

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	ENGINEERING		
<b>DEPARTMENT</b>	ENVIRONMENTAL ENGINEERING		
<b>LEVEL OF STUDIES</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	15EY5N	<b>SEMESTER</b>	5
<b>COURSE TITLE</b>	Technoeconomics		
<b>TEACHING ACTIVITIES</b>		<b>TEACHING HOURS PER WEEK</b>	<b>ECTS CREDITS</b>
<i>If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits.</i>		6	5
<i>Please, add lines if necessary. Teaching methods and organization of the course are described in section 4.</i>			
<b>COURSE TYPE</b>	SCIENTIFIC AREA		
<i>Background, General Knowledge, Scientific Area, Skill Development</i>			
<b>PREREQUISITES:</b>			
<b>TEACHING &amp; EXAMINATION LANGUAGE:</b>	GREEK		
<b>COURSE OFFERED TO ERASMUS STUDENTS:</b>	YES		
<b>COURSE URL:</b>	<a href="https://eclass.duth.gr/courses/TMC320/">https://eclass.duth.gr/courses/TMC320/</a>		

### 2. LEARNING OUTCOMES

<b>Learning Outcomes</b>																
<i>Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.</i>																
<p>Search, analysis and synthesis of data and information, using the necessary technologies</p> <ul style="list-style-type: none"> <li>- Adapting to new situations</li> <li>- Decision-making</li> <li>- Autonomous work</li> <li>- Working in an interdisciplinary environment</li> <li>- Project management</li> </ul>																
<b>General Skills</b>																
<i>Name the desirable general skills upon successful completion of the module</i>																
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- Decision-making
- Teamwork
- Generating new research ideas
- Generating new research ideas
- Respect for the natural environment
- Promotion of free, creative and deductive thinking

### 3. COURSE CONTENT

Financial functions are analysed. The principles of technical economics and the evaluation of investments with various indicators (NPV, IRR, BCR, PBP) are presented. Financial evaluation of investments. Sensitivity analysis. Estimation of depreciation. Principles of project scheduling. Examples of costing of projects according to public works tender articles are given.

### 4. LEARNING & TEACHING METHODS - EVALUATION

<b>TEACHING METHOD</b> <i>Face to face, Distance learning, etc.</i>	Face to face	
<b>USE OF INFORMATION &amp; COMMUNICATIONS TECHNOLOGY (ICT)</b> <i>Use of ICT in Teaching, in Laboratory Education, in Communication with students</i>	Use of ICT during teaching and communication with students.	
<b>TEACHING ORGANIZATION</b> <i>The ways and methods of teaching are described in detail. Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research &amp; analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc.</i>  <i>The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards.</i>	<b>Activity</b>	<b>Workload/semester</b>
	Lectures	80
	Design exercises	40
	Literature review	10
	Individual projects	20
	Project presentation	0
	Field trips	0
	Course total	<b>150</b>
<b>STUDENT EVALUATION</b> <i>Description of the evaluation process</i>  <i>Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam, Presentation in audience, Laboratory Report, Clinical examination of a patient, Artistic interpretation, Other/Others</i>  <i>Please indicate all relevant information about the course assessment and how students are informed</i>	Formative Final exams	

### 5. SUGGESTED BIBLIOGRAPHY

1. Βιβλίο [94644748]: ΕΙΣΑΓΩΓΗ ΣΤΗ ΧΡΗΜΑΤΟΟΙΚΟΝΟΜΙΚΗ, ΣΥΛΛΟΓΙΚΟ (Επιμέλεια: ΚΩΝΣΤΑΝΤΙΝΟΣ ΖΟΠΟΥΝΙΔΗΣ)
2. Βιβλίο [102072827]: ΔΙΑΧΕΙΡΙΣΗ ΕΡΓΩΝ, ΒΑΓΙΩΝΑ ΔΗΜΗΤΡΑ Λεπτομέρειες
3. Βιβλίο [14924]: Διαχείριση έργων, Shtub Avraham
4. Βιβλίο [94645605]: Σχεδιασμός και οικονομική μελέτη εγκαταστάσεων για μηχανικούς, 5η Βελτιωμένη Έκδοση, Peters Max, Timmerhaus Klaus D., West Ronald E. (Επιστ. επιμέλεια: Δημήτριος Μαρίνος-Κουρής, Κροκίδα Μαγδαληνή, Ζαχαρίας Μαρούλης) Λεπτομέρειες

5. Βιβλίο [68369862]: Προγραμματισμός και Οργάνωση των Έργων, 2η Έκδοση, Πολύζος Σεραφείμ Λεπτομέρειες
6. Βιβλίο [77119534]: ΔΙΟΙΚΗΣΗ ΕΡΓΩΝ: Η ΔΙΑΔΙΚΑΣΙΑ ΔΙΟΙΚΗΣΗΣ, ERIK W. LARSON, CLIFFORD F. GRAY Λεπτομέρειες
7. Βιβλίο [77109652]: Διοίκηση και διαχείριση των έργων, Πολύζος Σεραφείμ Λεπτομέρειες

## ANNEX OF THE COURSE OUTLINE

### Alternative ways of examining a course in emergency situations

<b>Teacher (full name):</b>	Dimitrios Komilis
<b>Contact details:</b>	<a href="mailto:dkomilis@env.duth.gr">dkomilis@env.duth.gr</a>
<b>Supervisors: (1)</b>	YES
<b>Evaluation methods: (2)</b>	Exams by distance. Laboratory exercises presented as recorded videos. Laboratory reports submitted electronically.
<b>Implementation Instructions: (3)</b>	<p>The examination in the course will be initiated with the entrance of all students into the platform and then a multiple choice test will be realized via eclass.</p> <p>The test will be performed using Microsoft Teams and E-class. The link will be sent to students via eclass exclusively to the institutional accounts of those who have registered in the course and have accepted the terms of distance education.</p> <p>Students will have to log into the examination room through their institutional account, otherwise they will not be able to participate.</p> <p>They will also take part in the examination with a camera which they will have it turned on during the whole examination. Before the start of the exam, students will demonstrate their ID card and face to the camera, so that they can be identified by the examiner.</p>

(1) Please write YES or NO

(2) Note down the evaluation methods used by the teacher, e.g.

- *written assignment* or/and exercises
- written or oral examination with distance learning methods, provided that the integrity and reliability of the examination are ensured.

(3) In the **Implementation Instructions** section, the teacher notes down clear instructions to the students:

a) in case of **written assignment and / or exercises**: the deadline (e.g. the last week of the semester), the means of submission, the grading system, the grade percentage of the assignment in the final grade and any other necessary information.

b) in case of **oral examination with distance learning methods**: the instructions for conducting the examination (e.g. in groups of X people), the way of administration of the questions to be answered, the distance learning platforms to be used, the technical means for the implementation of the examination (microphone, camera, word processor, internet connection, communication platform), the hyperlinks for the examination, the duration of the exam, the grading system, the percentage of the oral exam in the final grade, the ways in which the inviolability and reliability of the exam are ensured and any other necessary information.

c) in case of **written examination with distance learning methods**: the way of administration of the questions to be answered, the way of submitting the answers, the duration of the exam, the grading system, the percentage of the written exam of the exam in the final grade, the ways in which the integrity and reliability of the exam are ensured and any other necessary information.

There should be an attached list with the Student Registration Numbers only of students eligible to participate in the examination.