5/6S_ON_Experimental workshop with our materials

Qualification: Degree in Higher Artistic Education in Design in the specialties of graphic design, interior design, fashion design and product design.

Subject: Workshop on applications, techniques and resources

Type: Optional

Credits:3 ECTS
Course:3
Semester: 5/6
Language in which it is taught: Catalan / Spanish
Prerequisites:

Total hours: 75 h
Hours/week:4,7 h
Face-to-face hours/week: 2 h
Self-employed hours/week: 2,7 h

1. Presentation of the subject

The concepts of materials and technology are closely interrelated, in a feedback dynamic that drives both technological innovation and the development of new materials. The study of design projects focused on emerging materials offers the student a training with a global and interdisciplinary vision, and enables the designer to analyze, research and develop solutions from a critical and innovative perspective.

Historically, materials have determined the great stages of human progress —as demonstrated by denominations such as the Stone Age, the Bronze Age or the Iron Age— as well as the industrial revolutions, each marked by the emergence of new transformative materials. Currently, these materials find application in a wide variety of sectors: transport, medicine, energy, habitat, fashion, visual arts, sports and leisure, among others.

In the current context of climate emergency and ecological transition, sustainable materials acquire special relevance: recycled, biodegradable, of biological origin or obtained from waste. These materials are key to moving towards a circular economy, minimizing environmental impact, reducing waste generation and improving energy efficiency. In this changing scenario, innovation in materials is consolidated as a strategic factor to face the present and future challenges of design.

The optional subject offers an introduction to the material systems and techniques that shape contemporary design, with special attention to emerging materials that will influence our habitat and quality of life in the coming years. The teaching approach promotes collaborative and self-managed work, with the aim of:

- Introduce students to the field of materials design from a cross-disciplinary perspective
- Encourage creative experimentation in conceptualization and communication processes

- Detect opportunities derived from the interaction between materials and technology
- Develop projects with social sensitivity, environmental responsibility and technological vision.

2. Course contents

- Criteria for defining and classifying new materials and new techniques.
- New current materials (techniques or systems), in different phases of research-production.
- Applications of new materials, techniques or systems within the field of specialty.
- Definition and structuring of a project for the application of new materials and new techniques.
- Presentation and communication of experimental projects in the context of contemporary design

3. Skills worked on in the subject(Real Decret 633/2010)

Transversal skills		**Subject**	**Subject**
CT-01	Organize and plan work in an efficient and motivating way.	x	x
CT-03	Solve problems and make decisions that meet the objectives of the work being carried out.	x	x
CT-16	Use the means and resources at your disposal responsibly towards cultural and environmental heritage.	x	x

Specific Graphic Design skills		**Subject**	**Subject**
GRA-02	Master the formal resources of expression and visual communication.	x	x

Specific Interior Design skills		**Subject**	**Subject**
INT-07	Know the characteristics, physical and chemical properties and behavior of the materials used in interior design	x	x
INT-08	Learn about the most common manufacturing, production and manufacturing processes in the different sectors linked to interior design.	x	x

Specific Fashion Design skills		**Subject**	**Subject**
MOD-03	Learn about the characteristics, properties and behavior of materials used in the different areas of fashion design.	x	x

Specific Product Design Skills		**Subject**	**Subject**
PRO-07	Know the characteristics, physical and chemical properties and behavior of the materials used in the design of products, services and systems	x	x

4. Subject learning outcomes

RA	Description of the learning outcome	Skills
RA-01	Identify and use tools and materials.	CT-01, CT-03
RA-02	Organize the workspace to do experimental design projects	CT-01, CT-03
RA-03	Interprets and evaluates possibilities and techniques to promote subsequent ideation processes.	CG-04
RA-04	Apply and place traditional or current techniques and resources in the design process, connect and assess the possibility of integrating them into design processes.	INT-08, MOD-03, PRO-06, PRO-07
RA-05	Communicate research in experimental design projects.	GRA-02
RA-06	Work autonomously and value the importance of initiative and entrepreneurial spirit in professional practice. Organize yourself in work groups and integrate individual work into the whole.	CT-01, CT-03

