

## COURSE OUTLINE

### (1) General

<b>School:</b>	Social Sciences		
<b>Academic Unit:</b>	Geography		
<b>Level of studies</b>	Undergraduate		
<b>Course Code:</b>	GEO 212	<b>Semester:</b>	D
<b>Course Title:</b>	Environmental Geology		
<b>Independent Teaching Activities</b>	<b>Weekly Teaching Hours</b>	<b>Credits</b>	
Lecture		3	
		<b>Course total</b>	5
<b>Course Type:</b>	Required Elective		
<b>Prerequisite Courses:</b>	None		
<b>Language of Instruction and Examinations</b>	Greek		
<b>Is the course offered to Erasmus students:</b>	No		
<b>Course Website (Url):</b>	<a href="https://geography.aegean.gr/pps/index_en.php?content=0&amp;lesson=212">https://geography.aegean.gr/pps/index_en.php?content=0&amp;lesson=212</a>		

### (2) Learning Outcomes

#### Learning Outcomes

Upon successful completion of the course, the students will be able to:

- a) have a clear understanding of the natural processes occurring in the earth's environment, as well as the interaction between humans and the natural environment,
- b) become familiar with the process of evaluating earth materials in order to determine their potential use either as wealth-producing sources or as waste disposal sites,
- c) become familiar with the use of special techniques such as mapping, GIS and remote sensing for monitoring the interactions between humans and the natural environment,
- d) understand issues related to natural hazards and the implementation of both preventive and mitigation measures,
- e) understand environmental degradation problems and propose appropriate technologies for the rehabilitation of contaminated sites,
- f) become acquainted with literature searching for writing scientific papers, as well as with the procedure of writing scientific papers.

#### General Competences

1. Search for, analysis and synthesis of data and information, with the use of the necessary technology
2. Adapting to new situations
3. Decision-making
4. Team work
5. Working in an interdisciplinary environment
6. Project planning and management

7. Respect for the natural environment
8. Criticism and self-criticism
9. Production of free, creative and inductive thinking

### (3) Syllabus

The course “Environmental Geology” covers topics related to the interaction between Geo-environment and humans, while it aims to familiarize students with the use of geological information for minimizing the impacts, as well as maximizing the potential favorable conditions arising from the use of the natural environment. The course encompasses the necessary knowledge on issues that concern:

- natural materials and earth processes,
- soil and water resources as essential components of the natural environment, while providing information about the impact that both natural and anthropogenic factors have on them,
- the disposal of various types of waste in the environment and the environmental impacts of such actions,
- land use planning, geo-environmental mapping and site planning taking geo-environmental criteria into account,
- dangerous earth processes and natural hazards, such as earthquakes, landslides and floods,
- mineral resources and their extraction, with special emphasis on the impact of mining activities on the environment and, finally,
- energy resources (conventional and renewable) and their connection to the natural environment.

### (4) Teaching and Learning Methods - Evaluation

<b>Delivery:</b>	Face to face (Lectures - Exercises - Optional tests)	
<b>Use of Information and Communication Technology:</b>	Student contact electronically. Power point presentations, multimedia learning materials (e.g. videos, interactive webpages) and use of the e-class platform.	
<b>Teaching Methods:</b>	<b>Activity</b>	<b>Semester workload</b>
Lecture		39
Project		40
Non-supervised study		40
Performance evaluation/Exams		3
Laboratory practice		3
	<b>Course total&lt;</b>	<b>125</b>
<b>Student Performance Evaluation</b>	80% Written Exams (Theory - Exercises) - 20% Course Assignment	

### (5) Attached Bibliography

- Bennett M.R., Doyle P. (1998) *Environmental Geology: Geology and the Human Environment*, New York: J. Wiley.
- Keller E.A. (2010) *Environmental Geology*, 9th Edition, Cambridge: Pearson Publishing Ltd.
- Merritts D., Menking K., DeWet A. (2014) *Environmental Geology: An Earth Systems Approach*, 2nd Edition, San Francisco: W.H. Freeman & Co. Ltd.
- Montgomery C. (2013) *Environmental Geology*, 10th Edition, Boston: McGraw-Hill.
- Roger M. (2010) *Geological Methods in Mineral Exploration and Mining*, Basel: Springer International Publishing.
- Sharma H.D., Reddy K.R. (2004) *Geoenvironmental Engineering: site remediation, waste containment, and emerging waste management technologies*, New York: J. Wiley.
- Yong R.N., Mulligan C.N., Fukue M. (2006) *Geoenvironmental Sustainability*, Boca Raton: CRC Press.