

COURSE OUTLINE

TECHNOLOGY, INNOVATION AND ENTREPRENEURSHIP IN THE VALUE CHAIN OF FOREST ECOSYSTEMS

(1) GENERAL

SCHOOL	TECHNOLOGY		
DEPARTMENT	FORESTRY, WOOD SCIENCES & DESIGN		
LEVEL	POSTGRADUATE		
COURSE CODE	MB121	SEMESTER	2 nd
COURSE TITLE	TECHNOLOGY, INNOVATION AND ENTREPRENEURSHIP IN THE VALUE CHAIN OF FOREST ECOSYSTEMS		
ACTIVITIES		WEEKLY HOURS	ECTS
	Lectures	2	6
	TOTAL	2	6
TYPE OF COURSE	OBLIGATORY		
PREREQUISITES	NO		
LANGUAGE OF TEACHING AND EXAMINATION	GREEK		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO		
WEBPAGE COURSE (URL)	https://eclass.uth.gr/courses/FWSD_P_112/		

(2) LEARNING OUTCOMES

Learning Outcomes
<p>The purpose of the course is to develop the business perception and mentality of the students, cultivating the necessary skills to potentially create their own innovation-driven business venture, as well as developing innovative capacity in the emerging landscape of the bioeconomy and forest ecosystem value chain.</p> <p>Upon successful completion of the course, the student will be able to:</p> <ul style="list-style-type: none"> • Knowledge of the basic functions and planning of a business activity in the bioeconomy model. • Ability to identify and evaluate business and innovation "opportunities" in the bioeconomy model. • Understanding of economic and technological developments and their impact. • Development of capacities for the proper management of Technology and Innovation. • Ability to design new business ventures responding to the challenges of transitioning to the bioeconomy model. • Creation of a business plan for each venture. • Making decisions and formulating strategies for issues related to sustainable entrepreneurship and innovation, especially in the light of the bioeconomy model
General Skills
<p>Upon successful completion of the course, the student will be able to acquire general skills such as:</p> <ul style="list-style-type: none"> • Search, understand, collect, strategically analyze and process economic, environmental, social and technological data and information • Encouraging individual initiative, a sense of responsibility and commitment to creating a better future • Adaptation to new situations • Development of business perception and mentality • Sharpening the critical spirit • Demonstration of social, professional and ethical responsibility

- Promotion of free, creative and critical thinking.
- Working in a team environment

(3) COURSE CONTENT

In the theoretical part of the course the student is taught and learns about:

- **Course update** – Introduction to entrepreneurship and innovation and technology management. Technological change and economic development. Key concepts: Knowledge, technology, innovation and entrepreneurship. Industrial and technological revolutions, techno-economic paradigms and socio-technical systems. Innovation systems and innovation clusters.
- **Innovation.** Definitions of innovation – typologies. Sources of innovation. Innovation success factors. Innovation and technology strategy. Diffusion of innovation and determinants of technological change. Socio-technical transition: examples from the field of bioeconomy.
- **Innovation management.** Technology, innovation and competitive advantage. The innovation process - The management steps: design, implementation, evaluation and control. Development and management of fundamental competencies and skills for the development of innovations – Routines of innovative activity. "Open" innovation and technology partnerships and alliances.
- **Technology strategy and innovation: challenges and issues.** Technological change – the waves of technological change – processes of technological change. Basic definitions, the meaning, forms and typologies of technological strategy: (made/ bought/ internal/ external) – types for product technology: distinctive / basic / external. Technological and innovative strategic choices in the context of the bioeconomy.
- **Technology management.** Tools and activities of technology management: Identification / characterization (of technologies) – Selection and acquisition of technologies – Exploitation. Technology options and dependencies. Sources of information. Technology assessment. Sources and patterns of innovation – collaboration and networking strategies for innovation.
- **Introduction to entrepreneurship.** What is entrepreneurship. Forms and types of entrepreneurship. Incentives for entrepreneurship. The basic characteristics and abilities of the entrepreneur. The special characteristics of bio-enterprise.
- **The process of developing entrepreneurship.** Business opportunity. The business model. Building a business team. Vision, mission and values. The need for the feasibility study.
- **Business plan.** Creating business ventures and achieving competitive advantage. Detailed presentation of a complete business plan (importance, concept description, market analysis, supply, demand, prospects, competition, internal and external environment analysis).
- **Entrepreneurship and innovation.** The development of new products and services in the context of innovative entrepreneurship of the bioeconomy model. Forms of intellectual property protection. The particularities of businesses in the context of the bioeconomy.
- **The economics of entrepreneurship.** Modern sources of finance. Environmental financing (green bonds, carbon offsetting, etc.). Investment appraisal – financial analysis of investments. Global value chains and internationalization.
- **European and national innovation, entrepreneurship and environmental protection policy.** Entrepreneurship policies and support agencies. Characteristics and trends of entrepreneurship in Greece. Spatial layout – Technocities – Industrial areas and structures. Entrepreneurship in an international environment.
- **Integrated approach to entrepreneurship in the context of the bioeconomy.** Entrepreneurship and the natural environment – green entrepreneurship. Modern forms of entrepreneurship (social enterprises, start-ups). Business models and environmental protection (value chain certification, circular economy, green procurement contracts, etc.).

- **Presentation of the works by the students.**

Every one or two weeks assignments are given to practice topics related to the subject of the course, while the final (6th assignment) should be undertaken and prepared by the student (individually) until the end of the semester of the MSc.

