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de Navarra

Circular design (Gr. Diseño)

Guía docente 2023-24

PRESENTATION

Course description: Our world is in transition from a linear to a circular economy. To meet the principles of this new circular economy, design is critical: the phase of design is responsible for 80% of environmental impacts. The role of the designer has shifted from garments or products to companies and economic systems. In this course, it is offered a general introduction to the circular economy and the tools to improve the designer's decision in every cycle of the process:

- To take
- To make
- To deliver
- To use/to consume
- To return/to enrich

There is a theoretical frame and many practical activities and case studies, most of them in groups, related to the 3 mentions: product, fashion and service.

- **Degree:** Design
- **Module in the Degree Program:** Module VI. Mentions of Product, Services and Fashion
- **Number of credits:** 4.5 ECTS:
- **Year:** Fourth, 1st semester
- **Type of course:** Optional
- **Instructors:** M^a Jesús Álvarez, mjalvarez@tecnun.es

Silvia Pérez Bou, sperezb@unav.es

- **Language:** English
- **Room**
- **Lecture Schedule:** 20th to 24th November, from 9:00 to 14:00 and from 15:30 to 17:30

28th November, from 9:00 to 13:00 and from 14:30 to 16:30

11th or 14th December, Exam and Jury, from 9:00 to 13:00

COMPETENCIES

BASIC

BC1 – Students should have demonstrable knowledge and understanding of an area of study that builds on the base knowledge of general secondary education, and at a level at which, although supported by advanced text books, also includes aspects that imply knowledge related to the vanguard of the field of study.



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BC3 – Students should have the ability to gather and interpret relevant data (normally within their area of study) in order to make judgments that reflection on relevant social, scientific or ethical issues.

BC4 – Students should be able to communicate information, ideas, problems and solutions to both a specialized and general audience.

BC5 – Students should have developed the learning and study skills that are necessary for undertaking studies with a high degree of autonomy.

GENERAL

GC1—Analyze, evaluate, and present the diverse strands of creativity that influence the field of design.

GC5 – Skillfully manage modern technologies geared toward creation and manufacturing processes specific to the design world.

GC6 – Ability to speak English, B2 level, with knowledge of scientific and academic terminology related to the world of art, design, and applied arts.

GC7 – Analyze products or services in relation to the technological and productive possibilities of the creative industry.

SPECIFIC

SC10 – Know the systems and industrial manufacture processes specialized according to the different fields of design.

SC17 – Know the artistic traditions of Western culture and apply the corresponding technical, economic, social, and ideological foundations to design.

SC19 – Evaluate the foundation of Hispanic artisanal tradition and its application to design.

SC24 – Understand market strategies related to design.

PROGRAM

1. Circular Economy. An overview. Prof. M^a Jesús Álvarez

a. History

b. Transition

c. Levels: Micro, Meso and Macro

d. Principles:

1. Trash as food

2. Diversity strengths



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3. Renewable energies
 4. System Thinking
 - e. The main actors
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2. Industrial Symbiosis. Prof. M^a Jesús Alvarez
 - a. Definition
 - d. New kind of businesses: collaborative economy
-
3. Introduction to Circular Design. Prof. Silvia Pérez Bou
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4. Fields of action for a designer. Prof. Silvia Pérez Bou
 - a. To take:
 1. Materials: Wood, plastic, metals, fabrics, etc.
 2. How to reduce substitution of materials
 3. Optimization of the material
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4. Case Studies
 - b. To make
 1. Life Cycle Assessment
 2. Zero waste design
 3. Design for scarcity vs Programmed Obsolescence
 4. Case Studies
 - c. To deliver
 1. Origin of resources
 2. Logistics
 3. Packaging optimization
 4. Case Studies



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d. To use / to consume

1. Information for the user/consumer
2. Design for reusing, for manufacturing, and for repairing.
3. Case Studies

e. To return/to enrich

1. Recycling
2. Upcycling
3. Waste as raw material
4. Case Studies

5. Final Project.

EDUCATIONAL ACTIVITIES

I CLASSROOM TEACHING ACTIVITIES

1. Lectures are given by the professors on the themes indicated in the syllabus with the help of the blackboard, power point presentations and videos. The professors will post on ADI the power point presentation, the notes for each topic and some recommendations for further reading.
2. Practical Activities in class.
3. Final Project, about how to reduce textile or food waste in Ilunion Hotels (teamwork).

