Policies for Innovation and Digital Economy

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

The course aims to propose the analysis of innovation ecosystems with special reference to digitisation processes. The analysis of the digital economy trends and the system of supporting policies will be the main object of the educational path.

The analysis offered starts from the theoretical assumptions of innovative processes (also considering the implications of *open innovation* processes) and policies, also taking into account the recent trends deriving from the *Industry 4.0* approach and the approach focused on sustainable development.

The course will also provide insights on the competitive dynamics of the digital economy sector (including references to the *open innovation* dimension) and on the measuring of innovative processes, both in order to understand the macroeconomic dimension, to measure its impact on company productivity and, finally, to introduce some useful technicalities when accessing public and private funds that finance innovation.

Finally, a large part of the course will address the analysis of policies, with a specific focus on the enabling technologies promoted and the technical tools used to support businesses, both to examine their characteristics and trends, and for the purpose to compete with proposed changes.

*Intended learning outcomes*

*Knowledge and understanding*

At the end of the course, students will be able to:

* Know the digital economy sector both from the point of view of theoretical analysis and the industrial sector (objective 1);
* Know the system of policies both in their theoretical assumptions and in their implementation (objective 2);
* Know the technological platforms on which the main digitalisation processes and related policies are implemented (objective 3);
* Know the market failures that lead to the proposition of policies (objective 4);

*Ability to apply knowledge and understanding*

At the end of the course, students will be able to:

* Analyse the digital economy sector in advanced economies, describe its macroeconomic dynamics and identify the system of actors and stakeholders (objective 5);
* Analyse economic policies for innovation and digitisation of advanced economies, identifying the main sources of information, the eligibility criteria of projects for policies and the support techniques proposed by the policies (objective 6);
* Model the main dynamics of evolution of the digital economy market by identifying the main existing trends (objective 7);
* Promote policy design actions for innovation and digitalisation, through an active modification of existing *policies* (objective 8).

The course aims to stimulate the student's ability to build autonomous analytical and planning skills with respect to the positioning of companies in the industrial sector of the digital economy and the collective process of adapting policies to the needs of companies in the sector. The assessment methods are meant to stimulate communication skills, through the creation of written policy briefs aimed at evaluating the effect of policies.

During the course, tools for business reasoning logic and written texts will also be provided for effective professional communication.

***COURSE CONTENT***

*INNOVATION POLICIES*

1. The concept of innovation in economic analysis: the concept of technical progress and the relationship between science, innovation, and technology
2. Market failures in the context of innovative processes and innovation policies: innovation systems and IPR schemes
3. Recent orientations of European, national, and regional policies for innovation: the scope of 4.0 policies and recent developments
4. Next Generation EU: European guidelines for digital transformation and sustainability

*DIGITAL ECONOMY*

1. The foundations of the digital economy in the economic paradigm: from consumer preferences to a new production function?
2. The digital ecosystem: business models, actors, and stakeholders
3. Digital as a product and process, and the data market
4. The digital transformation of the main reference *industries*: Fintech, Insurtech, Real Estate Tech and Industry 4.0

***READING LIST***

*INNOVATION POLICIES*

For points 1 and 2:

Fariselli, P., *Economia dell’innovazione*, 2014, Giappichelli

Point 1: Part I (Introduction) – II (selected chapters)

Point 2: Part IV-V (selected chapters)

For point 3:

Carlini, V., *Nuove politiche industriali per la trasformazione digitale delle imprese. Il Piano Nazionale Industria 4.0*, Economia Italiana, 2017, n.1-2-3, Minerva Editore

Timpano F. – Fiaschè M., T*he Italian approach to Industry 4.0: policy approach and managerial implications in a SMEs environment*, in **Gil-Lafuente,** Jaime**, Marino,** Domenico**, Morabito,** Francesco Carlo (Eds.), *Economy, Business and Uncertainty: New Ideas for a Euro-Mediterranean Industrial Policy*, Springer, Basel 2019 2019: 306-315

For points 3 and 4, the lecturer will suggest reports and official materials of European policies to be consulted and updated.

*DIGITAL ECONOMY*

ØVERBY AND AUDESTAD, Digital Economics (Chapters 1, 2 and 3)

<http://mx.nthu.edu.tw/~cshwang/data-economics/course-infoecon/INFE03-Infolaw/Overby=Digital%20Economics-2018.pdf>

Prior reading of this textbook is recommended

GOLDFARB AND TUCKER (2019), Digital Economics, Journal of Economic Theory <https://pubs.aeaweb.org/doi/pdfplus/10.1257/jel.20171452>

### B. MINTO (1985), The pyramid principle: logic in writing and thinking (excerpts)

<https://www.academia.edu/38589009/Barbara_Minto>

***TEACHING METHOD***

The course will include a variety of methods:

1. Frontal lectures;
2. Thematic seminars;
3. Classroom simulations and homework.

The course will encourage significant interaction between teachers and students.

***ASSESSMENT METHOD AND CRITERIA***

The exam consists of two types of *homework* (*policy briefs*) during the year and a written test.

1. *Homework Policies for innovation: analysis of a policy, its impacts and opportunities for modification – Group work: 15% of the overall mark*;
2. *Homework Digital economy: analysis of a business and/or a process for which transformation strategies deriving from the introduction of new digital technologies are hypothesised – Group work: 15% of the overall mark*;
3. Written test: Two questions for each module to be chosen from four available questions per module.

The *homework* has a mainly practical and operational purpose, and aims to promote the students’ familiarity with the operational aspects of the description of the digital economy and of the implementation of public innovation policies. The written test assesses basic and theoretical skills, knowledge of taxonomies and completes the assessment of competences relating to the aspects of description of the industrial sector and the design of public policies.

***NOTES AND PREREQUISITES***

The courses of Microeconomics, Macroeconomics and Economic Policy of the three-year degrees in business and economic subjects are useful prerequisites for attending the course.

Information on office hours available on the teacher's personal page at <http://docenti.unicatt.it/>.