5. Teaching methodologies applied to the subject

Code	Typology	Description	Apply
MD1	Conference and/or master class	The teacher presents and transmits knowledge to the entire group of students, the student has a passive role, that of a receiver.	x
MD2	Debate and/or discussion	The teacher encourages and moderates debates and/or discussions that promote reflection, critical thinking and active participation of students in the classroom.	x
MD5	Workshops and/or internships	Carrying out practical activities applied in a controlled environment, oriented towards learning through experience and/or the transfer of theoretical knowledge to real or simulated situations.	x
MD7	Case study	Analysis of situations or problems within the specialty with the aim of reflecting, analyzing and discussing different intervention or solution proposals through examples or references.	x
MD8	Project work	Project or problem based on the real or professional world that needs to be solved independently or in a group.	x
MD9	Guided practice	The teacher presents and transmits theoretical knowledge applied to practical activities that take place in the classroom. The teacher guides, supervises and gives active feedback during the practice.	x
MD11	Collaborative work	Joint construction of knowledge through interaction and collaboration between students. The teacher has a guiding and dynamizing role.	x

6. Training activities of the subject

Code	Description	Duration	Weighting
AF1	Experiments	5-8 weeks	20-30%
AF2	Material application	5-8 weeks	20-50%

AF3	Communicate; Fanzine /*Cookbook*/ Exhibition	2-3 weeks	20-30%

7. Evaluation systems

Due to their typology and educational program, all subjects in the ESDAPC undergraduate design studies include continuous assessment as a procedure to regulate and qualify the learning achieved by students during the semester.

In the event of not achieving the level of sufficiency in the evaluation activities within the closing milestones set out in the subject's schedule, the activities not passed may be corrected and/or completed within the recovery procedure defined by the teaching staff in their schedule.

7.1. Continuous evaluation

General evaluation criteria

The ESDAPC sets some **general evaluation criteria** which are common to all teaching guides, without prejudice t the specific evaluation and grading criteria of each subject:

- Subject grading: A weighted average of the grades obtained in each of the training activities will be made in accordance with the percentages described in the teaching guide and classroom schedule. The subject will be passed with a grade of 5.0 (Pass). All assessment activities can be corrected and/or completed within the recovery procedure within the continuous assessment that the teaching staff defines in their classroom schedule.
- Class attendance is essential in order to guarantee that learning is progressive, flexible and allows feedback and adjustments in its achievement within the continuous assessment. For this reason, class attendance is mandatory. The teaching staff establishes the mechanisms to control it. The student who does not attend a minimum of 80% of the face-to-face hours of the subject loses the right to continuous assessment.and may present for remediation outside of the continuous assessment defined in the teaching guide and classroom schedule for the subject.In cases of serious absenteeism, with attendance of less than 60% of the face-to-face hours of the subject, the student will lose the right to be evaluated and will have a grade of "Not Presented".
- The ability to organize and plan tasks is part of the learning outcomes that the student must achieve within the training process, therefore the deliverables of the evaluation activities must conform to the deadlines, the format and contents defined in the activity statement in order to be qualified. Activities submitted after the deadline, format and/or minimum content will be considered outside the continuous assessment process, will not be evaluated within it and will have to be resubmitted as a recovery.
- In the event of a submission or exam coinciding with a force majeure situation, the student may request to submit an activity after the deadline or repeat an exam, without being considered out

of continuous assessment. This submission or exam will be carried out according to the conditions and calendar determined by the teaching staff.

    - Force majeure is understood to mean: serious illness or temporary incapacity (hospitalization) of the student or a first-degree relative, coincidence with an official language level or driving license exam, inexcusable duties before the administration or death of a first- or second-degree relative. It must be requested in an argumented and justified manner in the form of generic application, addressed to the campus management, and must necessarily include the original with a stamp of the document proving the major cause alleged.

- The evaluation process is based on the student's personal work and presupposes the authenticity of the authorship and originality of the exercises carried out. Any act of copying and/or plagiarism or irregular use of Artificial Intelligence (AI) will result in the immediate and irrevocable suspension of the assessable activity, without the right to recovery.

However, and without contradicting these general criteria, each teacher may define other specific complementary conditions, which must be informed and published in writing at the beginning of the course to all students enrolled in their subject.

