

414. Environmental Geomorphology

Instructor: Galanopoulou Stavroula

1. GENERAL

FACULTY	PLANT SCIENCES		
SECTION	FORESTRY AND NATURAL ENVIRONMENT MANAGEMENT		
LEVEL OF STUDY	Undergraduate		
COURSE CODE	414	SEMESTER OF STUDY	4th
COURSE TITLE	ENVIRONMENTAL GEOMORPHOLOGY		
INDEPENDENT TEACHING ACTIVITIES		TEACHING WEEKS	CREDITS
Lectures		2	5
Laboratory exercises		2	
Total Course		4	
COURSE TYPE	SPECIAL BACKGROUND		
PREREQUISITE COURSES:	No		
LANGUAGE OF INSTRUCTION AND EXAMINATIONS:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	Relevant online location of the course in e-class		

2. LEARNING OUTCOMES

Learning Outcomes
<p>The subject of the course is environmental geomorphology.</p> <p>The aim of the course is the understanding of basic knowledge by students on the identification and mapping of the various types of landforms as well as the evaluation of natural and artificially changing (anthropogenic) geomorphological processes, which participate in the formation of the earth's relief and the natural environment, as well as the ability to assess the evolution over time of environmental-geomorphological changes caused by anthropogenic interventions (projects and activities). Emphasis is placed on learning the process of identifying, mapping and evaluating changes resulting from the construction and operation of projects and activities (anthropogenic interventions) with significant impacts on specific sectors of the Natural Environment and in particular, on the landforms and relief of water basins as well as coastal space, but also on geomorphological processes. Reference is made to specific examples of changes in landforms and geomorphological processes, from the construction and operation of: a. hydroelectric-irrigation dams & reservoirs, b. road works, c. mining activities (quarries, mines, mines), d. port works and e. mountain hydronomy and flood protection works.</p> <p>The objectives of the course are for students to acquire special knowledge, abilities, new skills and experiences to deal with subjects related to: - The mapping of geomorphological structures and specific geomorphological formations and processes, required for the rational management and protection of forest ecosystems, river and coastal zones and environmentally sensitive areas. -The limitation, prevention and treatment of extreme phenomena of soil erosion-deposition and mobility of soil masses - The assessment, evaluation and limitation of changes in landforms and changes in geomorphological processes, which are caused by anthropogenic interventions (projects and activities). - The mapping of the diachronic evolution of landforms and geomorphological processes as</p>

well as the interpretation of phenomena related to natural processes and anthropogenic interventions.

- The conduct of controls (inspections) as well as the organization of monitoring systems for environmental parameters (landforms, geomorphological processes).
- The development and operation of a control mechanism for compliance with environmental conditions related to landforms and geomorphological processes, in projects and activities implemented in the natural environment.
- The design, coordination and operation of the required technical measures and environmental protection works, related to landforms and geomorphological processes as well as the required equipment.
- The familiarization and ability to develop methods of assessment and assessment of environmental impacts with emphasis on landforms and geomorphological processes, from the construction and operation of projects and activities.

Upon successful completion of the course the student will be able to:

- Understand the methodology and ways of investigating the issues of Environmental Geomorphology.
- uses data processing methodologies related to environmental geomorphology for the preparation of forest, ecological and environmental studies,
- collaborates with his fellow students to create and present a framework plan of a study with objects of environmental geomorphology, which in the future in the course of his work as a Forester will be part of a study-plan for an ecological, environmental, managerial or other relevant study.

General Competencies

- Search, analyze and synthesize data and information, using the necessary technologies
- Autonomous work
- Teamwork
- Project planning and management
- Respect for the natural environment
- Adapting to new situations
- Decision-making
- Promoting free, creative and inductive thinking

3. COURSE CONTENT

The syllabus per week of the course - in theory and corresponding laboratory exercises - is as follows: Introduction to geomorphology and environmental geomorphology. Methods and techniques of geomorphological survey. Characteristics of landforms and their evolution. Landforms of river origin. Coastal landforms. Volcanic landforms. Karst landforms. Glacial - periglacial landforms. Characteristic landforms of mountain massifs. Aeolian landforms. Geomorphological processes and characteristic forms of various climatic zones (temperate, desert and tropical zone). Protected geomorphological formations - preserved monuments of nature-Meteora. Weathering, corrosion, stripping. Configuration and mobility of slopes and landforms. Movements of land masses. Landforms originating from or affected by anthropogenic activity, artificial landforms, hydrogeomorphological processes. Natural and artificial causes of river diversions. The impact of anthropogenic interventions on the dynamics of geomorphological processes, river basins and estuaries. Restoration of the balance of geomorphological processes. Measures for the protection of landforms and geomorphological processes. Environmental - geomorphological monitoring. Monitoring of the current state of the environment and landforms. Environmental monitoring systems.

4. TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY METHOD	In the hall, in the Laboratory, in the outdoor areas of AUA's facilities in Karpenisi and in selected forest locations.													
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of Powerpoint slides, communication with students via e-mail and meetings with students per person for the preparation of laboratory exercises.													
TEACHING ORGANIZATION	<table><tr><th><i>Activity</i></th><th><i>Semester Workload</i></th></tr><tr><td>Teaching</td><td>39</td></tr><tr><td>Laboratory exercises</td><td>30</td></tr><tr><td>Educational visits</td><td>8</td></tr><tr><td>Study personal</td><td>48</td></tr><tr><td>Total Course (25 hours of workload per credit)</td><td>125</td></tr></table>		<i>Activity</i>	<i>Semester Workload</i>	Teaching	39	Laboratory exercises	30	Educational visits	8	Study personal	48	Total Course (25 hours of workload per credit)	125
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STUDENT EVALUATION	I. Written final exam in the theory of the course. II. Written examination in the laboratory part of the course. The exam involves the development of equally graded development questions or solving exercises announced at the beginning of classes to students.													

5. RECOMMENDED-BIBLIOGRAPHY

- Suggested Bibliography:

Environment, Vavizos Giorgos and Mertzanis Aristides

Environmental Geotechnology, Vatalis Konstantinos, Manoliadis Odysseas, Desiniotis Ilias