COURSE OUTLINE

1. GENERAL

SCHOOL	ENVIRONMENT AND AGRICULTURAL ENGINEERING		
ACADEMIC UNIT	NATURAL RESOURCES AND AGRICULTURAL ENGINEERING		
LEVEL OF STUDIES	POSTGRADUATE		
COURSE CODE	**630021**	**SEMESTER**	**1st**
COURSE TITLE	PALEOENVIRONMENT – ENVIRONMENTAL MICROPALEONTOLOGY - PALEOBOTANICAL METHODS		

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	3
Essays		2
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).	3	5

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special Background Skills development
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	

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*

Students will have the ability to describe and comprehend marine ecological processes and functions.

Students should have acquired the basic knowledge and understanding of the paleoenvironment concept in coastal and pelagic marine ecosystems, as well as terrestrial ecosystems.

Students will be capable of comprehending the role of microorganisms in the geosphere-atmosphere-hydrosphere relationship.

Students will be able to study and apply sampling techniques in past and modern geoenvironments, determine depositional facies, and estimate the age of geological formations.

Students will be able to apply environmental assessment and monitoring methods based on the application of biotic indicators.

Students will have the ability to analyze and interpret scientific research data, apply analytical and critical thinking, and effectively practice oral communication and scientific text writing in the fields of Paleoenvironment, Environmental Micropaleontology and Paleobotanical Methods.

Upon successful completion of the course, students will acquire the basic principles of the evolution and expansion in geological time of plants

Students will get acquainted to the macro and micromorphology of fossil plant remains in order to

identify the various taxa

Students will be able to be able to process palaeobotanical databases, evaluate and combine scientific results in order to answer geo-environmental questions.

eGeneral 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	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and 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…*
	…….

Respect for the natural environment
Working in an interdisciplinary environment
Decision-making
Project planning and management
Production of new research ideas
Search for, analysis and synthesis of data and information, with the use of the necessary technology

3. SYLLABUS

Use of microfossils to detect and interpret changes in the environment over space and time, caused by natural factors or human activity. Applications of Micropaleontology in palaeoenvironmental / palaeooceanographic research, determining climate changes and sea level changes, assessing the environmental health of marine ecosystems, marine ecosystem quality assessment in Marine Strategy Framework Directive (MSFD). Ocean acidification and calcareous microorganisms. Global environmental changes in the paleobotanic record/evolution of terrestrial ecosystems. Mass extinctions/persistent populations/refugial populations. Natural and cultural landscape. Palynology: application to the study and interpretation of climatic and environmental variability.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to Face Usage of Lab equipment
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Powerpoint presentations Web applications
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
Project	50
Homework	39
Course total	***125***

STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure*	Language of evaluation: Greek (English for Erasmus students)

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.*	Written essay and oral examination on a chosen subject from a subjects list (65%), Short individual practice exercises that involve the application of methodologies for solving relevant problems (35%)

5. ATTACHED BIBLIOGRAPHY

Electronic sources and peer reviewed papers will be provided throughout the course.
- Related academic journals:
1) Palaeogeography, Palaeoclimatology, Palaeoecology
2) Marine Micropaleontology
3) Geobios
4) Journal of Micropalaeontology
5) Quaternary International
6) Quaternary Research
7) Sedimentology
8) Quaternary Science Reviews
9) Journal of Quaternary Science
10) Nature Communications, Geoscience, Scientific Reports
11) Ecological Indicators