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

**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: Who are the main actors? How do innovation and technology advancements take place? How many types of inovation are there? Why are some countries or regions more innovative and technologically-advanced than others? What can be done to accelerate the catching-up? What are Industry 4.0 and technological revolutions, what does that change in our lives? We will zoom in on major innovation actors, such as firms, universities, government authorities, and the civil society. First, we will look at important characteristics of the firm that influence its innovation capacity: size, research and technological capacity, specific competences and capabilities, absorptive capacity and competitive advantage. We will identify top R&D innovators and non-R&D innovators around the world and will look at specific indicators for innovation and technology performance. We will also look at concepts related to the technological capacity of innovating firms, such as technology life cycles, technological paradigms and trajectories, technology absorption curve and technology readiness levels (TRLs). Secondly, we will look at what makes universities important actors in innovation and technology development. What is an Entrepreneurial University? Why is it important to develop university-industry linkages, technology transfer and commercialization of academic research (spin-offs, patenting, licensing, etc)? Finally, we will examine some issues related to policy and governance of innovation and technology, e.g. who makes these policies, what policy tools are used, what is the governance process at national, regional and EU level?  |
| 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, innovation and technology performance around the world) (1h30’)**Lecture 2: Innovation models: Evolution over time and current challenges (**linear models, interactive models, networked models - National Innovation Systems, Regional Innovation Systems, Triple/Quadruple/Quintuple Helix models, transition innovation models) (1h30’)**Lecture 3: 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 4: 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 5: Key technology management concepts** (Technology life cycle, Technological paradigms, Technological trajectories, Technology adoption curve, Technological maturity – technology readiness levels TRLs) (1h30’)**Lecture 6: The Entrepreneurial University (**What is an Entrepreneurial University?; The three University missions; University-Industry links; Start-ups and spin-offs; Technology transfer and commercialization of academic research. Managing intellectual property rights (patenting and licensing) (1h30’)**Lecture 7: Innovation and technology policy issues: policy mixes, governance, indicators** (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
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| ECTS credit allocation (and other scores) |  2 |
| Assessment methods and assessment criteria | Written assignments on selected topics based on the class lectures and individual study by the student. Grading 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 |   |
| Method of implementation of the subject |  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 Liana 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. Liana Marina RANGA** |
| Title  | **Innovation and Technology Management** |
| Type of class: | Elective (online) |
| Learning outcomes defined for didactic method used during the course |   |
| Assessment methods and assessment criteria for didactic method used during the course |   |
| Examination for didactic method used during the course |  Written essay |
| Range of content |   |
| Didactic methods |   |
| Bibliography |  See above |
| Group limit  |   |
| Time span |  Summer semester 2024 |
| Location |  Warsaw |