

**Subject Program  
Lab Global Innovation Challenge**

**A. General Background**

1.	<b>Academic Unit</b>	Instituto de Innovación e Interdisciplina iCubo				
2.	<b>Careers</b>	Subdirección de Interdisciplina				
3.	<b>Code</b>	LAB159				
4.	<b>Curriculum level</b>	Bachelors / Literature				
5.	<b>Credits<sup>1</sup></b>	16 créditos				
6.	<b>Type of course</b>	Mandatory		Elective	X	Optional
7.	<b>Duration</b>	Bi-monthly		Semester	X	Annual
8.	<b>Weekly Modules</b>	Theoretical Classes	2	Practical Classes	2	Tutorial Support
9.	<b>Academic hours</b>	Classes	136			
10.	<b>Prerequisites</b>	Approved English language proficiency at level B2				

**B. Contribution to the Graduate Profile**

This course developed and taught by the Institute of Innovation and Interdisciplinarity iCubo, is part of an alternative and integrated program within the UDD Futuro Educational Project, which aims to strengthen disciplinary education through the incorporation of Interdisciplinary Laboratories into student training.

Through this Interdisciplinary (ID) course, students will be required to create a process and product or service based on a challenge posed by a relevant company or institution by executing a project that requires the

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<sup>1</sup> The work assigned to each student will be recognized in their respective study plan, with a range of between 10 and 20 credits being possible to define.

interdisciplinary integration of Architecture, Journalism, and Business Engineering. To achieve this, the course units have been transformed into articulating topics, which are, in turn, linked to the stages of the Design Thinking methodology, enabling an integrated approach to the problem.

Given its nature, this course contributes to developing generic competencies in Communication, Entrepreneurship, Leadership, Innovation, and Global Vision, as these have been defined as fundamental for interdisciplinary work.

**C. The course develops the following competencies and general learning outcomes:**

Generic Competencies	General Learning Outcomes
<i>Entrepreneurship and Leadership</i>	By executing an interdisciplinary project, creating a process, and develop a product or service based on a challenge presented by a relevant company or institution.
<i>Global Vision</i>	Construct formal and conceptual proposals that address the needs of society and individuals from multiple dimensions, using an iterative design process that incorporates technological and business criteria applied to the product.
<i>Innovation</i>	Integrate interdisciplinary teams, leading and assuming roles and responsibilities within the project framework.
<i>Communication</i>	Design and implement an interdisciplinary project, evaluating its technical, legal, economic, financial, and administrative viability.  Develop high-quality arguments through critical analysis of theoretical frameworks.  Build diagnostic hypotheses for individual and collective phenomena, establishing relevant connections from different analytical perspectives.  Communicate messages that persuade the audience and seek to facilitate processes of change.  Communicate the work done in the language of the discipline and tailored to the audience, both orally and in writing.

#### D. Content Units and Learning Outcomes

Content Units	Competences	Learning Outcomes
<b>Unit I: Introduction</b> <ul style="list-style-type: none"> <li>• Kick-off</li> <li>• Team building</li> <li>• Fundamentals of design for collaborative projects</li> </ul>	<i>Entrepreneurship and Leadership</i>  <i>Global Vision</i>  <i>Innovation</i>	<p>Integrates interdisciplinary teams, leading and assuming roles and responsibilities within the project framework.</p> <p>Works in an interdisciplinary context to create value and new products/services.</p> <p>Defines and adapts the fundamentals of design and collaborative projects in their proposed solution to the challenge.</p>
<b>Unit II: Empathize</b> <ul style="list-style-type: none"> <li>• Understanding users (interviews/observations/other methods)</li> </ul>	<i>Communication</i>	<p>Analyzes needs from the human, material, and interaction dimensions to identify design opportunities in the realm of products and services proposed by companies or institutions, by the posed challenge.</p> <p>Identifies the logical framework for the empathy process with users and potential customers.</p>
<b>Unit III: Define</b> <ul style="list-style-type: none"> <li>• Problem analysis,</li> <li>• Needs analysis, persons and scenarios</li> <li>• Problem statement</li> <li>• General solution statement</li> <li>• General concepts for project formulation.</li> </ul>		<p>Defines project requirements and constraints: from what is desirable by people, technically feasible, socially and environmentally acceptable, to commercially viable.</p> <p>Conveys messages that persuade the audience and aim to facilitate change processes.</p> <p>Communicates the identified problem and the proposed solution using appropriate language for the audience, both orally and in writing.</p> <p>Develops high-quality arguments through critical analysis of theoretical approaches.</p>

<p><b>Unit IV: Ideate</b></p> <ul style="list-style-type: none"> <li>• Ideation and creative thinking</li> <li>• Ideation methods</li> <li>• Solution proposal</li> </ul>		<p>Adapt ideation methods for generating solution proposals to the presented challenge.</p> <p>Collaboratively adapt a solution to be developed with their interdisciplinary team, which is socially, environmentally, technically, and commercially appropriate.</p> <p>Effectively conveys the selected solution proposal using suitable language for the audience, both orally and in writing.</p>
<p><b>Unit IV: Prototype</b></p> <ul style="list-style-type: none"> <li>• Brief construction: Design requirements (user desirability) and entrepreneurship (commercial viability)</li> <li>• Paper prototyping</li> <li>• Storyboarding</li> <li>• Low-resolution prototyping and production of prototypes for evaluation</li> <li>• 3D Printing, Virtual Reality, App Development</li> <li>• Packaging design</li> </ul>		<p>Implements a formal proposal for the product/service to address the identified need/problem, considering the diagnosed variables and creating value for society and the industry.</p> <p>Utilizes tools to produce a low-resolution prototype to address the identified problem or challenge.</p> <p>Effectively collaborates with experts in specific areas to enrich and refine the product proposal, demonstrating interdisciplinary skills and applying specialized knowledge.</p>
<p><b>Unit V: Test</b></p> <ul style="list-style-type: none"> <li>• Video production</li> <li>• Product testing with users</li> </ul>		<p>Receives critiques and improvement suggestions positively to enhance the low-resolution prototype.</p> <p>Generates records of the pivoting process.</p> <p>Builds a Minimum Viable Product (MVP) incorporating the pivoting process.</p> <p>Collaborates effectively with experts and users in</p>