These complementary conditions cannot in any case result in a penalty or limitation of the qualification of an activity, nor the loss of the right to recover an activity.

Specific evaluation criteria within continuous evaluation

Evaluation Criteria	Description	Learning Outcome	Skills	%
CA-01	Organizes tools and materials in an ideal way for the smooth functioning of the experimental process	RA-01, RA-02	CT-01, CT-03	10-20
CA-02	Identify, organize and record the experimental process for possible reproduction.	RA-03	CG-04	10-20
CA-03	Apply knowledge to develop an experimental project	RA-04	INT-08, MOD-03, PRO-06, PRO-07	10-30
CA-04	Quality of the publication. The publication is consistent with the experimental recipes and processes used.	RA-05	GRA-02	20-50
CA-05	Share, with rigor, the findings with the class group, help with the organization of the classroom.	RA-06	T-15, CT-01	10-30

Evaluation instruments within continuous evaluation

- See the instruments described in the activities.

7.2. Recovery

General recovery criteria

The ESDAPC sets general recovery criteria that are common to all teaching guides, without prejudice to the specific evaluation and grading criteria of each subject:

- The ESDAPC provides for a single recovery per activity. The recovery of suspended activities will be done within the deadlines defined by the teaching staff in their teaching guide and classroom schedule within the same semester. In the event that the teaching staff has not established a recovery calendar, the student may submit the recovery activities during the last school week of the semester.

Specific recovery criteria within continuous assessment

- They are the same as for continuous assessment.

Specific recovery criteria outside of continuous assessment

- A set of extraordinary experiments and applications will have to be carried out, apart from those carried out in the classroom.

Subject recovery instruments outside of continuous assessment

- Publication /*Cookbook*

8. Educational care within the framework of an inclusive education system

This Teaching Guide takes into account educational care within the framework of an inclusive educational system that includes two reference frames that support it:

- MISU: Universal Measures and Supports to promote personal and social development in equity and equality.
- DUA: Universal Learning Design, which allows flexible learning situations to be created based on a design that detects and minimizes the barriers of the context, from the beginning, and that considers variability.

However, to ensure freedom of thought and opportunities in relation to the gender perspective, a co-educational dynamic is carried out that avoids the predisposition of differential treatment, role attributions or assumptions of abilities determined by gender.

The MISU and DUA will be applied to all ESDAPC students. Those students in need of additional measures and support will be included through an Individualized Support Plan.

9. Copying, plagiarism, and academic honesty

From a legal point of view, plagiarism is an infringement of copyright.

The ESDAPC NOFC describes in section 5.4 irregular conduct in the evaluation procedure, which includes copying or plagiarism in any academic activity.

10. Use of Artificial Intelligence (AI)

The ESDAPC recognizes the value of Artificial Intelligence (AI) in the educational field, while highlighting the risks it entails if it is not used ethically, critically and responsibly. The use of AI in the teaching and evaluation context is governed by the principles, criteria and recommendations established in the ESDAPC Guide to the Ethical and Responsible Use of Artificial Intelligence, which constitutes the institutional reference document in this matter.

In this sense, in each assessment activity, students will be informed about the AI tools and resources that can be used and under what conditions, recommending their use as an assistance tool during the research, analysis or conceptual exploration process, but not as a replacement for their own work or professional judgment.

For their part, students undertake to follow the instructions of the ESDAPC when carrying out the assessment activities, as well as the criteria included in the Guide for the Ethical and Responsible Use of AI. Within this framework, students must transparently cite the AI tools used and explicitly identify texts, images or other content generated with AI systems, which may not be presented as their own production.

Misuse of Artificial Intelligence can seriously affect the evaluation of assessment activities. In case of doubt, it is recommended that students consult the teacher responsible for the subject before submitting.

The specifics of the use of Artificial Intelligence in each subject —including the authorized tools, conditions of use and associated evaluation criteria— will be defined in the classroom programming, where teachers will contextualize the Teaching Guide and the Guide for the Ethical and Responsible Use of AI based on the objectives, skills and methodologies of the subject.

In all cases, students are responsible for any possible errors, omissions or biases that may be generated by the Artificial Intelligence used in the work process.

11. Sources of information and teaching resources

Basic bibliography

https://www.materialfutures.com/

Reference bibliography and other resources

https://materio.com/en
https://www.iaacblog.com/programs/bio-fabric-microbial-cellulose/
https://www.iaacblog.com/programs/bioplastic-bubbles/

Audiovisuals

https://www.ccma.cat/3cat/materials-per-al-segle-21/video/5704515/
https://www.nike.com/es/ca/a/mans-a-lobra-com-fer-materials-biodegradables

12. Training activity sheets

ACTIVITY 1	Duration: 5-8 weeks	Weighting: 20-30%

Description of the activity

Explore and analyze the physicochemical properties and design possibilities offered by various biomaterials and recycled materials. Through a practical and experimental approach, students will produce small-scale samples, document the process and evaluate the results in order to identify potential applications in design projects with sustainability and language criteria.

Development of the activity:
Students will work in flexible groups to:

1. **Select and prepare materials:**Collection and classification of waste (organic or inorganic) and/or ingredients for the creation of biomaterials (e.g. starches, gelatins, vegetable fibers, etc.).

2. **Formulation and sample manufacturing:**Preparation of samples from recipes or experimental formulas, taking into account the proportion of components, the drying process, temperature, flexibility and resistance.

3. **Analysis and registration:**Systematic observation of the behavior of the samples (hardness, texture, deformation, biodegradability, etc.) and recording of the results through technical sheets, photographs and videos.

4. **Critical reflection:**Collective discussion on the advantages and limitations of the materials obtained, their viability in real contexts and their possible applications in sustainable design.

Contents

- Criteria for defining and classifying new materials and new techniques.
- New current materials (techniques or systems), in different phases of research-production.

Skills

CT-01	Organize and plan work in an efficient and motivating way.
CT-03	Solve problems and make decisions that meet the objectives of the work being carried out.
CT-16	Use the means and resources at your disposal responsibly towards cultural and environmental heritage.

Applied teaching methodologies

MD9	Guided practice
MD8	Project work
MD5	Workshops and/or internships
MD1	Conference and/or master class

Learning outcomes

RA-01	Identify and use tools and materials.
RA-02	Organize the workspace to do experimental design projects
RA-03	Interprets and evaluates possibilities and techniques to promote subsequent ideation processes.

Continuous evaluation

Specific evaluation criteria within continuous evaluation

- Organizes tools and materials in an ideal way for the proper functioning of the experimental process RA-01,02
- Identify, organize and record the experimental process for possible reproduction. RA-03

Evaluation instruments within continuous evaluation

- Monitoring in the classroom
- Tutorials
- Process images / dossier / technical sheets / publication

Specific recovery criteria within continuous assessment

- Organizes tools and materials in an ideal way for the proper functioning of the experimental process RA-01,02
- Identify, organize and record the experimental process for possible reproduction. RA-03

Recovery outside of continuous assessment

Specific recovery criteria outside of continuous assessment

- Organizes tools and materials in an ideal way for the proper functioning of the experimental process RA-01,02
- Identify, organize and record the experimental process for possible reproduction. RA-03

Recovery instruments outside of continuous assessment

- Process images / dossier / technical sheets / publication
- Task feedback.

ACTIVITY 2	Duration: 5-8 weeks	Weighting: 20-50%

Description of the activity

Apply the knowledge acquired in experimentation with biomaterials and recycled materials to conceptualize and develop a small design project that integrates criteria of sustainability, technical feasibility and formal creativity.
Based on the results obtained in the previous activity, students will make a proposal that highlights the properties of one or more materials created or analyzed. The project can have a functional, speculative or communicative focus, and must respond to a specific need or reflection (social, environmental, technological, etc.).

1. **Definition of the challenge or concept:**Identification of a problem, opportunity or application context where the materials developed can provide value.
2. **Ideation and conceptualization:**Generation of ideas and selection of a proposal consistent with the characteristics of the material.
3. **Prototyping and experimentation:**Making a prototype, using the selected material and testing its behavior in its intended use.
4. **Process documentation:**Collection of the process in visual and written format: diagrams, photographs, analysis of the material, reflection on the application and the difficulties encountered.

Expected results:

- A small-scale object, installation, visual concept or system that uses biomaterials or recycled materials.
- Recording of the process and results (sheets, images, reflections).

