COURSE MODULE OUTLINE

General information

SCHOOL	Science and Technology		
PROGRAM COURSE	Engineering Project Management		
LEVEL OF STUDY	Postgraduate		
COURSE UNIT CODE	DXT 61	**Year of study**	1st
COURSE TITLE	Economics of Technical Projects		
INDEPENDENT TEACHING ACTIVITIES *in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHNG HOURS**	**CREDITS**
Weekly teaching hours * 30 weeks		18-19	20 ECTS
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4			
COURSE TYPE Compulsory, Optional, Optional mandatory	Compulsory		
PREREQUISITE COURSES:	No prerequisites		
LANGUAGE OF INSTRUCTION AND EXAMS:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	https://www.eap.gr/education/postgraduate/annual/construction-management/topics/#d61		

(2) LEARNING OUTCOMES

Learning Outcomes

The course learning outcomes, specific knowledge, skills, and competencies of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:

APPENDIX A

- *Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications Framework.*
- *Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and*

APPENDIX B

- *Guidelines for Writing Learning Outcomes*

Upon successful completion of DXT 61, students will be able to:

- ✓ Apply established methodologies for the economic evaluation of investments.

- ✓ Estimate over time the value (depreciation) of mechanical equipment in projects and evaluate replacement plans.
- ✓ Analyse the financial structure of enterprises and assess financial risks.
- ✓ Evaluate the economic feasibility of public projects and determine/evaluate sources of project financing.
- ✓ Analyse the structure of engineering projects in the context of the process of their effective management.
- ✓ Implement the scheduling of a project based on established methodologies and create the project schedule.
- ✓ Plan the allocation of production resources to the work of one or more projects.
- ✓ They analyze the cash flow of payments of a project taking into account the availability of capital resources.
- ✓ Select appropriate time acceleration solutions for a project.
- ✓ They monitor the progress of a project and evaluate solutions for its rescheduling.
- ✓ Propose and evaluate risk management measures during the construction or operation of projects.
- ✓ Implement the delivery and acceptance procedure of a project and propose a maintenance program for the project.
- ✓ Use project planning and management software.

General Competences

Taking into consideration the general competencies that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?

Search for, analysis and synthesis of data and information by the use of appropriate technologies,
Adapting to new situations
Decision-making
Individual/Independent work
Group/Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for diversity and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical thinking
Development of free, creative and inductive thinking
……
(Other…….citizenship, spiritual freedom, social awareness, altruism etc.) …….

Search for, analysis and synthesis of data and information by the use of appropriate technologies
Individual/Independent work
Project planning and management
Critical thinking
Development of free, creative and inductive thinking

(3) COURSE CONTENT

- ✓ Introduction to construction project economics.
- ✓ Fundamental economic principles.
- ✓ Methods of economic evaluation of investments.
- ✓ Depreciation of assets.

- ✓ Equipment replacement decisions. Financial business structure. Inflation and financial analysis. Financial risk management.
- ✓ Public projects economic evaluation. Financing project methods. Targets, project analysis. Activities and time management.
- ✓ Economic project management. Managing project risks and insurance. Control of project implementation. Delivery, consignment, and project maintenance.
- ✓ The role of programming in project management. Project time schedule programming. Resources programming. Economic project programming. Project progress control.

The key subjects of the course are:

- ✓ Economics of technical works
- ✓ Project design and estimation
- ✓ Timing and financial planning of projects

(4) TEACHING METHODS--ASSESSMENT

MODES OF DELIVERY *Face-to-face, in-class lecturing, distance teaching and distance learning etc.*	Distance education with five Group Counseling Meetings (OSS) during the academic year on weekends.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in teaching, Laboratory Education, Communication with students*	For the OSS, use is made of: - remote meetings tools (cisco WebEx), - presentation software (e.g. PowerPoint), - specialized software, free or student versions, relative to the subject of the course
COURSE DESIGN *Description of teaching techniques, practices and methods: Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of selfdirected study are given following the principles of the ECTS.*	

Activity/Method	***Annual workload***
5 OSS (* 4 hours)	20
Tutorials	8
Preparation of Assignments (5 assignments * 20 hours)	100
Examination	3
Individual study	420-440
Total	**551-571**

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other……etc.* *Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.*	Five (5) written assignments over the course of the academic term, the average grade of which makes up 30% of the final grade, on the condition that a passing grade is achieved in the final or repeat examinations. Final examinations, the grade of which makes up 70% of the final grade. Students must use specialized software for at least one of the aforementioned five written assignments. Certain software is accessible on the internet (student editions), while students may obtain other software through the 'Structural Technology and Applied Mechanics' Laboratory.

(5) SUGGESTED BIBLIOGRAPHY:

- Suggested bibliography:

- Volume A: Economics of Technical Projects, EAP, Patras 2003.
- Volume B΄: Design and Evaluation of Projects, EAP, Patras 2003.
- Volume C΄: Time and Financial Planning of Projects, EAP, Patras 2003.
- Myers, D. (2016). Construction economics: A new approach. Routledge.
- Fellows, R. F., & Liu, A. M. (2021). Research methods for construction. John Wiley & Sons.

- Related scientific journals:

- Journal of Management in Engineering
- Engineering, Construction and Architectural Management
- Automation in Construction