

Academic Year: ( 2017 / 2018 )

Review date: 09-05-2017

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: ASIMAKOPOULOS , GRIGORIOS

Type: Compulsory ECTS Credits : 3.0

Year : 4 Semester : 2

## OBJECTIVES

This course aims at providing the students with concepts and tools for understanding how firms can build sustainable competitive advantages and superior performance from biomedical technologies. Consequently, the students will acquire the following competences:

- They will understand the role of managers and the main functional areas of the firm
- They will understand the causes and origins of competitive advantage and value creation
- They will be able to rigorously analyze the biomedical industry and its main characteristics
- They will understand the importance of innovation and technology for competitive success, and the basic concepts of innovation management, focusing on the role of Intellectual Property Rights (IPR)
- They will understand how IPR law contributes to adequately protect and exploit of innovations in the market

## DESCRIPTION OF CONTENTS: PROGRAMME

1. Nature of the firm and the role of strategy
  - 1.1 The nature of the firm and the role of managers
  - 1.2 The role of strategy: creating and sustaining competitive advantage
  - 1.3 The nature and sources of business opportunities: the role of strategic analysis
  - 1.4 Business models: concept, components and applications
  - 1.5 Business models in the biomedical industry
2. Formulating and Implementing Technological Innovation Strategy
  - 2.1 Sources of Innovation
  - 2.2 Types and Patterns of Innovation
  - 2.3 Standards Battles and Design Dominance
  - 2.4 Timing of Entry
  - 2.5 Collaboration Strategies
  - 2.6 Managing the New Product Development Process
  - 2.7 Measuring Innovation success: a quantitative approach with applications in the biomedical industry
3. Intellectual property rights and technology exploitation
  - 3.1 Intellectual property rights in innovation systems
  - 3.2 Intellectual property management in biotechnology
  - 3.3 Protecting Innovation
  - 3.4 Principles of IPR law (national, European, international)
  - 3.5 Protecting Innovation: IPRs and the protection of biomedical technologies

## LEARNING ACTIVITIES AND METHODOLOGY

The students will develop the competences aimed for this course by means of three main learning activities:

Theoretical lectures, which will consist in systematic explanations of the main concepts and analytical frameworks underlying the different topics covered along the course. Students will be given the appropriate bibliographic references in advance, so that they can study and prepare for each session.

Practical sessions, during which students will analyze real-life case studies applying the contents previously explained in the theoretical lectures. Students will prepare the case studies and submit their analysis in writing before the session, when they will be discussed under the teacher's supervision and

guidance. Active participation is expected from the students.

End-of-term Project (teamwork): The students will develop a business plan for a biomedical startup, in which they will apply the course contents to an original business project.

#### ASSESSMENT SYSTEM

The competences acquired by the students will be assessed as follows:

End-of-term written exam: 60%

Written assignments (case studies): 20%

Final Project (business plan): 20%

<b>% end-of-term-examination:</b>	60
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	40

#### BASIC BIBLIOGRAPHY

- Castle, D. The Role of Intellectual Property Rights in Biotechnology Innovation, Edward Elgar, 2009
- Grant, R. M. Contemporary strategy analysis: Text and cases edition, Wiley & Sons, 2016
- Schilling, M. A. Strategic Management of Technological Innovation. , McGraw-Hill Education, 2012