

COURSE MODULE OUTLINE

General information

SCHOOL	Science and Technology		
PROGRAM COURSE	Engineering Project Management		
LEVEL OF STUDY	Postgraduate		
COURSE UNIT CODE	DXT 51	Year of study	1 st
COURSE TITLE	Technique of Construction		
INDEPENDENT TEACHING ACTIVITIES <i>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</i>		WEEKLY TEACHING HOURS	CREDITS
Weekly teaching hours * 30 weeks		18-19	20 ECTS
<i>Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4</i>			
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/#d51		

(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 51, students will be able to:

- ✓ Evaluate the main parameters that determine the geometric elements of the layout, know the stages of designing a road project, the elements of technical works to be included in the design and elements of road pavement management systems.
- ✓ Know the general characteristics, types, design principles and construction methods of bridges.
- ✓ Organize the management of the analysis and design of dams, identify the stages of design, organize the management of the construction of a dam, and assess the qualifications for the commissioning of the design of a dam and carry out the necessary environmental restoration works more competently.
- ✓ Describe the course of subsoil surveying works; apply modern methods of surveying works and the means – methodology of carrying out monitoring measurements in engineering works.
- ✓ Propose solutions and measures for safe temporary and special auxiliary structures, implement basic principles of formwork construction in various structures and propose aesthetically acceptable solutions in modern prefabrication projects.
- ✓ Evaluate the importance of quality control of construction materials and recognize the potential and characteristics of industrialization.
- ✓ Determine the properties relating to the quality of materials used in most civil engineering structures, namely aggregates, steel, concrete, asphalt materials and masonry.
- ✓ They propose safe solutions for the construction and repair of certain civil engineering works using composite materials with a cement matrix and adhesive bonding of materials with adhesive substances.
- ✓ Evaluate the productivity of the most important construction machineries

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?

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

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

<ul style="list-style-type: none"> ✓ Subsoil definition and meaning. Modern surveying methods. Instrumentation and monitoring of projects. Temporary and auxiliary structures. Principles of construction projects. Prefabrication and Modular Construction. Quality control. Manufacturing. ✓ Aggregate materials. Bituminous materials. Concrete. Steel. Masonry. Composite materials. Bonding technology with adhesive materials. Equipment for a construction project. Dams. Bridges. Road works. <p>The key subjects of the course are:</p> <ul style="list-style-type: none"> ✓ Analysis and design of structures ✓ Principles of construction technology ✓ Construction materials and construction equipment
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(4) TEACHING METHODS--ASSESSMENT

MODES OF DELIVERY <i>Face-to-face, in-class lecturing, distance teaching and distance learning etc.</i>	Distance education with five Group Counseling Meetings (OSS) during the academic year on weekends.	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY <i>Use of ICT in teaching, Laboratory Education, Communication with students</i>	For the OSS, use is made of: <ul style="list-style-type: none"> - remote meetings tools (cisco webex), - presentation software (e.g. power point), - specialized software, free or student versions, relative to the subject of the course 	
COURSE DESIGN <i>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.</i> <i>The study hours for each learning activity as well as the hours of selfdirected study are given following the principles of the ECTS.</i>	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

<p>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS</p> <p><i>Detailed description of the evaluation procedures:</i></p> <p><i>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.</i></p> <p><i>Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.</i></p>	<p>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.</p>
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(5) SUGGESTED BIBLIOGRAPHY:

- Suggested bibliography:

- Volume A': Yannopoulos P, Theodorakopoulos D., Bousias E., Analysis and Design of Structures, EAP, Patras 2008.
- Volume B': Apostolopoulos Char., Bousias E., Tsakanika P., Fikiris I., Principles of Construction Technology, EAP, Patras 2003.
- Volume C': Koutroumanou E., Baldoukas A., Bousias E., Frantzis P., Building Materials and Equipment for the Construction of Technical Projects, EAP, Patras 2003.
- Chen, W. F., & Liew, J. R. (2002). The civil engineering handbook. Crc Press.
- Chudley, R., & Greeno, R. (2006). Building construction handbook. Routledge.

- Related Scientific Journals:

- Journal of Structural Engineering - ASCE
- Journal of Construction Engineering and Management
- Engineering Structures