		<p>specific areas to enrich and refine the product proposal, demonstrating interdisciplinary skills and applying specialized knowledge.</p>
<p><b>Unit VI:</b> <b>Entrepreneurship</b></p> <ul style="list-style-type: none"> <li>• Applied marketing concepts</li> <li>• Applied marketing strategy</li> <li>• Strategic project dissemination and communication</li> <li>• Product positioning strategies in the market</li> </ul>		<p>Conveys messages that persuade the audience and aim to facilitate change processes.</p> <p>Communicates the work done in the language of the discipline and tailored to the audience, both orally and in writing.</p> <p>Analyzes what a project is, its lifecycle, and general concepts for its evaluation.</p> <p>Characterizes different types of projects based on economic principles and their evaluation.</p> <p>Organizes a fair with an interdisciplinary team for the UDD ecosystem.</p>

**E. Teaching Strategies**

The course will be developed using the Design Thinking and Project-Based Learning methodology, including lecture sessions and interdisciplinary workshops.

**Lecture Classes:** These are classroom sessions where students will receive theoretical guidelines and orientations for approaching the design and execution of their project. During these sessions, dialogue is encouraged, and topics are discussed with argumentation and counterargumentation. Due to their nature, the format of these classes may include the use of ICT (Information and Communication Technologies) as teaching aids, such as videos, PowerPoint presentations, etc.

**Workshops:** In these sessions, students design projects focused on creating a food product and work in interdisciplinary teams. These workshops involve visits from entrepreneurs, speed dating, and pitching to facilitate knowledge transfer through a reflective process.

We understand the interdisciplinary process as a method divided into four stages:

**STAGE 1 Consideration of the involved disciplinary perspectives**

1 In this stage, the student comes to perceive that there are problems shared by two or more areas of knowledge, which consequently leads to the emergence of alternative viewpoints. These viewpoints arise from specific approaches developed by historically and socially constituted academic communities. It is possible to interpret modes of understanding the reality that underlie their positions.

**STAGE 2 Comprehensive approach to the interdisciplinary problem**

2 A comprehensive approach to the problem is achieved when the available perspectives are meaningfully articulated through a structure consistent with the problem's complexity. This structuring of the problem in interdisciplinary dialogue demonstrates an adequate organization of available knowledge. It allows us to understand when and how a set of approaches applies to a particular situation.

**STAGE 3 Effective integration of disciplinary contributions**

3 In this stage, the student faces the challenge of transforming the available knowledge from the involved disciplines to produce a more organized understanding of the problem. This is the true added value of interdisciplinary education because available knowledge often presents as opposing viewpoints. Therefore, its integration requires a synthesis process that resolves the contradictions posed by the problem. This process involves two specific skills: (1) deciphering disciplinary terminology and (2) transferring disciplinary knowledge.

**STAGE 4 Appropriate resolution of the interdisciplinary problem**

4 In this stage, the student must use the newly gained understanding to solve the problem. This can be achieved through explaining the phenomenon, creating a product, or posing a new question in a way that would be unlikely through a single disciplinary approach alone. In other words, it corresponds to interdisciplinary understanding from a performance perspective, as it describes the ability to use knowledge rather than merely accumulating it.

## F. Evaluation Strategies

In this course, the teachers will implement various methods for evaluating learning outcomes. These evaluations serve as a means to provide feedback on the student's learning process. The assessment methods include:

- Midterm Exam 1 (20% of the presentation grade)
- Midterm Exam 2 (20% of the presentation grade)

- Peer Evaluation (Project Progress), progress notes, and advice to speakers based on design thinking (60% of the presentation grade)
- Final Exam

The final exam will account for 30% of the final course grade. This includes participation in the interdisciplinary fair and individual presentation of innovation projects to an external expert panel.

Attendance to classes is mandatory, with a minimum requirement of 75%

### **G. Learning Resources**

Given the contextual nature of the course, the bibliography will be determined by the product that student groups decide to address in their project.

### **H. Bibliography**

Aulet, Bill (2017). *Disciplined Entrepreneurship Workbook: 24 Steps to a Successful Startup*.

Hanington, B., & Martin, B. (2012). *Universal methods of design: 100 ways to research complex problems, develop innovative ideas, and design effective solutions*. Rockport Publishers.

Kumar, V. (2012). *101 design methods: A structured approach for driving innovation in your organization*. John Wiley & Sons.

LUMA Institute (2012), *Innovating for people: Handbook of human-centered design methods*, Pittsburgh, PA.

Serrano, Manuel (2019). *Design thinking. lidera el presente. Crea el futuro*.