# Economics of innovation and innovation policy

## Prof. Maria Luisa Mancusi; Prof. Gabriele Pellegrino

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The aim of the course is to explore some main topics linked to the economics of innovation and of technological development both from a microeconomic and a macroeconomic perspective.

The first part of the course will focus on the microeconomic aspects of innovation, with the objective of studying the factors which shape company innovation strategies. Following the introduction to the main concepts and characteristics of innovation, the reasons why the activities related to the production of new knowledge create appropriability problems and ensuing market failures will be discussed. The public policy instruments designed to alleviate the appropriability problem, the role and optimal design of property protection tools, with a focus on the patent system, will be examined. Moreover, the relationship between market structure and incentives for innovation and also the constraints and instruments for funding investment in Research and Development (R&D) will be analysed.

The second part of the course will focus firstly on the analysis of the relationship between innovation and growth from a macroeconomic perspective, with particular reference to the concept of sustainable growth and to the role which technological development may have in attaining this important objective. There will then be a detailed reflection upon very topical themes such as the impact and challenges resulting from phenomena such as globalisation, the ever-increasing adoption of labour-saving technologies, process automation and Artificial Intelligence. At the end of the course students will:

1) have a deep knowledge of and ability to understand innovation mechanisms, the spread of innovation and its impact on growth and development.

2) be able to apply the tools for analysing innovations also to real case studies.

3) have developed critical thinking skills on the use and impact of intellectual property.

4) be capable of assessing the strategic implications of innovation in different microeconomic and macroeconomic contexts.

5) have the ability to understand and critically discuss the opportunities and challenges linked to scientific and technological progress.

***COURSE CONTENT***

The course consists of the following parts:

first module: *Prof. Maria Luisa Mancusi*

1. Introduction to the economics and politics of innovation: definitions and measures
2. Intellectual property’s role, nature and protection tools
3. Innovation, competition and market structure
4. Funding of innovation and support policies

Second Module: Prof. Gabriele Pellegrino

1. Macroeconomic Implications:
   1. Innovation and growth
   2. Innovation and sustainability
   3. Innovation and globalisation
2. Automation and Artificial Intelligence (impacts and challenges)
3. Technology and employment
4. Technology and inequality

***READING LIST***

There is no recommended textbook for the course, but a selection of scientific articles and texts. The teaching and learning material will be made available on the course Blackboard page.

***TEACHING METHOD***

The course consists of frontal lectures which aim to provide a conceptual framework of the covered topics. There may also be seminars and speakers. In order to make learning easier for students, in addition to the development of the application of concepts and methods of analysis, attending students will be involved in the preparation and presentation of project work.

***ASSESSMENT METHOD AND CRITERIA***

The assessment consists of a written exam. Two partial tests may be taken (an interim one at the end of first Module and a final one at the end of the second Module) or a single test. Should the exam be taken in two parts, the final test may only be taken during the rounds of the first exam session and students will pass the exam only if they get at least an 18 mark in both tests. The final mark is the arithmetic mean of the marks of the two tests, possibly integrated by the project work assessment. The mark of the interim test may only be used once, even if the student decides to withdraw. The assessment criteria include: a) the theoretical knowledge gained by students, their understanding and the ability to infer the main implications; b) students’ ability to apply the theoretical knowledge to practice.

***NOTES AND PREREQUISITES***

Students are invited to visit the lecturer’s webpage and the course page for further and more up-to-date information, and possibly also for teaching support material.

In case the current Covid-19 health emergency does not allow frontal teaching, remote teaching and assessment will be carried out following procedures that will be promptly notified to students.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.