**COURSE OF STUDY** *Business Strategies and Management*

**ACADEMIC YEAR** *2023-2024*

**ACADEMIC SUBJECT** *Production Cycles and Innovation*

| **General information** | |
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| Year of the course | II |
| Academic calendar (starting and ending date) | I semester (from 11/09/2023 to 22/12/2023) |
| Credits (CFU/ETCS): | 6 |
| SSD | SECS-P/13 |
| Language | Italian |
| Mode of attendance | Optional |

| **Professor/ Lecturer** | |
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| Name and Surname | Rosa Di Capua |
| E-mail | rosa.dicapua@uniba.it |
| Telephone | 3460273278 |
| Department and address | Ionian Department, Faculty of Economics, Lago Maggiore street corner with Ancona street |
| Virtual room | Microsoft Teams (code: c83anqf) |
| Office Hours (and modalities: e.g., by appointment, on line, etc.) | Tuesday and Thursday from 11:30 to 13:30 (presence and online mode) |

| **Work schedule** | | | |
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| **Hours** | | | |
| Total | Lectures | Hands-on (laboratory, workshops, working groups, seminars, field trips) | Out-of-class study hours/ Self-study hours |
| 150 | 48 | Within the 48 hours of frontal teaching, in-depth seminars, workshops and exercises are planned, which are to be understood as an integral part of the course. | 102 |
| **CFU/ETCS** | | | |
| 6 | 6 | | |

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| **Learning Objectives** | - Specialized knowledge relating to production processes, the use of raw materials in them and the new technologies available for improving the sustainability of production;<br>- Analysis of the current entrepreneurial possibilities linked to the technological trajectories;<br>- Understanding of the most current decision-making dynamics of production;<br>- Discussion of the role of the environmental variable in the processes of innovation and technological development. |
| **Course prerequisites** | SECS-P/13 Commodity Science |

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| **Teaching strategies** | • Frontal teaching (Main teaching method)<br>• Practical exercises<br>• Seminars |

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| | • Project work |
| **Expected learning outcomes in terms of** | |
| **Knowledge and understanding on:** | ○ The PRODUCTION CYCLES AND INNOVATION course aims to provide students with in-depth specialist knowledge about production processes, the use of raw materials in them and the new technologies that can be applied to improve production.<br>○ The course also offers students a broad view of current entrepreneurial possibilities linked to technological trajectories (such as innovative start-ups and green technologies). |
| **Applying knowledge and understanding on:** | ○ The course aims at the student's understanding of the most current production decision-making dynamics, at the ability to evaluate production or production process implementation and with a problem-solving approach to manage any difficulty in real management situations;<br>○ The course offers specialized knowledge related to the management of technologies and productions. |
| **Soft skills** | • Making informed judgments and choices<br>○ The student, having acquired the basic concepts and terminology, will be able to manage and evaluate a new present and potential technology;<br>○ The student will have detailed knowledge of all the most current models of production process present on the market.<br>• Communicating knowledge and understanding<br>○ The student, at the end of the course, will have acquired the technical language useful for facing and covering managerial positions;<br>○ The student will be able to provide advice on concrete issues, through the analysis of technologies and productions.<br>• Capacities to continue learning<br>○ The aim is to give the student an analytical technical-managerial capacity;<br>○ Finally, through the study of innovative topics, it offers students the acquired knowledge that can be used on the territory both for public administration and private companies. |
| **Syllabus** | |
| **Content knowledge** | • Technology. Production functions. Paradigms and technological trajectories. Theories of technological change. Industrial revolutions. Technology strategy and value chain.<br>• Invention and innovation. Types of innovation. Main dynamics of innovation and related models. Innovation as a process. The spread of innovation. Industry 4.0, Forms of technology transfer, Start-up, and Open Innovation.<br>• Management and organization of industrial production. Production processes: continuous, line, batch, and job shop. Lean manufacturing. Operations Management and Supply Chain Management. Flexible production systems. Computer-aided product design (CAD/CAE/CAM), production process planning (CAPP) and superior integration (CIM).<br>• Innovation and environmental regulation. Environmental authorization - IED directive. BREF/BAT (steel). AIA. The ILVA case: the current production cycle, the environmental problems of the current cycle and the possible innovations.<br>• Kyoto Protocol: greenhouse effect phenomenon and climate change. Current emission levels of greenhouse gases in Italy and the EU. The main greenhouse |

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| | gases and the sectors involved. The market for tradable emission permits. The principle of "cap and trade". Phase III of the ETS.<br>• Environmental management tools of voluntary production site: ISO 14001, EMAS. |
| **Texts and readings** | • Tecnologia e Produzione – E.Chiaccherini. 2012 CEDAM<br>• Tecnologia dei Cicli Produttivi – A. Morgante. 1992 Monduzzi Editore<br>• ARCESE G., FLAMMINI S., MARTUCCI O., (2013): "Dall'Innovazione alla Startup – l'esperienza d'imprenditori italiani in Italia e in California", McGraw-Hill, Milano. ISBN: 978-88-386-7407-5. (capitolo 1)<br>• Tecnologia Innovazione Operations – Grando, Verona, Vicari. 2010 EGEA<br>• Slides and handouts by the teacher |
| **Notes, additional materials** | |
| **Repository** | E-learning platform of the Jonian Department |

| **Assessment** | |
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| Assessment methods | • Exemptions and Project Work Evaluation;<br>• Oral interview. |
| Assessment criteria | • Knowledge and understanding<br>  ○ The student will have a broad vision of the current entrepreneurial possibilities linked to the technological trajectories<br>• Applying knowledge and understanding<br>  ○ The student will be able to evaluate current production technologies and identify the best technologies available for each production process.<br>• Autonomy of judgment<br>  ○ The student will be able to solve the problems related to the current production cycles and propose technological and innovative solutions from an environmental, economic and social point of view.<br>• Communicating knowledge and understanding<br>  ○ The student will acquire adequate managerial skills with the aim of providing advice to companies on the subject of production technologies.<br>• Communication skills<br>  ○ Acquisition of technical language useful for covering managerial roles.<br>• Capacities to continue learning<br>  ○ The student will acquire specialized skills in the field of technology and production management. |
| Final exam and grading criteria | The final grade is awarded out of thirty. The exam is passed when the grade is greater than or equal to 18. |
| **Further information** | |
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