PROGRAMMA DEL CORSO DI INNOVAZION E R&D MANAGEMENT

SETTORE SCIENTIFICO

SECS-P/08

CFU

6

LIST OF VIDEO LESSONS

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Module 1: Innovation and Industry Dynamics

Class 1: The Strategic Imperative of Technological Innovation

Class 2: Sources of Innovation: The Role of Creativity

Class 3: Sources of Innovation: Firms, Users, Universities & Networks

Class 4: Types of Innovation

Class 5: Patterns of Innovation: Technology S-Curves and Cycles

Class 6: Dominant Designs

Class 7: Dimensions of Value

Class 8: The Entry Decision: First-Mover Advantages and Disadvantages

Class 9: Strategic Timing: Factors Influencing Optimal Market Entry

Module 2: Developing an Innovation Strategy

Class 10: External and Internal Analysis for Innovation Strategy

Class 11: Core Competencies and Strategic Intent

Class 12: Choosing Innovation Projects: Quantitative Methods

Class 13: Choosing Innovation Projects: Qualitative Methods

Class 14: Collaboration Strategies: Going Solo vs. Collaborating

Class 15: Collaboration Strategies: Types of Arrangements

Class 16: Collaboration Strategies: Choice and Monitoring

Class 17: Protecting Innovation: Appropriability and Legal Mechanisms

Class 18: Strategic Intellectual Property Choices

Class 19: Open Innovation: A New Innovation Paradigm

Class 20: Open Innovation: Governance Structures

Class 21: Innovation Through Tradition: Pros and Cons

Class 22: Innovation Through Tradition: the Process

Module 3: Implementing an Innovation Strategy

Class 23: Organizing for Innovation: The Impact of Size and Structure

Class 24: Designing the Innovative Firm: Ambidexterity and Modularity

Class 25: The New Product Development Process

Class 26: Tools for New Product Development Excellence

Class 27: Constructing Innovation Teams

Class 28: Managing Innovation Teams

Class 29: Bringing Innovation to Market: Timing

Class 30: Bringing Innovation to Market: Pricing, Distribution, and Marketing

INTERACTIVE TEACHING ACTIVITIES (TEL-DI)

Interactive Teaching Activities (TEL-DI) consist, for each ECTS credit, of 2 hours delivered synchronously via the Class platform. These sessions are conducted by the instructor, often with the support of a subject-specific tutor, and are dedicated to one or more of the following types of activities:

Live sessions, during which the instructor guides applied activities, encouraging critical thinking and direct engagement with students through real-time questions and collaborative discussions; Interactive webinars, enriched with polls and live questions, aimed at fostering active participation and co-construction of knowledge; Group work and real-time discussions, organized through collaborative tools such as breakout rooms, to develop problem-solving strategies and teamwork skills; Collective virtual labs, in which the instructor leads experiments, hands-on activities, or case study analysis, turning learning into a concrete and participatory experience.
These activities may also be supported by asynchronous interaction tools, such as:

forums; wikis; quizzes;

RECOMMENDED TEXTS

Schilling, Melissa. Strategic Management of Technological Innovation. Available from: Bookshelf, (7th Edition). McGraw-Hill Higher Education (International), 2022. Available in the university’s online
library: https://lms.pegaso.multiversity.click/biblioteca

MODE OF LEARNING VERIFICATION

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The final exam can be taken either in written or oral form. The oral exam consists of an interview with the examination board focusing on the course content. The written exam consists of a test composed of 31 multiple-choice questions. For each question, students must select one correct answer from four options. Only one answer is correct, and no penalties are applied for incorrect or unanswered questions. A perfect score (31/31 correct answers) will result in the award of cum laude (honors).
In addition to the final exam, the course includes synchronous interactive teaching activities and intermediate assessments, which allow students to monitor their learning through ongoing evaluation and reinforcement of knowledge.
Participation in synchronous interactive activities may result in a bonus of up to 2 points on the final exam grade. This bonus is awarded based on the quality of participation and the results of the intermediate assessments.
To be eligible for the intermediate assessments, students must attend at least 50% of each hour of synchronous interactive teaching.
The intermediate assessments may consist of end-of-lesson quizzes or the submission of a written assignment. A quiz is considered passed if the student answers at least 80% of the questions correctly. In the case of written assignments, the decision on whether the work qualifies for a bonus is made by the course instructor.
The bonus points awarded for the intermediate assessments are added to the final exam grade only if the exam is passed with a minimum score of 18/30, and they may contribute to the award of cum laude.
The described assessment methods are designed to evaluate the level of understanding of theoretical concepts and the ability to apply them, as well as to assess students' competence and independent judgment. Communication skills and learning ability will also be assessed through direct interaction during the course.

