

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	ENGINEERING		
<b>DEPARTMENT</b>	PRODUCT AND SYSTEMS DESIGN ENGINEERING		
<b>LEVEL OF STUDIES</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	1205	<b>SEMESTER</b>	2 <sup>nd</sup>
<b>COURSE TITLE</b>	Ergonomics		
<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		3	4
<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>	Special Background		
<b>PREREQUISITE COURSES:</b>	NONE		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	GREEK/ENGLISH		
<b>COURSE DELIVERED TO ERASMUS STUDENTS</b>	YES		
<b>MODULE WEB PAGE (URL)</b>	<a href="https://eclass.uowm.gr/">https://eclass.uowm.gr/</a>		

### 2. LEARNING OUTCOMES

<b>Learning outcomes</b>
<p><b>On successful completion of this module the learner will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Describe those morphological/ environmental elements of a work system that do not render this system optimal for human use</li> <li>2. Determine ranges of comfort zones in order to optimize human-system interaction in terms of effectiveness, efficiency and human well-being</li> <li>3. Develop guidelines for the ergonomic design of a new system or the redesign of an already existing one</li> <li>4. Apply principles and techniques of anthropometrics to accommodate 95 percent of the user population</li> <li>5. Evaluate the impact of emerging design solutions in terms of expected benefits in relation to implementation costs</li> </ol>
<b>General Skills</b>
<p><b>Upon successful completion of the program students will:</b></p> <ul style="list-style-type: none"> <li>• have the theoretical and practical background on the field of product and systems design engineering and the corresponding profession.</li> <li>• utilize scientific knowledge to understand, analyze and solve problems.</li> <li>• apply a wide range of scientific and technical knowledge concerning the design and development of products and systems.</li> </ul>

### 3. COURSE CONTENTS

<ul style="list-style-type: none"> <li>• Introduction to Ergonomics: Definitions, objectives, fields of study</li> <li>• Ergonomic work analysis</li> <li>• Systems and senses of the human body</li> <li>• Muscular work and nervous control of movements</li> </ul>
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- Anthropometry
- Design of workplaces and product design
- Work-related musculoskeletal disorders
- Evaluating physical workload and lifting
- Controls and displays
- Design of human-machine interface
- Lighting environment
- Sound environment
- Thermal environment

#### 4. TEACHING METHODS - ASSESSMENT

<b>MODE OF DELIVERY</b>	In class, face to face	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>	<ul style="list-style-type: none"> <li>• Video and slide presentations via projector</li> <li>• Support of teaching process via the electronic platform e-class</li> <li>• Communication with students.</li> </ul>	
<b>TEACHING METHODS</b>	<i>Activity</i>	<i>Semester workload</i>
	Lectures	60
	Non-directed study	40
	<b>Course total</b>	<b>100</b>
<b>ASSESSMENT METHODS</b>	Final written exam which includes: <ol style="list-style-type: none"> <li>Short-answer questions</li> <li>Multiple choice questions</li> <li>Problem solving</li> </ol>	

#### 5. ATTACHED

- *Suggested bibliography:*

- ΣΧΕΔΙΑΣΜΟΣ ΤΩΝ ΑΝΤΙΚΕΙΜΕΝΩΝ ΤΗΣ ΚΑΘΗΜΕΡΙΝΟΤΗΤΑΣ, DONALD A. NORMAN
- Οικοδομική & Αρχιτεκτονική Σύνθεση, 39η Γερμανική Έκδοση, Ernst Neufert

- *Related academic journals:*