**Course description form (syllabus form) – for 1st and 2nd cycle studies**

**Innovation and Technology Management**

**Academic year 2024-2025 - Summer semester (March-April 2025)**

**A. General data**

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| **Name of the field** | | **Content** |
| Course title | | **Innovation and Technology Management** |
| Organizational unit: | | Faculty of Management |
| Organizational unit where the course is offered: | | Faculty of Management |
| Course ID | |  |
| Erasmus code / ISCED | |  |
| Course groups | |  |
| Period when the course is offered | | Summer semester |
| Short description | | The course provides an introduction to innovation and technology management, bringing together key theoretical concepts and real-life examples from around the world.  We will shed light on major questions related to innovation and technology, such as: How do innovation and technology advancements take place? Who are the innovators and what are the institutional contexts for innovation and technology development? What types of innovation are there? Why are some countries or regions more innovative and technologically advanced than others? What are Industry 4.0 and technological revolutions, what impact does technology adoption have on our lives?  We will zoom in on two of the main innovation actors: the firm and the Entrepreneurial University and explore their main characteristics. We will address key concepts related to technology transfer and commercialization of research, including the management of intellectual property rights (patenting and licensing). Then we will examine key technology management concepts, such as technology life cycles and technological paradigms, technological trajectories, and technological maturity/readiness levels (TRLs). |
| Type of course: | | Elective (lectures) |
| Full description | | **Lecture 1: Introduction to innovation and technology management** (definitions, importance of innovation and technology, main types of innovation) (1h30’)  **Lecture 2: Radical innovations and Industrial Revolutions** (innovation developments from the 1st to the 4th Industrial Revolutions; what is Industry 4.0 and why is it important; impact of technology adoption on jobs; long-term economic cycles) (1h30’)  **Lecture 3: Innovation models: Evolution over time and current challenges (**linear models, interactive models, networked models - National and Regional Innovation Systems, Triple/Quadruple/Quintuple Helix models, transition innovation models) (1h30’)  **Lecture 4: The innovating firm (part 1): Innovation and R&D** (Evolution of industrial R&D, Main characteristics of the innovating firm; Top R&D innovators;Non-R&D innovators) (1h30’)  **Lecture 5: The innovating firm (part 2): Factors influencing the firm’s innovation capacity** (Firm size, Firm-specific competencies and capabilities; Absorptive capacity; Competitive advantage) (1h30’)  **Lecture 6: The Entrepreneurial University (**What is an Entrepreneurial University?; The three University missions; University-Industry cooperation; Start-ups and spin-offs; Technology transfer and commercialization of academic research. Managing intellectual property rights (patenting and licensing) (1h30’)  **Lecture 7: Key technology management concepts** (Technology life cycle, Technological paradigms, Technological trajectories, Technology adoption curve, Technological maturity – technology readiness levels TRLs) (1h30’) |
| Prerequisites | Formal | Not applicable |
| Initial | Not applicable |
| Learning outcomes | | Upon successful completion of this course, students will acquire a unique blend of specialist knowledge and understanding of the socio-economic and institutional contexts in which innovation and technology are developed and implemented. Students will:   * Have a better understanding of key concepts, actors and processes in innovation and technology management. * Understand the dynamics of innovation and technology development and their contributions to economic growth, competitiveness, social and environmental objectives * Acquire the analytical skills to assess key factors influencing technology and innovation and use specific indicators for innovation and technology |
| ECTS credit allocation (and other scores) | | 2 |
| Assessment methods and assessment criteria | | Written assignments on topics based on the class lectures and individual study by the student.  Assessment criteria:   1. **Completeness:** The assignment provides a good coverage of the points suggested for analysis in the assignment brief and includes relevant aspects; correctly identifies limitations and addresses these points in a nuanced and well-articulated manner; 2. **Use of information sources:** The assignment uses of a wide range of information sources, including the class lectures and recommended readings, as well as academic and other literatures. It demonstrates good understanding and use of the literature in analyzing the assignment questions. Linkages between literature and assignment questions are clearly articulated and discussed; 3. **Critical analysis:** The assignment provides a critical discussion of the issues at play, good argumentation and pertinent conclusions; 4. **Clarity, concision, correctness:** The assignment provides clear, concise, well-structured answers, with no typographical or grammar errors; 5. **Referencing:** Correct and complete referencing in the text and in the reference list provided at the end of the assignment, with full references. 6. **Academic Honesty:** Appropriate citation of the work of others is required. Plagiarism will not be tolerated. A failing grade will be assigned to any paper not offering proper citations. All work submitted to meet course requirements is expected to be the student's own work.   The grading scheme that will be used for the assignments is indicated below. |
| Examination | | Graded credit (Written assignment) |
| Type of class | | Lectures |
| Sposób realizacji przedmiotu | | Online (zoom) |
| Language | | English |
| Bibliography | | Tidd, J. and Bessant, J. (2020), *Managing Innovation: Integrating Technological, Market and Organizational Change,* Wiley (7th edition).Dodgson, M. (2017), *Innovation Management: A Research Overview*, Routledge.Wright, M., Clarysse, B., Mustar, P. and Lockett, A. (2008), *Academic Entrepreneurship in Europe*, Edward Elgar Publishing |
| Internship as part of the course | | Not applicable |
| Coordinators | | Dr hab. Katarzyna Dziewanowska, prof. ucz. |
| Group instructors | | Dr Marina RANGA, Associate Professor of Innovation Management |
| Notes | | Not applicable |

**Grading scheme**

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| **Grade** | **Definition** |  |
| 5! | Excellent - outstanding performance | Worthy of retaining for reference.  All marking criteria fully met. |
| 5 | Very good - above the average standard, with only minor errors | All marking criteria met with only minor flaws. |
| 4.5 | Better than good - the average standard with some errors | Very good understanding and approach of assignment questions, broad range of relevant literature used, literature well interpreted and connected to the issues at play, convincing critical assessment, originality in analysis. |
| 4 | Good - generally sound work with number of errors | Good understanding and approach of assignment questions, relatively limited use of literature, good analysis and interpretation of the issues at play, with only some flaws, originality in analysis. |
| 3.5 | Satisfactory - fair but with significant shortcomings | Basic approach of assignment questions, limited use of literature, little critical assessment, some originality, marking criteria barely met. |
| 3 | Sufficient – performance meets the minimum criteria |
| 2 | Fail – some more work required before the credit can be awarded. The student has to resit the examination. | No understanding of basic concepts, poor use of literature, no critical assessment (only descriptive use of others’ opinions), flawed or incorrect arguments and conclusions. Inadequate in depth and range, serious misunderstandings, not applying lecture materials to arguments put forward, little originality. |

**B. Detailed data**

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| **Name of the field** | **Content** |
| Group instructors: | Dr Marina RANGA, Associate Professor of Innovation Management |
| Title |  |
| Type of class: | Online lectures (elective course) |
| Learning outcomes defined for didactic method used during the course |  |
| Assessment methods and assessment criteria for didactic method used during the course | Written assignment  See assessment criteria and grading scheme above |
| Examination for didactic method used during the course |  |
| Range of content |  |
| Didactic methods |  |
| Bibliography | See above |
| Group limit |  |
| Time span | Summer semester (March – April 2025) |
| Location | Warsaw |