COURSE OUTLINE

1. GENERAL

SCHOOL	APPLIED SCIENCES		
DEPARTMENT	Department of Environmental Engineering		
LEVEL OF STUDY	Undergraduate		
COURSE UNIT CODE	**GE5120**	**SEMESTER OF STUDY**	First
COURSE TITLE	Physics		

COURSEWORK BREAKDOWN	**TEACHING WEEKLY HOURS**	**ECTS Credits**
Theoretical background	3	3
Laboratory exercises	2	2
TOTAL		6

COURSE UNIT TYPE	GBC: General Background Courses
PREREQUISITES :	
LANGUAGE OF INSTRUCTION/EXAMS:	Greek
COURSE DELIVERED TO ERASMUS STUDENTS	
MODULE WEB PAGE (URL)	http://geope.teikoz.gr/undergraduate/ug_studies.htm

2. LEARNING OUTCOMES

Learning Outcomes

On successful completion of this module the learner should be able to:

1. Know and understand the basic physics laws governing our environment, discuss the measurement of physical quantities and the use of units in describing the laws of nature
2. Describe the physical principles that underlie environmental issues and shows how they contribute to the interdisciplinary field of environmental science.
3. Solve simple numerical problems relevant to conservation laws, fluid mechanics, waves, sound, electromagnetism, optics, atomic and nuclear physics.
4. Carry out relevant laboratory experiments to demonstrate and test physical principles and report the results.

General Skills *Upon successful completion of the programme students will:* *-have the basic theoretical and practical knowledge in the fields of the subject area of Geotechnology and Environmental Engineering* *-be able to properly apply the theoretical and practical knowledge acquired during the study period* *-be able to cover a wide spectrum of scientific and technical knowledge related to mining and geotechnical projects as well as the sector of environmental reclamation* *-have gained the necessary competencies to proceed to their second cycle study*

3. COURSE CONTENTS

Physics and measurements, conservation laws, fluid mechanics, wave motion, sound waves. Electromagnetism, electric charge and current, electric fields, magnets and magnetic materials, magnets and magnetic materials, magnetic field and forces, the earth's magnetic field, electricity and magnetism, induction, transmission lines and human health. The nature of light, geometric optics, microscope, interference of light waves, diffraction and polarization. Temperature, heat and the first low of thermodynamics, entropy and the second low of thermodynamics. Atomic physics, early models of the atom, atomic spectra, photoelectric effect, atomic transitions, lasers. Radioactivity and nuclear physics.

4. TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	Face – to - face	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY		
TEACHING METHODS	***Method description***	***Semester Workload***
ASSESSMENT METHODS	*Lab and/or Project Work* *End of Semester Formal Examination*	

5. RESOURCES

- Recommended Book Resources:

- Physics for engineers, A Triantafyllou, Kozani 2001, pp400)
- Lectures on Meteorology, A. Karagiannidis, Kozani 2009
- Halliday D., Resnick R., Walker j., (2004): "Fundamentals of Physics, 7th Edition"Wiley and sons. ISBN: 978-0-471-21643-8
- Holton J.R., 1992: An Introduction to Dynamic Meteorology. Third Edition, Academic Press, New York, 511pp
- Martin E.J. 2006: Mid-Latitude Atmospheric Dynamics A First Course. .John Wiley and sons. New York, 324pp
- Monteith J.L., M. Unsworth, 1973, «Prfinciples of Environmental Physics»
- Muncaster R., (1981) "A-Levels Physics", 4th Edition, Stanley Thornes Ltd
- Serway R., (2004) "Physics for Scientists and Engineers" Thomson Brooks/Cole ISBN 0534408427

- Recommended Article/Paper Resources: