

## COURSE OUTLINE

### (1) GENERAL

SCHOOL	ENGINEERING SCHOOL		
DEPARTMENT	CIVIL ENGINEERING DEPARTMENT		
LEVEL OF STUDIES	UNDER GRADUATE		
COURSE CODE	2305518	SEMESTER	5 <sup>th</sup>
COURSE TITLE	<b>Construction machinery</b>		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>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</i>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
Lectures	2	3	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Specialized Knowledge, skills development		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek (official)- English (optional)		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	-		
<b>COURSE WEBSITE (URL)</b>	<a href="http://civil.teipir.gr/web/index.php?page=alias-73">http://civil.teipir.gr/web/index.php?page=alias-73</a>		

## (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b></p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i></li> <li>• <i>Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i></li> <li>• <i>Guidelines for writing Learning Outcomes</i></li> </ul>																			
<p><b>Basic and essential knowledge:</b></p> <p>to understand the needs of a project for correct choice of earthmoving machines on a project, for costing study and time definition of excavation, paving, embankment and machinery depreciation during their useful life to develop atomic engineering responsibility and scientific opinion</p>																			
<p><b>General Competences</b></p> <p><i>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?</i></p> <table border="0"> <tr> <td><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td> <td><i>Project planning and management</i></td> </tr> <tr> <td><i>Adapting to new situations</i></td> <td><i>Respect for difference and multiculturalism</i></td> </tr> <tr> <td><i>Decision-making</i></td> <td><i>Respect for the natural environment</i></td> </tr> <tr> <td><i>Working independently</i></td> <td><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td> </tr> <tr> <td><i>Team work</i></td> <td><i>Criticism and self-criticism</i></td> </tr> <tr> <td><i>Working in an international environment</i></td> <td><i>Production of free, creative and inductive thinking</i></td> </tr> <tr> <td><i>Working in an interdisciplinary environment</i></td> <td><i>.....</i></td> </tr> <tr> <td><i>Production of new research ideas</i></td> <td><i>Others...</i></td> </tr> <tr> <td></td> <td><i>.....</i></td> </tr> </table>		<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>	<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>	<i>Decision-making</i>	<i>Respect for the natural environment</i>	<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>	<i>Team work</i>	<i>Criticism and self-criticism</i>	<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>	<i>Working in an interdisciplinary environment</i>	<i>.....</i>	<i>Production of new research ideas</i>	<i>Others...</i>		<i>.....</i>
<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>																		
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>																		
<i>Decision-making</i>	<i>Respect for the natural environment</i>																		
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>																		
<i>Team work</i>	<i>Criticism and self-criticism</i>																		
<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>																		
<i>Working in an interdisciplinary environment</i>	<i>.....</i>																		
<i>Production of new research ideas</i>	<i>Others...</i>																		
	<i>.....</i>																		
<p>Search for, analysis and synthesis of data and information, with the use of the necessary technology Adapting to new situations Decision-making Team work Project planning and management Respect for the natural environment</p>																			

## (3) Course content

<p>Classification of Construction Machinery – Factors that influence the choice of the construction machineries – Excavation Activities – Performance and Productivity of Machineries – Maintenance and Repairs of the Machinery – Function Costs of the Machineries - Depreciation methods Machinery - Financial Lifetime Machinery - Excavation machinery - Scrapers - Graders - Ground Modulators - Promoters - Loaders - Transportation Equipment - Transportation Vehicles - Machinery Soil Compaction - Engineering Establishment Quarry Production of Aggregates - Soil stabilization - Formation Worksite Concrete Production - Machinery transfer Concrete - Concrete Pumps - Concrete Asphalt Equipment - Snow and Ice Management - Security Measures machine functions. Vibrators mass surface. Structural Cranes, Hoists</p>
--

## (4) TEACHING and LEARNING METHODS - EVALUATION

<p style="text-align: center;"><b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i></p>	Lectures, exercises, distance learning methods									
<p style="text-align: center;"><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	Teaching using ICT, Laboratory Education using ICT, Communication and Electronic Submission									
<p style="text-align: center;"><b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail.</i> <i>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.</i></p> <p><i>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</i></p>	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="text-align: left;"><i>Activity</i></th> <th style="text-align: left;"><i>Semester workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>26</td> </tr> <tr> <td>Personal study</td> <td>49</td> </tr> <tr> <td>Course total</td> <td>75</td> </tr> </tbody> </table>		<i>Activity</i>	<i>Semester workload</i>	Lectures	26	Personal study	49	Course total	75
	<i>Activity</i>	<i>Semester workload</i>								
	Lectures	26								
	Personal study	49								
Course total	75									
<p style="text-align: center;"><b>STUDENT PERFORMANCE EVALUATION</b> <i>Description of the evaluation procedure</i></p> <p><i>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</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p><b>Written examination: 60%</b> <b>Laboratory exercise: 40%</b></p> <p><b>Optional job preparation and presentation of up to 24%, less than the proportion of written examination</b></p>									

#### (5) ATTACHED BIBLIOGRAPHY

- |    |  |
|----|--|
| 1) | Ioannis D.Kofitsas , (1993), Elements of Construction Machinery, Athens: ION   |
| 2) | Panagiotis Drakatou-Professor University of Athens, Construction Machinery     |
| 3) | Sellountos, Vaios I., (2007), Technical Projects Machineries, Athens, Selka-4M |