

COURSE OUTLINE

(1) GENERAL

SCHOOL	UNIVERSITY OF THESSALY		
ACADEMIC UNIT	DEPARTMENT OF CIVIL ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	UD0800	SEMESTER	10th
COURSE TITLE	Land Reclamation Works		
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
		4	6
<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, specialized general knowledge, skills development</i>	Specialization in general knowledge		
PREREQUISITE COURSES:	- Hydraulics - Groundwater Hydraulics - Soil Mechanics - Hydrology		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek, unless there are Erasmus students, in which case instruction is conducted in English. Exams are offered in both languages.		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes <i>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.</i> <i>Consult Appendix A</i> - 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
<u>Knowledge</u> Upon completing the course, the student will have advanced knowledge that includes a critical understanding of theories and principles related to: - Design and operation of irrigation systems - Agricultural Engineering - Cost-effective design of projects and networks - Meeting agricultural water demands <u>Skills</u> Upon completing the course, the student will have advanced skills in solving complex problems related to: - The design of land reclamation projects - Calculation of water demands - Systems for water distribution, sizing of surface and pressurized networks, and sizing of headworks and distribution systems

Competencies

Upon completing the course, the student will be able to manage complex work plans and make decisions on land reclamation projects and technical issues. They will also be capable of working independently and collaboratively in the design of such projects. In particular, students will be able to:

Evaluate and assess technical, environmental, social, and economic factors during the design of land reclamation projects

Develop and propose optimal or innovative solutions based on the above evaluations

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?

<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Team work</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive</i>
<i>thinking Working in an interdisciplinary environment</i>	<i>.....</i>
<i>Production of new research ideas</i>	<i>Others...</i>
	<i>.....</i>

- Search, analysis, and synthesis of data and information using the necessary technologies
- Adaptation to new situations
- Decision-making
- Independent work
- Teamwork
- Project planning
- Respect for the natural environment

(3) SYLLABUS

No. of Week	Course Content
1	Introduction to Land Reclamation Works
2	Soil Moisture – Infiltration
3	Unsaturated – Saturated Flow
4	Evapotranspiration (Potential – Actual)
5	Irrigation Water Quality
6	Crop Water Requirements
7	Distribution System
8	Surface Networks
9	Pipes and Networks
10	Micro-irrigation Sprinklers
11	Network Optimization
12	Construction of Irrigation Works (Siphons, Culverts, Pump Stations)
13	Project Presentations
14	Project Presentations

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Lectures with PowerPoint, Notes, Exercises, Announcements on e-class	
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.</i> <i>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
	Lectures - Exercises	56 hours
	Study	28 hours
	Project	56 hours
	Examination	3 hours
	Study for Exams	7 hours
	Educational Visit	2 hours (deducted from lecture hours when conducted)
	Course total	150 hours
STUDENT PERFORMANCE EVALUATION		
Description of the evaluation procedure	Evaluation Language Greek or English	
<i>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</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	Evaluation Methods 20% Project: Education from the students of a land reclamation design project. Oral examination 80% Written Examination: Open books and notes. No audiovisual means. Short answer questions and problem solving	

(5) ATTACHED BIBLIOGRAPHY

-Suggested bibliography:

- Tsakiris, GP 2006. Hydraulic Projects: Design and Management, Volume II. Publications symmetry. Pages 766. (In Greek)
- GP P. Tsakiris, 1986, Lessons (In Greek)
- H. D. Tzimopoulos, 1982, Agricultural Hydraulics, AUTH (In Greek)
- GA Terzidis and Z. G. Papazafiriou, 1997, Agricultural Hydraulics, Ziti Publications, Thessaloniki(In Greek)
- Waller, P., & Yitayw, M. (2015). Irrigation and Drainage Engineering. Springer.
- AISenBrey et. Al, 1978, Design of Small Canal Structures, USbr, Denver, USA