COURSE OUTLINE

(1) GENERAL

SCHOOL	ENGINEERING SCHOOL		
DEPARTMENT	Department of Civil Engineering		
LEVEL OF STUDIES	UNDER GRADUATE		
COURSE CODE	2305523	SEMESTER	5th
COURSE TITLE	STATICS II		

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	4	7
Laboratory	2	
	6	
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*	Skills development
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek (official)- English (in Erasmus courses)
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES
COURSE WEBSITE (URL)	http://pde.teipir.gr/2305523

(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*

Upon completion of the course, students will have:

1. Detailed knowledge and critical understanding of the theory and principles of static behavior indeterminate structures.
2. Knowledge and skills in solving indeterminate structures.
3. Knowledge and skills evaluation results obtained with the help of structural analysis software.

Specifically, students will be able to:

1. Describe and recognize indeterminate structures.
2. Explain the operation and response of statically indeterminate structures.
3. Develop methodologies solving frame structures.
4. Implement quantitative and qualitative design techniques of internal forces diagrams.
5. Know and apply the definition and evaluation of influence lines of statically indeterminate structures.

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*
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…*
	…….

- INDEPENDENT WORK
- TEAMWORK
- SOLVING STRUCTURAL INDETERMINATE STRUCTURES

(3) Course Content

- Advantages and disadvantages of indeterminate structures.
- Methodologies for determining the degree of kinematic & statically indeterminacy of structures.
- The Force Method for beams and frames.
- The Three-Moment Equation for continuous beam (Clapeyron's Theorem).
- Fixed-end moments for fixed-fixed and fixed-simply supported beams.
- The basic Displacement Method for beams and frames.
- The Moment Distribution Method (the Cross Method) for continuous beams and for frames with non-translated and translated nodes.
- Symmetric structures under symmetric and anti-symmetric loading.
- Qualitative influence lines for statically indeterminate beams and frames applying the

Müller-Breslau principle.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Lectures
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Teaching using ICT, Laboratory Education using ICT, Communication and Electronic Submission
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: 52 Laboratories: 26 Assignment: 37 Study: 60 Course total: **175**
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.*	Written examination: 85% Laboratory exercise: 15%

(5) ATTACHED BIBLIOGRAPHY

1. Stavridis L. (2006), Statics of Structures, Part A, Athens: Publisher KLEIDARITHMOS (in greek).
2. R.C. Hibbeler (2006), Structural Analysis, 6th edition, (in English)