The relevant directions are given, while rich material and instructions are posted in the corresponding E-class course.

The final assignment includes, in addition to paper and electronic submission, a public oral presentation on the chosen topic, on a set date (usually the 12th or 13th week of classes).

The presentation lasts 15 minutes and is followed by 5 minutes of questions from the students present.

The teacher intervenes - if necessary - for comments, observations, corrections.

Students are graded on the overall performance of their final paper: 70% on the content and editorial specifications and 30% on the preparation of the online presentation and its oral support.

These grades count for a total of 40% of the overall grade that students will receive after the final written theory exam.

(4) TEACHING AND LEARNING METHODS - EVALUATION

COURSE DELIVERY METHOD	In class and remotely	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none"> • Use of PCs, ppt slides, projector • Support Learning process through e-class electronic platform • Interactive Whiteboard • Eight (8) PCs in the Laboratory for student exercise in editing program questionnaires 	
MANAGEMENT OF TEACHING	Activity	Semester Workload
	Lectures	26
	Six (6) individual assignments related to the subject of the course	70
	Small individual practice tasks	10
	Independent Study	44
	Course Total (25 workload hours per credit unit)	150
STUDENT EVALUATION	<p>I. Written final exam (60%) including:</p> <ul style="list-style-type: none"> • Short answer questions from all the material in the book. • Solving exercises related to the subject of the course (e.g. pricing, advertising, sales, product life cycle). <p>II. Successful delivery of six (6) assignments and presentation of the individual final (6th) assignment (40%).</p>	

(5) RECOMMENDED-BIBLIOGRAPHY

<p>- <i>Suggested Bibliography:</i></p> <p>Birley S. and D.F. Muzyka (eds.). 2000. Mastering entrepreneurship.</p> <p>Deakins D. and M. Freel. 2007. Επιχειρηματικότητα. Εκδόσεις ΚΡΙΤΙΚΗ, Αθήνα.</p> <p>Osterwalder A. and Y. Pigneur. 2010. Business Model Generation: A Handbook for Visionaries, Game Changers and Challengers.</p> <p>Schilling M. 2005. Strategic Management of Technological Innovation.</p> <p>Southon M. and C. West. 2005. The Beermat Entrepreneur. Pearson Education, UK.</p> <p>Tiffany P., S.D. Peterson and C. Barrow. 2012. Business plans for dummies. John Wiley & Sons.</p> <p>White M. and G. Bruton. 2010. Η στρατηγική διαχείριση της τεχνολογίας και της καινοτομίας. Εκδόσεις ΚΡΙΤΙΚΗ, Αθήνα.</p> <p>Γεωργαντά Ζ. 2003. Επιχειρηματικότητα και Καινοτομίες: Το Management της επιχειρηματικής καινοτομίας. Θεσσαλονίκη: Ανικούλα, σελ. 59-61.</p> <p>Ινστιτούτο Επικοινωνίας. 2006. Καινοτομία και Ελληνικός Επιχειρηματικός Χώρος, Έρευνα. Πάντειο Πανεπιστήμιο & QED Εταιρία Ερευνών. Αθήνα.</p> <p>Κομνηνός Ν., Λ. Κυργιαφίνη και Ε. Σεφερτζή Έλενα (επιμ.). 2001. Τεχνολογίες Ανάπτυξης Καινοτομίας σε Περιφέρειες και Συμπλέγματα Παραγωγής. Εκδόσεις Gutenberg, Αθήνα.</p> <p>Ξανθάκης Μ. και Λ. Τσιούρη. 2001. Διαχείριση Τεχνολογίας και Venture Capital: Η περίπτωση της Ελλάδας, Εκδόσεις Παπαζήση.</p> <p>Παπαδάκης Β. 2007. Στρατηγική των επιχειρήσεων. Ελληνική και διεθνής εμπειρία, Τόμος α': Θεωρία, Τόμος β': Μελέτες περιπτώσεων. Εκδόσεις Μπέρος, Αθήνα.</p> <p>Ραφαηλίδης Α. και Ι. Τσελεκίδης. 2005. Τεχνολογία, Καινοτομία, Κοινωνία της γνώσης και Ελλάδα, στη συλλογή «Σύγχρονες προσεγγίσεις της Ελληνικής οικονομίας» (επιμ. Κόλλιας Χρ., Ναζάκης Χ., Χλέτσος Μ.). Εκδόσεις</p>
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Πατάκης.

Ξαής Γ. 2007. Εισαγωγή στη Διαχείριση Τεχνολογικών Καινοτομιών. Εκδόσεις ΚΡΙΤΙΚΗ, Αθήνα.

- *Related scientific journals:*

- *Competitiveness Review*
- *Entrepreneurship, Innovation and Change*
- *Entrepreneurship, Theory and Practice*
- *EuroMed Journal of Business*
- *Family Business Review*
- *International Journal of Business and Globalisation*
- *International Journal of Entrepreneurship*
- *International Journal of Entrepreneurship Development, Education and Training*
- *International Journal of Technological Innovation and Entrepreneurship*
- *Journal of Business Venturing*
- *Journal of Developmental Entrepreneurship*
- *Journal of Enterprising Culture*
- *Journal of Entrepreneurship and Innovation*
- *Journal of Entrepreneurship Education*
- *Journal of Private Enterprise*
- *MIT Sloan Management Review*
- *Small Business and Enterprise Development*
- *Strategic Management Journal*
- *The International Journal of Entrepreneurship and Innovation*
- *World Review of Entrepreneurship, Management and Sustainable Development*