COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Environment		
ACADEMIC UNIT	Department of Environment		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	240Y	SEMESTER	4
COURSE TITLE	Water Resources Management		

INDEPENDENT TEACHING ACTIVITIES *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*	WEEKLY TEACHING HOURS	CREDITS
Lectures	2	
Exercises	1	
TOTAL	3	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	specialised general knowledge, skills development
PREREQUISITE COURSES:	-
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (tutorials)
COURSE WEBSITE (URL)	https://www.env.aegean.gr/all_courses/water-resources-management/

(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*

- Understand the basic characteristics of water resources and the interaction processes between surface water and groundwater
- Estimate the potential effects of various management alternatives on the environment.
- Be able to approximately describe/ evaluate / attempt to improve water management approaches.

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

(3) SYLLABUS

Lectures:

1. Introduction, Global water issues – availability of water resources – sustainable management of water resources

2. Surface water and groundwater qualitative and quantitative interaction, 3. Water cycle, water budget, measurement of water cycle components
4. Groundwater storage capacity, calculations
5. Hydrologic systems and Flow calculations

6. Parameter estimation, the problem of scale

7. Pumping Wells, Characteristics, equations, applications

8. Effects of groundwater withdraw, examples, applications

9. EC2000/60 directive

10. Water availability and demand calculations, population projection to the future

11. Globalization of water, virtual water, water footprint

12. Management of water resources as a component of resource management

13. Summary and Applications

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Students have access to all lectures, lecture notes, assignments and related material through the MOODLE platform (https://aegeanmoodle.aegean.gr/)
TEACHING METHODS *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*	

Activity	*Semester workload*
Lectures	26
Tutorials	6
Study hours	72
Assignments	20
Exams	6
Course total	***130***

STUDENT PERFORMANCE EVALUATION *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.*	Language of evaluation: Greek methods of evaluation: Assignments Midterm exam Final Exam

(4) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Βουδούρης Κώστας Σ., «Εκμετάλλευση & Διαχείριση Υπογείου Νερού», (2022) Εκδόσεις Α. ΤΖΙΟΛΑ & ΥΙΟΙ Α.Ε.
- Στουρνάρας Γεώργιος, Νερό Περιβαλλοντική Διάσταση και Διαδρομή, (2014) Εκδόσεις Α. ΤΖΙΟΛΑ & ΥΙΟΙ Α.Ε.
-Isobel W. Heathcote,(1998) Integrated Watershed Management: Principles and Practice, John Wiley & Sons, Inc, ISBN 0-471-18338-5

- Related academic journals: