COURSE OUTLINE

1. GENERAL

SCHOOL			
DEPARTMENT	DEPARTMENT OF PHYSICS		
LEVEL OF STUDIES	ISCED level 6 – Bachelor's or equivalent level		
COURSE CODE	Y101-2023	**SEMESTER**	1st Semester
COURSE TITLE	Physics I		

TEACHING ACTIVITIES If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits.	**TEACHING HOURS PER WEEK**	**ECTS CREDITS**
	5	8.0

COURSETYPE Background, General Knowledge, Scientific Area, Skill Development	General Knowledge
PREREQUISITES	
TEACHING & EXAMINATION LANGUAGE:	Greek
COURSE OFFERED TO ERASMUS STUDENTS:	NO
COURSE URL:	https://eclass.emt.duth.gr/courses/PHYSICS166/

2. LEARNING OUTCOMES

Learning Outcomes
Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.

The course includes the material of mechanics, oscillations and mechanical waves, at a level higher than the level of secondary education. The study is based on infinite calculus and simple differential equations. Emphasis is placed on understanding the principles and physical laws of a) Mechanics of material point and solid body b) Harmonic oscillator and Mechanical waves.
Upon successful completion of the course, the student will have acquired:
• Ability to demonstrate in-depth knowledge and understanding of key concepts, principles and laws related to Point Material Mechanics, Solid State Mechanics, Harmonic Oscillator and Mechanical Waves.
• Ability to apply this knowledge in solving related complex problems.
• Critical thinking ability to be able to evaluate, analyze and relate this knowledge.
• Ability to interpret phenomena of everyday life.
• Ability to develop cooperation with other fellow students to solve problems related to this course.

General Skills	
Name the desirable general skills upon successful completion of the module	
Search, analysis and synthesis of data and information, ICT Use,Adaptation to new situations, Decision making, Autonomous work, Teamwork, Working in an international environment, Working in an interdisciplinary environment, Production of new research ideas	Project design and management Equity and Inclusion Respect for the natural environment Sustainability Demonstration of social, professional and moral responsibility and sensitivity to gender issues Critical thinking Promoting free, creative and inductive reasoning
Search, analysis and synthesis of data and information, ICT Use Autonomous work Critical thinking Promoting free, creative and inductive reasoning	

3. COURSE CONTENT

Introductory concepts Systems of Units. Dimensional analysis. Vectors Kinematics. Dynamics. Reference systems. Energy. Momentum. Angular Momentum or Rotation Dynamics of Solids. Harmonic Oscillator. Mechanical waves.

4. LEARNING & TEACHING METHODS - EVALUATION

TEACHING METHOD Face to face, Distance learning, etc.	Face to face
USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) Use of ICT in Teaching, in Laboratory Education, in Communication with students	Use of ICT in Teaching Use of ICT in Communication with students
TEACHING ORGANIZATION The ways and methods of teaching are described in detail. Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research& analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc. The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards	
STUDENT EVALUATION Description of the evaluation process Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam, Presentation in audience, Laboratory Report, Clinical examination of a	**Student evaluation languages** Greek **Method (Formative or Concluding)** Formative **Student evaluation methods** — **Rate** Written Exam with Problem Solving — 90 Written Assignment — 10

Activity	Workload/semester
Lectures	125
Tutoring	75
Total	**200**

patient, Artistic interpretation, Other/Others Please indicate all relevant information about the course assessment and how students are informed	

5. Suggested Bibliography

? ΦΥΣΙΚΗ ΓΙΑ ΕΠΙΣΤΗΜΟΝΕΣ ΚΑΙ ΜΗΧΑΝΙΚΟΥΣ ΤΟΜΟΣ Α’, Giancoli C. Douglas. Εκδόσεις Τζιόλα
? Serway/Jewett: "ΦΥΣΙΚΗ ΓΙΑ ΕΠΙΣΤΗΜΟΝΕΣ ΚΑΙ ΜΗΧΑΝΙΚΟΥΣ" Μηχανική -Ταλαντώσεις και Μηχανικά Κύματα-Θερμοδυναμική- Σχετικότητα Εκδόσεις Κλειδάριθμος.
? Halliday, Resnick, Krane: "ΦΥΣΙΚΗ" Τόμος 1, Εκδόσεις Α.Γ. Πνευματικός

Eudoxus

? ΦΥΣΙΚΗ ΓΙΑ ΕΠΙΣΤΗΜΟΝΕΣ ΚΑΙ ΜΗΧΑΝΙΚΟΥΣ ΤΟΜΟΣ Α’, Giancoli C. Douglas. Εκδόσεις Τζιόλα
? Serway/Jewett: "ΦΥΣΙΚΗ ΓΙΑ ΕΠΙΣΤΗΜΟΝΕΣ ΚΑΙ ΜΗΧΑΝΙΚΟΥΣ" Μηχανική -Ταλαντώσεις και Μηχανικά Κύματα-Θερμοδυναμική- Σχετικότητα Εκδόσεις Κλειδάριθμος.
? Halliday, Resnick, Krane: "ΦΥΣΙΚΗ" Τόμος 1, Εκδόσεις Α.Γ. Πνευματικός