COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF EDUCATION		
ACADEMIC UNIT	DEPARTMENT OF PRIMARY EDUCATION		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**ΔΕΕ808**	**SEMESTER**	**H (SPRING)**
COURSE TITLE	STEM education		

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, laboratory exercises	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*	Special background, specialised general knowledge, skills development.
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	http://ecourse.uoi.gr/course/view.php?id=1915

(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*

Level of learning outcomes

Understanding the concepts involved in STE[A]M (Science, Technology, Engineering, [Arts], Mathematics) education. Project Based Learning, critical thinking.

Descriptors

Knowledge and skills on solving authentic problems by using the STE[A]M approach. Especially the engineering cycle.

Learning Outcomes

- Understanding STE[A]M education.
- Designing educational scenarios based on STE[A]M education.
- Evaluating educational scenarios based on STE[A]M education.
- Creating educational scenarios based on STE[A]M education.

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

Project planning and management

Respect for difference and multiculturalism

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*	*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 independently
- Team work
- Working in an interdisciplinary environment
- 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

(3) SYLLABUS

STE[A]M (Science, Technology, Engineering, [Arts], Mathematics) education.
The course involves a theoretical, a laboratory part as well as homework submission.

(4) 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*	Use of ICT in teaching, laboratory education, communication with students.

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***
Teaching hours	22
Laboratory hours	30
Examination hours	3
Homework hours	25
Study hours	35
Other (Laboratory hours, software management)	10
Course total	**125**

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.*	Summative and conclusive evaluation, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, laboratory work.

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

Τζιμογιάννης, Α. (2017). Ηλεκτρονική Μάθηση: Θεωρητικές προσεγγίσεις και εκπαιδευτικοί σχεδιασμοί. Αθήνα: Εκδόσεις Κριτική.

Δημητριάδης, Σ. Ν. (2014). *Θεωρίες μάθησης και εκπαιδευτικό λογισμικό.* Ελληνικά Ακαδημαϊκά Ηλεκτρονικά Συγγράμματα και Βοηθήματα. Διαθέσιμο στη https://repository.kallipos.gr/handle/11419/3397-

Related academic journals:

- Θέματα Επιστημών και Τεχνολογίας στην Εκπαίδευση
- British Journal of Educational Technology
- Computer Science Education
- Computers & Education
- Education and Information Technologies
- Educational Technology Research & Development
- Interactive Learning Environments
- International Journal of Artificial Intelligence in Education
- Journal of Computing in Childhood Education
- Journal of Educational Technology & Society
- Journal of Interactive Media in Education
- Journal of Research on Technology in Education
- Themes in science and technology education