SYLLABUS: USER CENTERED METHODOLOGIES FOR INNOVATION AND DESIGN 2025-26

GENERAL DATA

Name:	User-centered methodologies for design and innovation
Code:	801874
Course:	2025-2026
Degree:	Master's Degree in Communication of Technology and Innovation
Number of credits (ECTS):	5
Location in the curriculum:	1st Quarter
Date of last review:	July 2025
Responsible Professor:	Professor Jordi Castells Cuscullola

1. OVERVIEW

The course "Innovation Methodologies and User-Centered Design" aims **to connect the importance of leading an innovative culture** within organizations with the **effective application of innovation and user-centered design methodologies**, recognizing their influence and relevance. The goal is for students to recognize the **key role of the user** in creating experiences that seek to maximize communicative effectiveness, focusing on the needs and expectations of said user, client, and target audience.

This practical, application-oriented approach prepares students to develop specific skills such as **interpreting user needs** through the use of quantitative and qualitative research techniques. It also enables them to **experiment with innovation methodologies** applied to the **design of user-centered solutions**, learning to interpret their needs and behaviors.

The course also integrates reflection on **ethical values** aligned with moral and social principles into the various phases of user-centered design processes.

In short, this course provides future professionals with conceptual and practical tools to understand the user, apply innovative methodologies in the design of communication solutions and strategies, and do so from an ethical perspective, which is fundamental in the context of technology and innovation.

2. GOALS

At the end of the course the student will be able to:

- Apply the main innovation methodologies and the principles of user-centered design to develop solutions and strategies, understanding how this relates to the importance of leading an innovative culture in organizations and recognizing the fundamental role of the user in communicative effectiveness.

- Interpret specific user needs through the use of quantitative and qualitative research techniques and experiment with innovative methodologies in the field of user-centered solution design, interpreting their needs and behaviors.
- Apply ethical values aligned with moral and social principles in each phase of the user-centered design process

3. LEARNING OUTCOMES

KNOWLEDGE
- K2.1: Relate the importance of leading an innovative culture with the effective application of innovation methodologies and user-centered design, recognizing their influence and relevance.
- K8.2: Recognize the key role of the user in creating experiences that seek to maximize communicative effectiveness, focusing on the user's needs and expectations.

SKILLS
- S01: Communicate effectively orally, in writing, and graphically with others about learning, thought development, and decision-making, and participate in discussions, using interpersonal skills such as active listening and empathy, which promote teamwork.
- S02: Develop the ability to contribute to innovation in new or existing business institutions and organizations by participating in creative projects and having the ability to apply skills and knowledge in entrepreneurship, organization, and technology-based business development.
- S03: Understand advanced digital technologies so that they can be applied with a critical perspective in diverse contexts, in academic, professional, social or personal situations.
- S4.1: Design innovative strategies that incorporate creative approaches and disruptive solutions, especially those related to omnichannel communication and marketing and aligned with the company's overall strategy.
- S4.2: Interpret specific user needs using quantitative and qualitative research techniques.

COMPETENCES

- C01: Integrate the values of sustainability, understanding the complexity of systems, in order to undertake or promote actions that restore and maintain healthy ecosystems and improve justice, thus generating visions for sustainable futures.
- C02: Identify and analyze problems that require making autonomous, informed, and reasoned decisions to act with social responsibility, following ethical values and principles.
- C03: Develop the ability to assess inequalities based on sex and gender, in order to design solutions.
- C8.1: Apply ethical values aligned with moral and social principles in each phase of user-centered design processes, as well as in decision-making in crisis situations, conducting ethical and responsible communication.
- C13.1: Experiment with innovation methodologies in the field of user-centered solution design, interpreting their needs and behaviors.

