COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Environment		
ACADEMIC UNIT	Department of Environment		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	202Y	SEMESTER	2
COURSE TITLE	Geology		

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	3	
Exercises		
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*	general background
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/geology/

(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*

Studens should be able to:

- Understand the geological methods and human insights by which knowledge of Earth has grown.
- Use analytical and logical reasoning and to develop a basic understanding of the system Earth.
- View Earth as a planet as an integrated system of physical, chemical, and biological processes attempting to attain dynamic equilibrium. Appreciate the unity of earth's materials and processes.
- Understand geologic time and the effects of slow rates of change. Be able to use geologic maps and construct Geologic Cross sections

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, *Project planning and management*

with the use of the necessary technology	*Respect for difference and multiculturalism*
Adapting to new situations	*Respect for the natural environment*
Decision-making	*Showing social, professional and ethical responsibility and*
Working independently	*sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*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. Course Introduction and Outline (The formation of the solar system and Earth, Internal Structure of the Earth, Earth Materials and Processes)
2. Plate tectonics (tectonic theories, magnetic field and paleomagnetism, Sea-Floor Spreading)
3. Plate tectonics (Types of Plate Boundaries, relation to earthquakes, volcanism and topography)
4. Earthquakes (Origin of Earthquakes, Types of Seismic Waves, Magnitude of Earthquakes, Earthquake Risk, Earthquake Damage)
5. Rocks and Minerals (Definitions, Atoms, Structure of Atoms, Crystal Structure, Composition of Minerals and rocks, Properties of Minerals)
6. Igneous Rocks and volcanoes (Kinds of Igneous Rock, Types of Magma, Origin of Basaltic, Andesitic and Granitic Magma, Magmatic Differentiation, Volcanoes and their relation to plate tectonics)
7. Weathering and sedimentary rocks (Physical and Chemical Weathering, Deposition, Common Sedimentary Environments, sedimentary rocks)
8. Metamorphic rocks and Deformation (Types of Metamorphism, Metamorphic faces, Metamorphism and Plate Tectonics, Stress and Strain, faults and folds)
9. Geologic Time (Relative and Absolute Age, Principles of Stratigraphy, The Geologic Column, Absolute Dating and Geologic Time Scale)
10. Topographic maps (Construction and usage of topographic maps, construction of cross-sections)
11. Geologic maps (Usage of maps, construction of cross-sections) 12. Geological evolution, effects
13. Introduction to the geology of Greece and of the island of Lesvos

Laboratory exercises:

1. Topographic maps
2. Construction of Topographic cross sections
3. Geologic maps
4. Construction of Geologic Cross sections

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	36
Tutorials	6
Study hours	72
Assignments	10
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:

-Δούτσος, Θ., (2000), Γεωλογία: Αρχές και Εφαρμογές, LEADER BOOKS A.E., ΑΘΗΝΑ
-Παπανικολάου Δημήτρης Ι.,Σίδερης Χρήστος Ι. (2007), Γεωλογία. Η επιστήμη της Γης, Σ. ΠΑΤΑΚΗΣ ΑΝΩΝΥΜΗ ΕΜΠΟΡΙΚΗ ΕΚΔΟΤΙΚΗ ΚΑΙ ΔΙΑΝΕΜΗΤΙΚΗ ΕΤΑΙΡΕΙΑ
- Παυλίδης Σπύρος Β., Παν-γαία (Παγγαία): Μια διαφορετική βιο-γεωλογική διαδρομή στον πλανήτη Γη, Leader Books, 2007
- John Grotzinger,Thomas H. Jordan, Frank Press, Reymond Siever, Understanding Earth (Fifth Edition), W.H. Freeman & Co, 2007

- Related academic journals: