- Be able to select and apply materials, technologies and manufacturing processes in design and the specific nature of the development processes.
- Acquire the skills for the ideation of applications of new materials.
- Be able to evaluate sustainability aspects and environmental impact of materials for industry application.
- Be able to experiment with new materials and related technologies in order to produce new material applications, new material developments or new material languages.
- Be able to generate families of colour and trim as well as materials languages applied to brand and market placement.
- Be able to generate a sound narrative and strategy in order to successfully position a material within the market or sector.
- Be able to recognize the potential of new business models associated to the materials and related technologies being generated.

# Syllabus

## MODULE 1

### MATERIALS IN CONTEXT, MATERIAL NARRATIVES - CULTURE AND FORECASTING (4.5 ECTS, 30h)

The cultural and social aspects of materials. Market trends. Futures-research methodologies and building future scenarios and narratives.

## MODULE 2

### MATERIALS FOUNDATIONS - SCIENCE AND TECHNOLOGY (4.5 ECTS, 30h)

Materials families. Metals, ceramics and beyond: towards a new ontology of materials. Scientific and creative views on physical properties. Materials processing.

## MODULE 3

### MATERIALS IN USE - MATERIALS IN ACTION, MATERIALS AS FORM (4.5 ECTS, 30h)

Materials selection. Understanding applications of materials in different sectors, from automotive to health.

## MODULE 4

### MATERIALS INNOVATION - RESEARCH AND FUTURES (10.5 ECTS, 70h)

Current views on materials innovations. Materials research and materials development trends. From advanced high tech materials and nanotechnology to bio-based low-tech materials.

## MODULE 5

### MATERIALS EXPERIMENTATION - EXPERIMENTING AND DEVELOPING AND DIY (3 ECTS, 20h)

A series of workshops on materials making. From craft to industry.

## MODULE 6

### MATERIALS INDUSTRY AND SUSTAINABILITY - THE FUTURE OF FABRICATION (6 ECTS, 40h)

Production in the 21st century. Sustainability – from life cycle to new business models.

## MODULE 7

### MATERIALS LANGUAGES, MATERIALS INTERACTION - MATERIALS AS FORM, SURFACE AND EMOTION (6 ECTS, 40h)

Colour, materials and finish design. Materials aesthetics trends. Languages and narratives, visual storytelling, styling, media.

Emotionality of materials. Sensory qualities. Tangible and intangible properties.

## MODULE 8

### MATERIALS STRATEGIES - COMMUNICATION AND MARKET PLACEMENT (3 ECTS, 20h)

Market placement; strategy, patent, IP, business models.

### Final Master Project (18 ECTS, 120h)

The final master project is developed by devoting weekly sessions with tutors and runs in parallel to course modules. Research begins in Module 1. The value proposition is made by Module 4, followed by development, evaluation, communication and the development of a portfolio.

The project will consist on developing a materials-derived product and/or strategy with focus on innovation and sustainability. The Project can be orientated and/or done in collaboration with an industrial partner.

Recommended project focus:

- Automotive - Transportation
- Circular economies - Cradle to cradle
- City - Building
- Health - Well-being
- Home - Workspace
- Accessories - Activewear
- Packaging

## Characteristics

Academic Structure:

- Mandatory subjects 34.5 ECTS credits
- Others (invited lecturers, visits) 3 ECTS credits
- Non academic traineeships - none
- Final Master Project 22.5 ECTS credits
- TOTAL: 60 ECTS credits

This master will have at least one field trip involving an innovation workshop.

## Methodology & structure

The course is structured in two layers that run parallel and 30 % nurture each other:

A - The eight Modules, run by Materfad-Elisava Lecturers and Guest Lecturers, provide the necessary theoretical and practical knowledge through lectures & debates, hands-on workshops, materials discovery capsules, Design Tools sessions and guest lecturers' sessions.

Lectures are normally followed by seminars and discussion group sessions/ debates and QandA for subject acquisition.

Hands-on workshops. Brief workshops (8h), medium (12h) or long workshops (20h). The workshops are experimental, hands on and promote the creative development of the projects focusing on the subject-matter of the specific module.