4. CONTENTS

TOPIC 1. FUNDAMENTALS OF INNOVATION AND THE USER-CENTRIC APPROACH

Specific learning outcomes
At the end of this topic, students should be able to:
- Understand the fundamental concepts of innovation and user-centered design (UCD), recognizing the importance of the user and their relationship to an innovative culture.
- Apply basic communication and teamwork skills, with an ethical and sustainability perspective in the context of technology and innovation.

Contents
1.1. Introduction to innovation: concept, types and models.
1.2. The context of technology and innovation in communication.
1.3. Fundamentals of User-Centered Design (UCD): definition, principles, and benefits.
1.4. The relationship between innovative culture and UCD.
1.5. Overview of innovation methodologies and UCD (Design Thinking , Lean, Agile, Design Sprint, etc.).

TOPIC 2. RESEARCH AND DEEP UNDERSTANDING OF THE USER

Specific learning outcomes

At the end of this topic, students should be able to:

- Interpret user needs using qualitative and quantitative research techniques and define complex problems considering technological factors.
- Apply ethical principles in the research phase of user-centered design processes.
- Continue applying skills in communication, teamwork, technological understanding, ethical perspective, sustainability, and inequality analysis.

Contents

2.1. Fundamentals of User Research: objectives, planning, methods (qualitative and quantitative).
2.2. Qualitative Research Techniques: interviews, observation, focus groups.
2.3. Quantitative Research Techniques: surveys and analysis of existing data.
2.4. Ethics in user research and data protection.
2.5. Research synthesis: data analysis, pattern identification, and findings. 2.6. Creation of synthesis artifacts: Personas and Empathy Maps.
2.7. User Experience Mapping (Customer /User Journey) Mapping).
2.8. Clear definition of user problems and needs (Problem) Framing).

TOPIC 3. IDEATION, PROTOTYPING AND ETHICAL DESIGN

Specific learning outcomes

At the end of this topic, students should be able to:

- Experiment with innovation methodologies in the design of user-centered solutions (communication), creating innovative and disruptive strategies.
- Apply ethical values aligned with moral and social principles in the design phase, considering inclusion and accessibility.
- Continue applying skills in communication, teamwork, technological understanding, ethical perspective, sustainability, and inequality analysis.

Contents

3.1. Introduction to Ideation Methodologies and Dynamics: principles (divergence/convergence), terminology.
3. 2. Ideation methodologies and techniques: brainstorming , brainwriting , SCAMPER, etc.
3.3. Techniques for selecting and prioritizing ideas.
3.4. Introduction to Prototyping: purpose, principles, rapid prototyping cycle.
3.5. Types of Prototyping
    - low fidelity: sketching , storyboarding , paper prototypes.
    - medium and high fidelity: wireframes , mockups, interactive prototypes (mention of tools).
3.6. Prototyping services and experiences.

3.7. Principles of experimentation and the concept of MVP (Minimum Viable Product) / MVX (Minimum Viable Experience).

3.8. Ethical, Inclusive and Accessible Design.

3.9. Ethical considerations in the design of technological solutions (biases, privacy).

TOPIC 4. VALIDATION, ITERATION AND IMPLEMENTATION

Specific learning outcomes

At the end of this topic, students should be able to:

- Experiment with innovation methodologies to validate and improve user-centered solutions and implement innovative strategies in organizational contexts.
- Apply ethical values and social responsibility in the evaluation and implementation of solutions.
- Continue applying skills in communication, teamwork, technological understanding, ethical perspective, sustainability, and inequality analysis.

Contents

4.1. User Evaluation and Testing: planning, implementation, types of testing, data collection.

4.2. Analysis of testing results and feedback.

4.3. The Iteration process is based on user feedback.

4.4. Documentation of results and design decisions.

4.5. Taking the Solution to Implementation: Challenges and Strategies.

4.6. Integration of UCD methodologies into organizational workflows.

4.7. Innovation management and the role of communication in the company.

4.8. Lean, Agile and UCD Integration.

5. TEACHING AND LEARNING METHODOLOGY

It is based on **participatory expository classes**, which are complemented by the students' reading and prior preparation of the topics.

A central pillar of the methodology is the **" Learn By Doing " (Learning by Doing)**, aligned with the practical and project-oriented approach of the Master's Degree in Communication of Technology and Innovation. This approach seeks to have students actively apply and consolidate the concepts and procedures presented.

The main activities that will be carried out to promote this active learning include:
- **Development of a continuous case study:** Throughout the course, students will work on solving **a case study** that will allow them to apply the different phases of UCD and the various innovation and user-centered design methodologies addressed in each topic. This case serves as a common thread to integrate theoretical and practical content. This also applies "Problem-Based Learning."
- **Exercise resolution:** Specific activities will be carried out to address and solve posed situations, reinforcing the understanding of the content.
- **Participation in debates:** Active discussion on topics and cases will be encouraged, promoting reflection and the exchange of ideas.
- **Practical problem-solving classes:** Sessions dedicated to problem-solving, with student participation, of practical cases and exercises related to the subject.
- **Group/cooperative work:** Many activities, including the main case study, will be developed in teams to enhance collaboration and teamwork skills.
- **Independent work:** Students will dedicate time to preparing classes, reading materials, and preparing submissions.

The use of Generative AI tools is permitted if used as an assistant. Under no circumstances may they be used to achieve the activity's primary objectives. The AI used must be acknowledged in the activity presentation, and the prompts used to obtain the result must be included as an appendix at the end of the activity.

6. EVALUATION

In accordance with the Bologna Plan, the model rewards the constant and continuous effort of students.

40% of the grade is obtained from the continuous assessment of the supervised activities, and the remaining 60% is obtained from the in-person final exam. The final exam has two sessions.

The final grade for the course (NF) will be calculated using the following formula:

- **NF = Final Exam Grade x 60% + Continuous Assessment Grade x 40%**

- The minimum score for the final exam to calculate the NF will be 40 out of every 100 points.
- The subject is passed with an NF equal to or greater than 50 out of every 100 points.

Type of activity	Description	% Assessment	
Deliveries:			**30%**
	Group practical exercises	40 %	
	Applied project (practical case)	60 %	
Questionnaires:			**10%**
	Topic 1. Questionnaire	2.5 %	
	Topic 2. Questionnaire	2.5%	
	Topic 3. Questionnaire	2.5%	
	Topic 4. Questionnaire	2.5%	
Final exam			**60%**
	Theoretical knowledge test (multiple choice test) and individual practical exercise.	30 %	
	Individual practical exercise	70%	

7. LITERATURE

Editions in English

- Bland, DJ & Osterwalder, A. (2019). *Testing Business Ideas: A Field Guide for Rapid Experimentation.* Hoboken: John Wiley & Sons.

- Brown, T. (2009). *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation.* New York: HarperCollins.

- IDEO.org. (2015). *The Field Guide to Human- Centered Design: Design Kit.* San Francisco: IDEO.org.

- Knapp, J., Zeratsky, J., & Kowitz, B. (2016). *Design Sprint: How to Solve Big Problems and Test New Ideas in Just Five Days.* New York: Simon & Schuster.

- Lewrick, M. (2020). *Design Thinking and Innovation Metrics: Powerful Tools to Manage Growth, Profitability and Customer Value.* Chichester: John Wiley & Sons.

- Lewrick, M., Link, P., & Leifer, L. (2020). *The Design Thinking Toolbox: A Guide to Mastering the Most Popular and Valuable Innovation Methods.* Chichester: John Wiley & Sons.

- Lockwood, T. (2013). *Design Thinking: Integrating Innovation, Customer Experience and Brand Value.* New York: Allworth Press.

- Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses.* New York: Crown Business Stickdorn, M. & Schneider, J. (2011). *This is Service Design Thinking: Basics, Tools, Cases.* Amsterdam: BIS Publishers.