FORMATIVE OBJECTIVES

This course delves into the strategic management of innovation and R&D processes, a critical capability for firms navigating the complexities of today’s global economy. In a landscape characterized by rapid technological advancements and intense competition, the ability to innovate effectively is no longer a luxury but a necessity for survival and growth. The course provides a comprehensive exploration of the innovation process, examining the dynamics of technological change, the strategic choices involved in pursuing innovation, and the organizational challenges of implementing innovation strategies. It emphasizes the importance of understanding both the external environment, including industry evolution and competitive dynamics, and the internal capabilities of the firm, such as core competencies and strategic intent, in shaping successful innovation outcomes. Furthermore, the course addresses the crucial aspects of managing research and development activities, from fostering creativity and collaboration to protecting intellectual property and bringing innovations to market.

Building on this foundation, the primary teaching objective of this course is to equip students with the knowledge and skills necessary to become effective managers of innovation. Students will develop a deep understanding of the key concepts, frameworks, and tools used to analyze, formulate, and implement innovation strategies. Specifically, the course aims to enable students to critically assess the sources and types of innovation, understand the patterns of technological evolution, and evaluate the strategic implications of innovation for firms and industries. Moreover, it seeks to develop students’ ability to make informed decisions regarding innovation project selection, collaboration strategies, intellectual property protection, and organizational design for innovation. Ultimately, the course prepares students to contribute to and lead innovation initiatives within organizations, fostering their capacity to drive sustainable competitive advantage through strategic innovation management.

EXPECTED LEARNING OUTCOMES

Knowledge and comprehension skills Students will develop a robust understanding of the core concepts, theories, and frameworks that underpin the strategic management of innovation and R&D. This includes comprehending the dynamics of technological change, the diverse sources and types of innovation, and the strategic importance of innovation for firms' competitive success. Students will also gain a solid understanding of how these factors interact to shape innovation processes within organizations and industries. Ability to apply knowledge and understanding Students will be able to apply their knowledge of innovation management to real-world scenarios and challenges. This involves utilizing relevant frameworks and tools to evaluate different innovation strategies, assess the potential outcomes of innovation decisions, and formulate actionable recommendations for managing innovation and R&D effectively. Autonomy of judgment Students will be able to think critically and independently about innovation management issues. This includes critically assessing information and data related to innovation, formulating well-reasoned arguments, and evaluating the implications of technological innovations. Students will also be able to exercise independent judgment in making complex strategic decisions related to innovation. Communication skills Students will enhance their communication skills, enabling them to articulate innovation management concepts and ideas effectively. This will help them present analyses and engage in discussions on innovation-related topics in both corporate and institutional contexts. Learning ability Students will develop their capacity for continuous learning and adaptation in the dynamic field of innovation management. This includes independently acquiring new knowledge and skills, utilizing various resources and learning strategies to deepen their understanding, and reflecting on their own learning process to identify areas for improvement.

DELIVERED DIDACTIC ACTIVITIES (TEL-DE)

The Didactic Delivery Activities consist, for each ECTS credit, of 5 video lectures, each lasting approximately 30 minutes. Each lecture is accompanied by:

a handout (PDF) supporting the video lecture, or a reference to specific chapters or sections of an e-book selected by the instructor from those freely available on the platform to students; a multiple-choice questionnaire for self-assessment of learning.

AGENDA

In the "Exam Dates" section on the course homepage, the exam dates for each academic year are provided.

The synchronous interactive teaching activities are scheduled on the platform in the "Class" section.

Student office hours are scheduled in the "Online Office Hours" section.

ATTENDANCE REQUIREMENT

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Students are required to attend at least 70% of the didactic delivery activities (70% of TEL-DE).

CONTACTS

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PREREQUISITES

Specific prerequisites are not required.