



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
Α.ΔΙ.Π.
ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ & ΠΙΣΤΟΠΟΙΗΣΗΣ
ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΣΤΗΝ ΑΝΩΤΑΤΗ
ΕΚΠΑΙΔΕΥΣΗ

HELLENIC REPUBLIC
H.Q.A.
HELLENIC QUALITY ASSURANCE
AND ACCREDITATION AGENCY

ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ ΚΑΙ ΘΡΑΚΗΣ
ΜΟΝΑΔΑ ΔΙΑΣΦΑΛΙΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΕΙ ΑΜΘ

Quality Assurance in Higher Education Course Data Collection Form

ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ ΙΔΡΥΜΑ
ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ & ΘΡΑΚΗΣ
ΑΓΙΟΣ ΛΟΥΚΑΣ,
65404 ΚΑΒΑΛΑ

EASTERN MACEDONIA AND THRACE
INSTITUTE OF TECHNOLOGY
AGIOS LOUKAS
65404 KAVALA

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Technological Applications		
ACADEMIC UNIT	Department of Electrical Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΔΝ6	SEMESTER	4 th
COURSE TITLE	ENERGY ECONOMICS		
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	
Lectures	3	4,5	
<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 Knowledge		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	http://eclass.teikav.edu.gr/ED107/		

(2) LEARNING OUTCOMES**Learning outcomes**

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.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

This course examines energy issues that pertain to the environment. The objective is to apply economics to particular issues of energy markets, environmental impacts, investment in renewables, and other energy issues such as transportation and conservation. The economics behind a particular energy issue will be reviewed and then a discussion about a related article or case study will take place.

The main objective is to provide students with a sound understanding of:

How energy drives the global and local economy.

The challenges of transformation beyond the dominance of energy sector.

Climate change mitigation and adaptation to energy.

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	Project planning and management
Adapting to new situations	Respect for difference and multiculturalism
Decision-making	Respect for the natural environment
Working independently	Showing social, professional and ethical responsibility and sensitivity to gender issues
Team work	Criticism and self-criticism
Working in an international environment	Production of free, creative and inductive thinking
Working in an interdisciplinary environment
Production of new research ideas	Others...

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

Decision-making

Working independently

Team work

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

(3) SYLLABUS

1. Definitions, measure units and statistical sources for energy and its various forms.
2. The energy balance.
3. The diagram of energy flow and its equal form with the energy balance.
4. Empirical prediction method with the energy flow diagram.
5. Prediction of energy demand.
6. The analytical prediction method of energy demand.
7. The econometric prediction method for energy demand.
8. The relationship between energy demand and economic growth and substitution between energy products.
9. Long-lasting design of the energy system.
10. The design of mathematical programming model and connection with the energy flow diagram.
11. Integration of dynamic relations for the energy investments and dynamic progress of the energy technologies.
12. Introduction in competition economy in the energy markets.
13. Short-term, long-term and marginal cost of activity for the energy infrastructures.

14. Distinction between production and networks.
15. Energy prices and formation mechanisms.
16. Energy resources depletion and their impact in energy prices.
17. Energy price regulation and state interference.
18. Energy activity environmental impacts.
19. The economic problem of pollution in local-regional level.
20. The economic problem of climate change, the Kyoto treaty and its application.
21. The energy policy of the European Union and modern energy problems.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face to face (in the classroom)	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of slides, website of the course with supporting and auxiliary material, creation of asynchronous platform.	
TEACHING METHODS <i>The manner and methods of teaching are described in detail. 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. 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>	Activity	Semester workload
	<i>Lectures</i>	39
	<i>Laboratory practice</i>	-
		30
	<i>Independent study</i>	50
	<i>Course total</i>	119
	STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure 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 Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	Theoretical Course Written work (20%), final written examination (80%), that combines theoretical questions with critical ones as well as problems covering all the sections of the course.

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:
 - Related academic journals:
- Economic operation of power systems, Bakirtzis Anastasios G., Provider (publishers-it): Ziti Pelagia & Co., 1998, ISBN: 960-431-452-1*
- Financial Investment Analysis, Panagiotis Fotis, "Publications PROPOMPOS" KIMERIS K. THOMAS, 2014, ISBN: 978-618-5036-08-9*

