COURSE OUTLINE

(1) GENERAL

SCHOOL	HUMANITIES		
ACADEMIC UNIT	DEPARTMENT OF MEDITERRANEAN STUDIES		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AYE-36	**SEMESTER**	8
COURSE TITLE	SELECTIVE ISSUES OF ARCHAEOMETRIC APPLICATIONS		
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 hrs and the total credits*		**WEEKLY TEACHING HRS**	**CREDITS**
		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*	Specialised general knowledge		
PREREQUISITE COURSES:	No		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	https://eclass.aegean.gr/courses/TMS237/		

(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*

With the successful completion of the course students should be able:
- to recognize and compare applications of natural sciences in cultural heritage,
- to synthesize a case study or special applications that consist of various techniques and plan a future project,
- to differentiate and classify archaeological results that are made from the use of specialized methods and techniques,
- to be able to understand on a theoretical basis the rationale of physical methods applied

to solve archaeological problems of e.g. dating, location, provenance, analysis, technology etc,
- to understand a variety of methodological approaches of new technologies and physical sciences applied to particular cultural heritage issues,
- to know the ways one particular archaeological problem can be solved (which method, which technique, under what conditions, care during the sampling, useful information extracted from ancient remains, and know the ways of solving an archaeological problem and evaluate its material, temporal and spatial evolution.

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, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas
Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking
……
Others…
…….

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Decision-making
Working in an interdisciplinary environment

(3) SYLLABUS

Case studies issues of applications are described. The problematics per each case is analysed. Combined knowledge from geoenvironment, archaeology, history and physical sciences is presented pinpointing the proper use of materials and methodology applied. Choice of appropriate materials for dating and provenance is discussed. Selected case studies of particular interest are chosen for further elaboration on a theoretical and applied level. Emphasis is given to understanding the procedures and for the promotion of knowledge via interactive methods of teaching. Detailed reporting of results from the application of physical methods in solving archaeological problems.
In particular:
1) Minoan culture & Santorini volcano eruption
2) BioArchaeology (DNA, stable isotopes, radioisotopes, Ice Man, ancient diet studies, etc)
3) Rock carvings/ rock art
4) Turin shroud
5) Examples of dating palaeolithic period (Olduvai gorge, caves at Petralona, Theopetra, Youra, Sarakinos, French caves)
6) Obsidian transportation in the Mediterranean (analyses, dating)
7) Ceramics analysis (provenance, trade)
8) The case of pyramidals in argolid (an interdisciplinary approach)
9) Archaeometrical applications in a standard archaeological excavation
10) Analysis in works of art prior to conservation (Raman & IR spectroscopy, Microscopy, XRF, chromatography etc.)
11) Scanning Electron Microscope & Polarised Light Microscope in archaeology

12) Authenticity in archaeology 13) The Antikithira Mechanism 14) Dating the fall of a meteorite in S. Germany 15) Trojan War: myth or reality? Dating the fact with archaeoastronomy 16) The archaeology of agriculture 17) Paleoclimatology and Astronomy 18) The contribution of archaeometry to the support of cultural tourism 19) mtDNA, oil and wine in Prehistory

(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY
Face-to-face, Distance learning, etc.</td><td>Face to face</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students</td><td>PowerPoint presentations</td></tr>
<tr><td>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 hrs for each learning activity are given as well as the hrs of non-directed study according to the principles of the ECTS</td><td><table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>39 hrs (1.56 ECTS)</td></tr>
<tr><td>Personal study</td><td>83 hrs (3.32 ECTS)</td></tr>
<tr><td>End of semester exam</td><td>3 hrs (0.12 ECTS)</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Course total</td><td>125 hrs (5 ECTS)</td></tr>
<tr><td></td><td></td></tr>
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<tr><td>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</td><td>Written or oral exams at the end of the semester</td></tr>
</table>

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.	

(5) ATTACHED BIBLIOGRAPHY

Greek language

Λυριτζής, Ι (1994) Τα πυραμιδοειδή της Αργολίδας. Εκδ Δελφική Ακαδημία, Αθήνα. (διατιθ. Από Καρδαμιτσα).

Λυριτζής, Ι (2005) Φυσικές Επιστήμες στην Αρχαιολογία. Εκδ. Τυπωθήτω-Γ.Δαρδανός.

Renfrew, C & Bahn, P (2001) Αρχαιολογία: Θεωρίες, μεθοδολογία και πρακτικές εφαρμογές. (μτφρ. Ι. Καραλή-Γιαννακοπούλου) Εκδ. Καρδαμιτσα.