esade

TEACHING GUIDE - 2025-2026

Leading Innovation for Global Challenges

UGRA_016610

Departments	Dept. of Operations, Innovation & Data Sciences
Teaching Languages	English
ECTS	6

Course Goals

- Understand the fundamental principles of innovation, including its different models, types, and processes
- Analyze the architecture of technology and industries, understanding the roles of modularity, platforms, and digital data in shaping competition and regulation
- Understand the role of various actors (government, companies, universities, entrepreneurs, brokers, etc.) in the innovation ecosystem
- Apply methodologies to develop innovations effectively including design thinking, prototyping, futures thinking, and systems thinking
- Evaluate the strategies for managing innovation within established organizations, including structuring for innovation, fostering collaboration through open innovation, and managing R&D and intellectual property portfolios.
- Critically assess the various levers the government could use to enable innovation including regulations, policy and investments.
- Understand the current geopolitical landscape of technology
- Develop critical thinking skills to assess the ethical implications and societal impact of emerging technologies.
- Cultivate interdisciplinary perspectives to create innovative approaches to global challenges
- Effectively leverage AI tools for innovation

Previous knowledge

None required

Prerequisits

None required

Teaching methodology

The course is centered around a semester-long engagement with real technological challenges faced by entrepreneurs, companies, governments and society. This project allows students to apply theoretical frameworks to actual business problems, creating tangible value while learning. Students

will conduct a rigorous analysis and develop actionable recommendations to enable new technologies. The course will include the following:

- Lectures: Presentations that cover essential theories, concepts, and case studies linking scientific innovation to business practices.
- In-class Group Exercises: Collaborative tasks where students work in teams to solve problems or conduct mini-projects, fostering skills in teamwork and practical application.
- Guest Speakers: Inviting entrepreneurs to share real-world experiences, providing students with insights into the application of science .
- Workshops: Hands-on sessions where students create initial models of products
- Prototyping: Students will create a prototype and pitch in groups of a new technology solution

This teaching approach ensures that students not only understand theoretical concepts but can effectively apply them in practice. The combination of real-world project work, diverse learning methods, and exposure to industry professionals aims to immerse students in the rich but complex technology landscape and allow them to leverage these technologies meaningfully to create impact.

Description

Course contribution to program

This course equips economics, policy, and law students with essential technology and innovation management competencies increasingly critical for leadership in today's interconnected global landscape. Students will develop an interdisciplinary toolkit integrating innovation methodologies, economic analysis, policy design, legal reasoning, and governance expertise to understand the fundamental drivers of innovation and its impacts on markets, institutions, and society. Through immersive engagement with real-world cases - spanning Silicon Valley's innovation ecosystem to the EU's pioneering AI regulatory framework - the course aims to prepare graduates to spearhead innovation initiatives across government agencies, international organizations, consulting firms, and policy think tanks. By embedding AI tools throughout the learning experience, students gain direct exposure to the technologies revolutionizing their future careers while cultivating the analytical sophistication required to navigate complex innovation challenges. Ultimately, this course empowers students to "speak the language" of technologists and innovators, enabling them to lead, govern, and make decisions in an era defined by rapid technological change.

Short description

ChatGPT, SpaceX and Lab-grown meats. We are living in times of abundant innovation but how can we manage innovation to solve society's grand challenges? This course, "Leading Innovation for Grand Challenges," is

designed for students of global governance, economics, law and policy who seek to understand and manage the power of innovation. We will delve into the entire innovation lifecycle - from generating ideas and designing business models to prototyping and eventual diffusion. The course will equip studnets with the frameworks to effectively manage innovation within diverse organizational settings, including corporations, startups, public sector institutions, and non-profits. Through a blend of foundational theories, in-depth case studies and a hands-on approach that integrates generative AI tools, students will learn how to leverage innovation to tackle critical global issues such as climate change, healthcare and global competition.

Bibliography

Grodal, S., Krabbe, A. D., & Chang-Zunino, M., The evolution of technology, Academy of management annals (Article)

Meadows, D. H., Thinking in systems: A primer, Sustainability Institute. (Book)
Blankesteijn, M., Bossink, B., & van der Sijde, Science-based entrepreneurship education as a means for university-industry technology transfer, International Entrepreneurship and Management Journal (Article)

UK Government, Futures toolkit (Technical Report)

Activities

In-class discussions and debates
Ethics of new innovations

Role-play exercises and simulations
Consulting simulation

Teamwork
Innovation portfolio competition

Group presentations
New technology solution pitch

Interaction with visiting guest professionals
Guest speakers

Project development and presentation
Understanding a grand challenge and current (failing) solutions

Prototype design
Prototyping with AI and validation of a potential solution

Content

#	Topic
1	Innovation Foundations and Technology Evolution

#	Topic
2	Technology Adoption, Diffusion and the Chasm
3	Innovation Ecosystems, Systems Thinking and the Role of Various Actors
4	Digital Innovation, Industry Architecture and Platform Economics
5	Business Model Innovation, Prototyping and Design Thinking
6	Futures thinking, Hypes and Innovation Evaluation
7	Corporate Innovation Strategy, Managing the R&D organization
8	Government's Enabling Role, Intellectual Property, Open Innovation
9	Public Sector Innovation, Technology Policy and Governance and Geopolitical Issues
10	Ethical Implications, Societal Impacts and Cost-benefit Evaluation of Technologies

Assessment

Tool	Assessment tool	Category	Weight %
Group project	Group solution development	Ordinary round	70.00%
In-class analysis and discussion of issues	Participation and in-class workshops	Ordinary round	30.00%

PROGRAMS

G114-Global Governance Exchange Program (Undergraduates: Law)
G114 Year 1 (Optative)