II PERSONAL WORK

Students should conduct personal study using the professor's notes, notes taken in lectures and recommended books, and articles if needed. Students have to prepare oral presentations in English and pass an exam about the main concepts covered during the course.

Hours distribution of the activities. 4.5 ECTS= 112,5 h (25 h/ECTS)

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|--|--------|
| 1. Attendance and participation in theoretical classes | 27 h |
| 2. Attendance and participation in practical classes | 18 h |
| 3. Projects and research with the professors | 9 h |
| 4. Personal study and work | 58.5 h |



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ASSESSMENT

ORDINARY CALL

There will be a process of continuous assessment with participation in class, activities, and projects. The course performance and grading will be determined as follows:

- Attendance and participation in classes: 10%
- Projects and activities: 65% (it includes the final project and the exercises proposed during the course)
- Final test: 25% The final exam will be on the 11th or 14th of December (tbc), a multiple-choice test. The questions will be drawn directly from lectures and class discussions.

EXTRAORDINARY CALL

In case one student does not pass the Ordinary call in December with a minimum of 5.00 points (over 10.00), there will be an Extraordinary Call in June, consisting of a multiple-choice test and a different Project from those presented before:

- Project: 50%
- Test: 50%.

OFFICE HOURS

You can contact the professors by email to arrange a meeting:

Dr. Silvia Pérez Bou (sperezb@unav.es)

Dr. M^a Jesús Álvarez (mjalvarez@tecnun.es)

BIBLIOGRAPHY AND RESOURCES

Basic Bibliography

Viles, E. et al. (2019) *Circular economy: Guide for SMEs*. EUNSA.

Ellen MacArthur Foundation. (2019) *New plastics economy global commitment*.

ISO 8887-1:2017.

McDonough, W. and Braungart, M. (2002) *Cradle to cradle: remaking the way we make things*. North Point Press.

McDonough, W. and Braungart, M. Cradle to cradle (2002) (recurso electrónico): Rediseñando la forma en que hacemos las cosas.



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Moreno, M. et al. (2016) *A Conceptual Framework for Circular Design*. Sustainability 8 (9), 937, DOI: 10.3390/su8090937.

Additional Bibliography

A European Green Deal. European Commission 2020. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

Lofthouse, V. and Prendeville, S. (2018) *Human-Centred Design of Products and Services for the Circular Economy – A Review*, The Design Journal, 21:4, 451-476, DOI: 10.1080/14606925.2018.1468169 [Localízalo en la Biblioteca](#)

Sumter, D. et al. (2018) *The Role of Product Design in Creating Circular Business Models: A Case Study on the Lease and Refurbishment of Baby Strollers*. Sustainability 10 (7), 2415, DOI: 10.3390/su10072415 [Localízalo en la Biblioteca](#)

Interesting links

<https://www.circulardesignguide.com> Circular Design Guide from Ellen MacArthur Foundation

<http://circulardesigneurope.eu> Educational resources

https://ec.europa.eu/consumers/consumers_safety/safety_products/rapex/alerts/?event=main.listNotifications&lng=es RAPEX Rapid Alert System

<https://echa.europa.eu> Regulation of the European Union on chemical substances

<https://www.ellenmacarthurfoundation.org/es/economia-circular/concepto> Circular Economy

<https://www.katche.eu> Training for Circular Economy in the Construction and Furniture Sectors

<https://www.matrec.com> Sustainable materials and trends

<https://mudjeans.eu> Rental Jeans

<https://www.vitsoe.com/eu> Design Dieter Rams. Long Living furniture

<https://ellenmacarthurfoundation.org/articles/design-and-the-circular-economy> Design and the circular economy. Simon Widmer

Documentaries

<http://www.closingtheloopfilm.com/>

<https://www.youtube.com/watch?v=ZhaR2efoeWU>

<http://www.rtve.es/television/20180118/viaje-circular/1662218.shtml>