

COURSE OUTLINE

1. GENERAL

SCHOOL	School of Applied Technology		
DEPARTMENT	ENVIRONMENTAL ENGINEERING		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE UNIT CODE	GETA 228	SEMESTER OF STUDY	5 ^o
COURSE TITLE	INTRODUCTION TO THE ENVIRONMENTAL ENGINEERING SCIENCE		
COURSEWORK BREAKDOWN		TEACHING WEEKLY HOURS	ECTS Credits
Theory and laboratory		4 (2+2)	5
COURSE UNIT TYPE	Compulsory Unit		
PREREQUISITES :	No requirements		
LANGUAGE OF INSTRUCTION/EXAMS:	Greek		
COURSE DELIVERED TO ERASMUS STUDENTS	NO		
MODULE WEB PAGE (URL)	http://eclass.teiwm.gr/courses/GETA228/		

2. LEARNING OUTCOMES

Learning Outcome		
<p>The course aims to provide necessary knowledge relevant to the science and profession of the geoenvironmental engineer, so that the students will be able to cope with relevant subjects and especially with:</p> <ol style="list-style-type: none"> 1. Identification of the geoenvironmental science and profession. 2. Professional development. 3. Engineering creative thinking. 4. Engineering problem solving and decision making. 		
<p>General Skills <i>Upon successful completion of the programme students will:</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><i>-have the basic theoretical and practical knowledge in the fields of the subject area of Geotechnology and Environmental Engineering</i></td> <td style="width: 50%; border: none;"><i>-have the basic theoretical and practical knowledge in the fields of the subject area of Geotechnology and Environmental Engineering</i></td> </tr> </table>	<i>-have the basic theoretical and practical knowledge in the fields of the subject area of Geotechnology and Environmental Engineering</i>	<i>-have the basic theoretical and practical knowledge in the fields of the subject area of Geotechnology and Environmental Engineering</i>
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<ul style="list-style-type: none"> • Independent Work • Teamwork • Work in a multidisciplinary environment • Design and project management • Respect the natural environment • Search, analyze and synthesize data and information, and the use of essential technologies 		

3. COURSE CONTENTS

- History of the development of the geoenvironmental science.
- Definition of the interaction between engineers in the technical works.
- Interconnection of the geoenvironmental engineer in the framework of the civil engineering projects.
- Learning and creative thinking in the engineering framework.
- Engineering approach to problem solving.
- Basic decision making elements.
- Communication between engineers.
- Communication of engineering results.
- Case studies.

4. TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	In classroom, face to face lectures and seminars.	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	<ul style="list-style-type: none"> • Lectures assisted by power point presentations and group comprehension exercises. Educational tours and excursions. • Contact between instructor and students via email. 	
TEACHING METHODS	<i>Method description</i>	<i>Semester Workload</i>
	Classroom lectures	60
	Laboratory exercises	35
	Independent and Directed Study	30
	Total work load hours of lesson	125
ASSESSMENT METHODS <i>Description of the evaluation process</i> <i>Public Presentation, Laboratory Work, Laboratory Examination - Interpretation, Language Assessment, Evaluation Methods, Formative or Concluding, Multiple Choice Test, Short-Answer questions, Test Development Questions, Troubleshooting, Written Work, Report / Essay, Oral Examination, Other.</i> <i>Referred to explicitly defined evaluation criteria and whether and which are accessible to students.</i>	<p>Formally written examination at the end of the semester on the theoretical background, oral presentations in classroom and assessment of laboratory exercises & skills on selected topics.</p> <p>Laboratory and / or Coursework: 40.00%, Formal examination at the end of the semester: 60.00%.</p>	

5. Proposed Literature / Bibliography

1. Paul Wright. 'Introduction to Engineering', Third Edition, John Wiley & Sons, 2002.
2. Eide A., Jenison R., Northup L., Mickelson S. 'Engineering Fundamentals and problem solving'. 6th edition, McGraw-Hill.
3. K. Reddy (2013): Evolution of geoenvironmental engineering. Environmental Geotechnics. Institution of Civil Engineers.
4. Hoyos, L.R., DeJong, J.T., McCartney, J.S., Puppala, A.J., Reddy, K.R., and Zekkos, D. (2015). "Environmental geotechnics in the U.S. Region: A brief overview." *Environmental Geotechnics* (DOI: 10.1680/envgeo.14.00024). Institution of Civil Engineers.
5. Environmental Geotechnics. International Technical Committee No 5, on environmental

geotechnics, International Society of Soil Mechanics and Geotechnical Engineering, ISSMGE.

6. Καββαδάς Μ., Πανταζίδου Μ. Στοιχεία Περιβαλλοντικής Γεωτεχνικής. Εκδόσεις ΕΜΠ, 2007. <http://users.ntua.gr/kavvadas/Books/books.htm>

7. Introduction to environmental geology. Edward Keller. Prentice Hall, 5th edition, 2011.

8. Sarsby R.W. Environmental Geotechnics. 2nd Edition. Institution of Civil Engineers, ICE, 2013.

9. Καρβούνης Σ., Γεωργακέλλος Δ. 2009. Διαχείριση του Περιβάλλοντος. Εκδόσεις ΑΘ. Σταμούλης. ISBN:960-351-480-2.

- **10.** Οδηγός Επαγγέλματος Μηχανικών Γεωτεχνολογίας & Περιβάλλοντος. Γραφείο Διασύνδεσης στο ΤΕΙ Δυτικής Μακεδονίας. Κύριος Ερευνητής: Βατάλης Κ. Επιστημονικός Υπεύθυνος: Τσικριτζής Λ. Κοζάνη 2007.