COURSE OUTLINE

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE UNIT CODE	ΤΕΠΑΡ31	**SEMESTER OF STUDY**	6th
COURSE TITLE	ERGONOMICS		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	4	5.5
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Special background
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek (English in ERASMUS)
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT203/

2. LEARNING OUTCOMES

LEARNING OUTCOMES

The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:

APPENDIX A

- *Description of the level of learning outcomes for each qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

Ergonomic knowledge is essential both in our professional and everyday life. This course introduces the capabilities and limitations of the human body and the way this knowledge can be used in product design & development for creating products that are both easy to use and attractive, as well as in workplace design for accomplishing high levels of work productivity and occupational safety.

In this context, the course analyses elements of the structure and function of the human body and the factors that harm it, while providing advice on the prevention of occupational accidents and occupational diseases that improve the everyday life of the human being. To better understand the human decision-making process and our cognitive limits part of the course focuses on basic cognitive processes and the basic function/characteristics of associated systems such as the brain, sensory organs and the musculoskeletal and nervous system. Processes associated with human energy production and consumption through physical activity are also discussed.

Upon successful completion of the course, the students will be able to:

- Demonstrate knowledge on the basic ergonomics methods and applications
- Understand and manage occupational safety issues
- Use the basic ergonomic analysis tools and ergonomic design techniques for products, jobs and workplaces

General Competences

Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Decision-making
- Independent work
- Social, professional and ethical responsibility and sensitivity to gender issues
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

2. COURSE CONTENT

The course covers the following topics:

Week	Topic
1	Introduction
2	The methodology of Ergonomics
3	Anthropometry
4	Physical work and materials handling
5	Cognitive Ergonomics
6	Cognitive Ergonomics
7	Design of visual information displays
8	Design of Controls
9	Workplace/Workstation Design
10	Usability Design for Products
11	Usability Design for Products
12	Environmental Factors – Thermal Environment
13	Environmental Factors – Noise

Case studies from the following bibliography are presented:

- J. Long & A. Whitefield (1989), Cognitive ergonomics and human-computer interaction, Cambridge University Press.
- E.N. Corlett & T.S. Clark (1995), The ergonomics of workspaces and machines: a design manual, 2nd ed., Taylor and Francis.

In addition, articles, audiovisual lecture material, web articles, useful information, exercises and/or software are posted at eclass.

3. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>In-class lecturing</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform
Communication with students: face-to-face at office hours, email, eclass</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>52</td></tr>
<tr><td>Case studies</td><td>10</td></tr>
<tr><td>Self-study of lecture material and case studies</td><td>73</td></tr>
<tr><td>Counselling</td><td>0.5</td></tr>
<tr><td>Exams (written)</td><td>2</td></tr>
<tr><td>Course Total</td><td>137.5</td></tr>
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<tr><td>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS
Detailed description of the evaluation procedures:
Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek (English in ERASMUS)

Assessment Methods: After the last lecture, the exam material is posted at eclass. The final course grade is formed by the written exams (100%) taken in the examination period of the spring semester and, in case of failure, in the September resits.

The written examination includes short-answer and open-ended questions. It is conducted with closed books.

The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and e-class. The answers to the exam questions are posted at eclass after the exam date. Students have the opportunity to discuss their exam paper with the course instructor (at the posted office hours) after the announcement of the course grades.</td></tr>
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4. SUGGESTED BIBLIOGRAPHY

-Suggested Bibliography :

- Book [9706]: Modern Ergonomics [in Greek], Laios L., Giannakourou – Sioutari M.
- Book [7657859]: Introduction to Ergonomics [in Greek], Marmaras N.

-Scientific Journals:

- Applied Ergonomics
- Human Factors

-Lecture Notes