

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Engineering		
ACADEMIC UNIT	Department of Financial and Management Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΓΕ0126	SEMESTER	7 th
COURSE TITLE	Technology and Innovation Management		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	CREDITS
		3	5
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	General Background		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	no		
COURSE WEBSITE (URL)	http://www.fme.aegean.gr/en/c/technology-and-innovation-management		

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i>
<p>Upon completion of the course, students will be able to:</p> <ul style="list-style-type: none"> • Understand the concepts of invention, innovation, technology, research, technological development, and industry life cycle; • Analyze and interpret different strategies for innovation and the management processes related to each of them; • Understand how to better integrate the dimension of technology in their pursuit of commercial success. • Better identify the technological needs and requirements of an enterprise as an important factor for its development • Evaluate the means of accessing technology solutions.

- Apply tools and techniques for selecting technology programs and investing in new technologies.
- Implement tools and techniques for the organization and completion of a technology transfer process,
- Understand the problems that arise in collaboration agreements among the various stakeholders

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology

Adapting to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility and sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

.....

Others...

.....

Search for, analysis and synthesis of data and information, with the use of the necessary technology

Decision-making

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of free, creative and inductive thinking

(3) SYLLABUS

Successful innovation in new products, services and processes is becoming increasingly important in achieving competitive advantage. Companies that innovate grow faster, have higher productivity and are more profitable than those that do not innovate. Innovation, however, is a risky business, as many new technologies fail to be converted into new products and services for consumption.

The course begins by defining some basic concepts: what is innovation, what is research and development and why they are important for modern businesses. Then, it focuses on the notion of technology life cycle and how it relates to the

life cycle of products and markets associated with a technology. Through practical examples and case studies, students can discover ways in which the positioning, tactics, and procedures used by firms can influence the development and diffusion of an innovation.

Students can explore additional ways in which businesses can appropriate and exploit the benefits of an innovation. By the end of the course, students will have a better understanding of key issues in technology management and innovation, as well as of the skills required for their successful implementation at a strategic and operational level.

1. Introduction - Scope of the course and method of study
2. Basic concepts and key terms
3. The evolution of technology and markets: Technology cycle and market cycle
4. Exploiting Technology for Competitive Advantage: The role of complementary assets
5. Appropriating technology (appropriability)
6. Technological standards and their economic importance
7. Technology, Innovation, and Strategy
8. Research and Development & Choosing among alternative technology projects
9. Technology Transfer and Technological Cooperation
10. Organizational skills to develop innovative
11. Financing Innovation
12. Innovation in Greece and the innovative performance of Greek firms
13. Summary – Course wrap up

(4) TEACHING and LEARNING METHODS - EVALUATION

<p>DELIVERY <i>Face-to-face, Distance learning, etc.</i></p>	<p>Face-to-face. Teaching methods for this course are based on lectures and presentation / discussion of case studies. Active student participation is essential and helps students understand the basic concepts and tools of the course. Furthermore, the presentation of case studies from international business scene enables students to understand the complex processes that occur in business environments and contributes to the critical evaluation of the various methods and approaches proposed and implemented in the management of technology and innovation.</p>	
<p>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i></p>		
<p>TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i></p> <p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>	<p>Activity</p>	<p>Semester workload</p>
	<p>Lectures</p>	<p>39</p>
	<p>Project work</p>	<p>20</p>
	<p>Work assignment</p>	<p>20</p>
	<p>Study of bibliography</p>	<p>25</p>
	<p>Hours of non-directed study</p>	<p>30</p>
	<p>Interim exam</p>	<p>3</p>
	<p>Exams</p>	<p>3</p>
	<p></p>	<p></p>
<p>STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Language of evaluation: Greek</p> <ol style="list-style-type: none"> 1. A mandatory interim exam (30%) - Students from previous years are not required to participate in the interim exam. 2. An optional presentation - work assignment based on either (a) a case study of a real company (detailed instructions and methodology are given by the tutor) or (b) an academic case study suggested by the tutor (20%) 3. A final exam on all the material of the course (70% or 50%). 	
	<p>Course Total</p>	

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. Schilling, Melissa (2005) *Strategic Management of Technological Innovation*,

McGraw-Hill, Irwin.

2. White Margaret A., Bruton Garry D (2010), *Η Στρατηγική Διαχείριση της Τεχνολογίας και της Καινοτομίας*, Εκδόσεις ΚΡΙΤΙΚΗ (in Greek)

2. ΚΑΡΑΓΙΑΝΝΗΣ ΗΛΙΑΣ, ΜΠΑΚΟΥΡΟΣ ΙΩΑΝΝΗΣ, *Καινοτομία και Επιχειρηματικότητα*, Εκδόσεις ΣΟΦΙΑ. (in Greek)

3. Cabral, L. *Βιομηχανική Οργάνωση*, Εκδόσεις ΚΡΙΤΙΚΗ (Κεφ. 16 & 17) (in Greek)

B) Additional References:

1. Κομνηνός Νίκος, Κυργιαφίνη Λίνα, και Σεφερτζή Έλενα (επιμ) (2001) *Τεχνολογίες Ανάπτυξης Καινοτομίας*

σε Περιφέρειες και Συμπλέγματα Παραγωγής, Αθήνα: Εκδόσεις: Gutenberg.

2. Σπαής Γεώργιος (2007) *Εισαγωγή στη Διαχείριση Τεχνολογικών Καινοτομιών*, Αθήνα: Εκδόσεις ΚΡΙΤΙΚΗ.

3. Γεωργαντά Ζωή, (2003) *Επιχειρηματικότητα και Καινοτομίες*, Εκδόσεις ΑΝΙΚΟΥΛΑ.

4. Κονταράτος, Α. (2006) *Η Τέχνη της Δοίκησης της Επιστημονικής και Τεχνολογικής Έρευνας*, Αθήνα:

Εθνικό Ίδρυμα Ερευνών.

5. Afuan, A. (2003) *Innovation Management*, Oxford University Press.