Contents

- New current materials (techniques or systems), in different phases of research-production.
- Applications of new materials, techniques or systems within the field of specialty.

Skills

PRO-06	Determine the construction solutions, materials and production principles appropriate to each case
PRO-07	Know the characteristics, physical and chemical properties and behavior of the materials used in the design of products, services and systems
MOD-03	Learn about the characteristics, properties and behavior of materials used in the different areas of fashion design.
INT-08	Learn about the most common manufacturing, production and manufacturing processes in the different sectors linked to interior design.

CG-04	Have a scientific view on the perception and behavior of form, matter, space, movement and color.

Applied teaching methodologies

MD9	Guided practice
MD8	Project work
MD5	Workshops and/or internships
MD1	Conference and/or master class

Learning outcomes

RA-03	Interprets and evaluates possibilities and techniques to promote subsequent ideation processes.
RA-04	Apply and place traditional or current techniques and resources in the design process, connect and assess the possibility of integrating them into design processes.

Continuous evaluation

Specific evaluation criteria within continuous evaluation

- Identify, organize and record the experimental process for possible reproduction. RA-03
- Apply knowledge to develop an experimental project. RA-04

Evaluation instruments within continuous evaluation

- Monitoring in the classroom
- Tutorials
- Process images / dossier / technical sheets / publication

Specific recovery criteria within continuous assessment

Same

Recovery outside of continuous assessment

Specific recovery criteria outside of continuous assessment

- Identify, organize and record the experimental process for possible reproduction. RA-03
- Apply knowledge to develop an experimental project. RA-04

Recovery instruments outside of continuous assessment

- Process images / dossier / technical sheets / publication
- Task feedback.

ACTIVITY 3	Duration: 2-3 weeks	Weighting: 20-30%

Description of the activity

Design and produce a publication in format *fanzine* that collects the set of experiments and projects developed during the semester, with the aim of visually and conceptually communicating the process of exploration with the materials. The fanzine must highlight both the process and the results, becoming a tool for dissemination and inspiration.

Publication requirements:

- **Required content:**
- Index with a clear and coherent structure (temporal, thematic, material, etc.).
- Documentation of the experimental practices and the microproject of activity 2
- Detailed photographs and general visuals of the materials: textures, transparencies, color, reflections, etc.
- Basic technical information: composition of materials, production time, drying or curing conditions, tools used, manufacturing systems.
- Qualitative assessment: use of adjectives and sensory language to describe material and aesthetic qualities.
- Experiments by other colleagues (duly accredited).
- Images of other students taken in class (with authorship reference).
- Reference data or texts (citations, bibliography, short articles).

Presentation criteria:

- The format is free in print and digital, with an experimental, scientific and informative character, visually well-designed and with a clear narrative.
- The originality of the graphic design, the coherence between the content and the chosen medium, and the expressive use of visual resources will be assessed.
- You must include a caption and authorship for all material that is not your own.

Purpose and dissemination:
This fanzine will be part of the end-of-year collective exhibition, where it will be shown as material testimony to the research and creation process developed by the class group. It is conceived as an inspirational and documentary publication, which highlights material research and its transformative potential within design.

Contents

- Presentation and communication of experimental projects in the context of contemporary design

Skills

GRA-02	Master the formal resources of expression and visual communication.
CT-01	Organize and plan work in an efficient and motivating way.

Applied teaching methodologies

MD1	Conference and/or master class
MD8	Project work
MD7	Case study
MD11	Collaborative work

Learning outcomes

RA-05	Communicate research in experimental design projects.
RA-06	Work autonomously and value the importance of initiative and entrepreneurial spirit in professional practice. Organize yourself in work groups and integrate individual work into the whole.

Continuous evaluation

Specific evaluation criteria within continuous evaluation

- Quality of the publication.The publication is consistent with the recipes and experimental processes used. RA-05
- Shares findings with the class group with rigor, helps with classroom organization. RA-06

Evaluation instruments within continuous evaluation

- Publication

Specific recovery criteria within continuous assessment

- Same

Recovery outside of continuous assessment

Specific recovery criteria outside of continuous assessment

- Same

Recovery instruments outside of continuous assessment

- Publication