

General information	
Academic subject	<b>Production cycles and innovation</b>
Degree course	Business Strategies and Management
Academic Year	2
European Credit Transfer and Accumulation System (ECTS)	6
Language	Italian
Academic calendar (starting and ending date)	I semester (from 12/09/2022 to 23/12/2022)
Attendance	Optional

Professor/ Lecturer	
Name and Surname	Rosa Di Capua
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Department and address	Ionian Department, Faculty of Economics, Lago Maggiore street corner with Ancona street
Virtual headquarters	Microsoft Teams (code: c83anqf)
Tutoring (time and day)	Tuesday and Thursday from 10:00 to 12:00 (presence and online mode)

Syllabus	
<b>Learning Objectives</b>	<ul style="list-style-type: none"> <li>- Specialized knowledge relating to production processes, the use of raw materials in them and the new technologies available for improving the sustainability of production;</li> <li>- Analysis of the current entrepreneurial possibilities linked to the technological trajectories;</li> <li>- Understanding of the most current decision-making dynamics of production;</li> <li>- Discussion of the role of the environmental variable in the processes of innovation and technological development.</li> </ul>
<b>Course prerequisites</b>	SECS-P/13 Commodity Science
<b>Contents</b>	<ul style="list-style-type: none"> <li>• Technology. Production functions. Paradigms and technological trajectories. Theories of technological change. Industrial revolutions. Technology strategy and value chain.</li> <li>• 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.</li> <li>• 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).</li> <li>• 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.</li> <li>• Kyoto Protocol: greenhouse effect phenomenon and climate change. Current emission levels of greenhouse gases in Italy and the EU. The main greenhouse gases and the sectors involved. The market for tradable emission permits. The principle of "cap and trade". Phase III of the ETS.</li> <li>• Environmental management tools of voluntary production site: ISO 14001, EMAS.</li> </ul>
<b>Books and bibliography</b>	• Tecnologia e Produzione – E.Chiaccherini. 2012 CEDAM

	<ul style="list-style-type: none"> <li>• Tecnologia dei Cicli Produttivi – A. Morgante. 1992 Monduzzi Editore</li> <li>• 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)</li> <li>• Tecnologia Innovazione Operations – Grando, Verona, Vicari. 2010 EGEA</li> <li>• Slides and handouts by the teacher</li> </ul>
<b>Additional materials</b>	

<b>Work schedule</b>			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
<b>Hours</b>			
150	40	8	102
<b>ECTS</b>			
6	5	1	
<b>Teaching strategy</b>		<ul style="list-style-type: none"> <li>• Frontal teaching (Main teaching method)</li> <li>• Practical exercises</li> <li>• Seminars</li> <li>• Project work</li> </ul>	
<b>Expected learning outcomes</b>			
<b>Knowledge and understanding on:</b>		<ul style="list-style-type: none"> <li>○ 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.</li> <li>○ The course also offers students a broad view of current entrepreneurial possibilities linked to technological trajectories (such as innovative start-ups and green technologies).</li> </ul>	
<b>Applying knowledge and understanding on:</b>		<ul style="list-style-type: none"> <li>○ 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;</li> <li>○ The course offers specialized knowledge related to the management of technologies and productions.</li> </ul>	
<b>Soft skills</b>		<ul style="list-style-type: none"> <li>• <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> <li>○ The student, having acquired the basic concepts and terminology, will be able to manage and evaluate a new present and potential technology;</li> <li>○ The student will have detailed knowledge of all the most current models of production process present on the market.</li> </ul> </li> <li>• <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ The student, at the end of the course, will have acquired the technical language useful for facing and covering managerial positions;</li> <li>○ The student will be able to provide advice on concrete issues, through the analysis of technologies and productions.</li> </ul> </li> <li>• <i>Capacities to continue learning</i> <ul style="list-style-type: none"> <li>○ The aim is to give the student an analytical technical-managerial</li> </ul> </li> </ul>	

	<p>capacity;</p> <ul style="list-style-type: none"> <li>○ 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.</li> </ul>
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<b>Assessment and feedback</b>	
Methods of assessment	<ul style="list-style-type: none"> <li>• Exemptions and Project Work Evaluation;</li> <li>• Oral interview.</li> </ul>
Evaluation criteria	<ul style="list-style-type: none"> <li>• <i>Knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ The student will have a broad vision of the current entrepreneurial possibilities linked to the technological trajectories</li> </ul> </li> <li>• <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ The student will be able to evaluate current production technologies and identify the best technologies available for each production process.</li> </ul> </li> <li>• <i>Autonomy of judgment</i> <ul style="list-style-type: none"> <li>○ 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.</li> </ul> </li> <li>• <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> <li>○ The student will acquire adequate managerial skills with the aim of providing advice to companies on the subject of production technologies.</li> </ul> </li> <li>• <i>Communication skills</i> <ul style="list-style-type: none"> <li>○ Acquisition of technical language useful for covering managerial roles.</li> </ul> </li> <li>• <i>Capacities to continue learning</i> <ul style="list-style-type: none"> <li>○ The student will acquire specialized skills in the field of technology and production management.</li> </ul> </li> </ul>
Criteria for assessment and attribution of the final mark	The final grade is awarded out of thirty. The exam is passed when the grade is greater than or equal to 18.
<b>Additional information</b>	