UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Ingegneria
ACADEMIC YEAR	2021/2022
MASTER'S DEGREE (MSC)	MANAGEMENT ENGINEERING (ONLINE)
SUBJECT	PRODUCT/PROCESS INNOVATION
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50368-Ingegneria gestionale
CODE	21675
SCIENTIFIC SECTOR(S)	ING-IND/16
HEAD PROFESSOR(S)	MICARI FABRIZIO Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	102
COURSE ACTIVITY (Hrs)	48
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	2
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**MICARI FABRIZIO** Tuesday 08:00 10:00 Studio del docente, Edificio 8, primo piano

DOCENTE: Prof. FABRIZIO MICARI

PREREQUISITES	Basic knowledge of economics for engineers and innovation management.
LEARNING OUTCOMES	Knowledge and understanding At the end of the course, the student will have acquired knowledge and methodologies for assessing the need for innovation in a manufacturing company. They will be able to identify the criticalities existing in the products and / or in the business processes and will possess the methodological tools to design a research intervention and / or pre-competitive development aimed at improving the competitive position of the company. Will know the general criteria of European, national and regional, in support of industrial research. Knowledge applicability and understanding. The student will be able to prepare pre-competitive research and / or development projects Autonomy of judgment The student will have acquired an analysis methodology capable of verifying the criticality of products and business processes and consequently to evaluate them innovation needs. They will also be able to critically evaluate which is the most suitable regulatory instrument for supporting research and development to pursue. Communication skills The student will be able to communicate and acquire a good grasp over the language relating to the problems of innovation and research. They will also be able to effectively support a discussion on the research project and development prepared with a hypothetical evaluator. Learning skills The student will be able to independently develop the research of the instrument legislation in support of the most suitable innovation for each specific case.
ASSESSMENT METHODS	The evaluation will take place through the presentation of a group project and through a written test with equal weight for evaluation purposes. The written test consists of 3 open-ended questions for which, in the time of 2 hours, the students must report on the main topics of the course, with particular reference to the topics of innovation in the manufacturing industry, of regulatory instruments a support for innovation, technology cycles and R&D funding. The open questions aim to assess the possession of skills and competences knowledge acquired during the course and also the skills of analysis and development of solutions related to the field of innovation. The test score, expressed out of thirty, evaluates the level of learning and the ability to apply the main tools provided by the course. The adopted scale is: excellent evaluation 30 - 30 cum laude, very good from 26 to 29, good from 22 to 25, sufficient from 18 to 21.
EDUCATIONAL OBJECTIVES	The course is aimed at giving the student a complex knowledge and methodologies for assessing the need for innovation in a manufacturing company, identifying the criticalities existing in the products and/or in the company processes. Furthermore the course aims to confer the methodological tools to design an intervention pre-competitive research and/or development aimed at improving the position competitiveness of the company, based on the general criteria of European policies, national and regional in support of industrial research.
TEACHING METHODS	Presentation of the Case Study Drafting of a preliminary research and development project. Written test
SUGGESTED BIBLIOGRAPHY	Melissa A. SCHILLING: “Gestione dell’Innovazione”, McGraw-Hill, 2005

SYLLABUS

Hrs	Frontal teaching
3	Innovation: concepts, phases and R&D
2	R&D function. Creativity development.
3	Innovation models. Technology life cycle and innovation diffusion.
2	Technology value: dimensions.
2	First movers, early followers, late entrants.
2	Projects portfolio
10	Project financing. European and Italian framework.

SYLLABUS

Hrs	Frontal teaching
6	Industrial research: rules, laws and procedures.
4	Research project costs.

Hrs	Practice
10	R&D projects analysis
10	Preparing an R&D project