1.1.1 Composite Constructions

GENERAL

SCHOOL	Engineering		
ACADEMIC UNIT	CIVIL ENGINEERING		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΔΟΜ036	**SEMESTER**	9th
COURSE TITLE	Composite Constructions		

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**
	4	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*	Specialization Course
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	

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*

Upon successful completion of the course, students will be able to:
- Understand the behavior of composite structures.
- Be familiar with the behavior of elements and members made of different structural materials.
- Calculate the combined ultimate limit state of steel and concrete in composite structures.
- Design 3 dimensional composite structures
- Distinguish between analysis methods and construction stages of composite structures.
- Calculate, check and dimension beams, slabs and columns of composite structures according to Eurocode 4

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*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
	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
- Adapting to new situations
- Decision-making
- Working independently
- Team work
- Working in an interdisciplinary environment
- Project planning and management
- Criticism and self-criticism
- Production of free, creative and inductive thinking

SYLLABUS

• Formation of buildings with mixed structural elements, operating principles of elements made from different materials: structural steel - reinforced concrete.
• Specifications of construction materials according to Eurocode 4.
• Composite beams: Determination of inertia magnitudes, analysis methods for ultimate limit states of failure and serviceability.
• Composite slabs: Analysis and dimensioning. Construction details.
• Composite columns. Types, determination of inertia magnitudes, plastic intensity magnitudes, interaction of moments - axial forces, bending checks, construction details.
• Behaviour of composite structural elements against fire.

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*	
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*	
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*	1. Assignment of tasks aimed at exploring the understanding of the concepts taught. 2. Final written exam at the end of the semester (in Greek). 3. Each student is given the opportunity to review their written exam and have their mistakes analyzed.

Activity	***Semester workload***
Lectures	52
Individual study	78
Course total (26 hours workload per ECTS credit)	***130***

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.*	

ATTACHED BIBLIOGRAPHY

Vagias I., Composite Structures from Steel and Reinforced Concrete, 3rd ed., Kleidarithmos publ., 2010 (in Greek)