Materials Discovery capsules: exploration of innovative materials through in-situ sessions at Materfad.

Guest lecturers' sessions and possible workshops. Students share their experiences with multi-sectoral professionals related to the contents of the module.

Different spaces. Elisava: classrooms, laboratories (Materials science, prototyping, media), and Materfad (at DHUB).

Design tools sessions: capsule sessions for the acquisition of competences such as materials characterization, Art Direction or storytelling.

B - the Final Master project, where the modules' knowledge is constantly applied. The project is co-supervised by the internal Materfad-Elisava lecturers and the external Project Tutors, professionals and specialists in their sector (product, packaging, automotive, fashion, accessories, architecture, interiors). It is developed by devoting sessions with tutors (monthly, biweekly or weekly, depending on the stage of the project) and runs in parallel to the course modules. Research begins in module 1. The value proposition (project focus) is made by module 4. Subsequent development,

evaluation, communication and portfolio development. The project will be related to developing a materials-derived product and/or strategy with focus on innovation and sustainability. The Project can be oriented and/or done in collaboration with an industrial partner. Criteria for the project validation are:

- Degree of innovation.
- Potential of feasibility.
- Potential for personal and professional development.

Visits to or from some Technological Centres, Innovation Hubs or Companies will be conducted during modules and phases of the projectual development.

Active mentoring of the student during the duration of the master, in order to optimize his/her personal evolution and professional interests.

## Evaluation system

80 % assistance is required for being evaluated.

Both long workshops and the Final Master Project are evaluated and will account for 30 % and 70 % of the total mark respectively. Workshop course tutors will be responsible for the assessment and evaluations. Evaluation of the Master Project will be evaluated by a project committee panel.

## Career opportunities

Graduates from this programme will have the expertise to work in transdisciplinary environments including marketing, innovation, development and management departments of automotive, activewear, product, home, health, architecture, packaging, manufacturing industry.

This master will add value to your professional profile and boost your career.

\*Reference Materials design specialist, job of the future, by FastcoDesign.

## Lecturers

Elisava Core Lecturers and Mentors:

### DR. LAURA CLÈRIES

Materials Innovation Consultant and Designer. Lecturing professor and Head of Elisava Research.

### DR. MARTA GONZÁLEZ

Materials Science Engineer and Materials Consultant. Materials and sustainability area coordinator at Elisava.

### SAÚL BAEZA

Product and Fashion Designer with focus on new materials. Founder of DOES-WORK.

### PERE LLORACH

Responsible for the Sustainability area of the Degree in Industrial Design Engineering.

### ROBERT THOMPSON

Responsible for the training activities at Materfad-Elisava and lecturing professor at Elisava.

Some of the Guest Lecturers and/or Project Tutors:

### SEETAL SOLANKI

Founder of Ma-tt-er.

### CAROL RIUS AND HELOISE BUCKLAND

HUSK Ventures

### ISABEL MESA

Spain representative for WGSN.com

### RUTH JONSARA

Director of the Healthy Materials Lab at Parsons School of Design.

### RASMUS MALBERT

Founder of Materialist; and senior lecturer at University of Gothenburg.

### SARA GONZÁLEZ “DE UBIETA”

Architect and shoe designer. Expert in materials as form.

### CARLOS SÁEZ

Materials engineer consultant and researcher. Founder of BioMimetics Iberia. ASCAMM TECHCENTER.

### ANASTASIA PISTOFIDOU

Co-founder of Materiom.

### DR. MARIA BOTO

Microbiologist. Leader of the color biolab university college ghent.

### VALENTINA ROGNOLI

PhD and Head of Materials Experience lab @Politecnico di Milano.

### CRISTINA NOGUER

Materials Researcher, Designer and Innovation Manager, PUIG.

### RITA BARATA

Director of Friendly Materials ©

### CARMEN HINOJOSA

Founder of PIÑATEX

### CLARA GUASCH

Sustainability expert for IKEA.

## MORE INFORMATION

→ [elisava.net](http://elisava.net)

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).