COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF ENGINEERING
ACADEMIC UNIT	DEPARTMENT OF MINERAL RESOURCES ENGINEERING
LEVEL OF STUDIES	UNDERGRADUATE

COURSE CODE	MRE201	SEMESTER	2

COURSE TITLE	MATHEMATICS II

INDEPENDENT TEACHING ACTIVITIES *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*		WEEKLY TEACHING HOURS	CREDITS
	LECTURES	3	
	IN-CLASS EXERCISES	2	
	COURSE TOTAL	5	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	General background
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	https://eclass.uowm.gr/courses/MRE119/

(2) LEARNING OUTCOMES

Learning outcomes
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. *Consult Appendix A* • *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area* • *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B* • *Guidelines for writing Learning Outcomes*

The student after the successful completion of the course will have acquired analytical ability and will be able to understand a phenomenon, will be able to study it and then solve a series of problems that refer to it.
The student will become aware of all the mathematical procedures that refer to the optimization of scientific processes and situations.
It goes without saying that such a high-level course promotes creative and inductive thinking and becomes a key tool for scientific completeness.

- Working independently
- Decision-making
- Production of free, creative and inductive thinking

(3) SYLLABUS

Functions of two or more variables. Differential calculus: Partial derivatives and function differential. Taylor's spread. Interlaced functions. Extremities. Exercises. Integral calculus: double, triple, epimblyl integrals and applications. Differential equations: ordinary differential equations of 1st and 2nd order. Exercises.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of projection system, organization and programming of the course and communication with students through the asynchronous e-learning platform open eclass.
TEACHING METHODS *The manner and methods of teaching are described in detail.* *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.* *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*	<table><tr><td>*Activity*</td><td>*Semester workload*</td></tr><tr><td>Lectures</td><td>42</td></tr><tr><td>In-class exercises</td><td>28</td></tr><tr><td>Study of theory and exercises</td><td>80</td></tr><tr><td>Course total</td><td>150</td></tr></table>
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *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*	Mid-term written exam (40%), final written exam (60%). The evaluation criteria are given on the relevant page of the course on the asynchronous e-learning platform open e-class and are analyzed to the students at the beginning of the semester.

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.	

(5) SUGGESTED BIBLIOGRAPHY

- Suggested bibliography:
ΜΑΘΗΜΑΤΙΚΑ ΙΙ, Ανδρέας Λ. Πετράκης, ISBN 978-618-83244-0-4 ΕΚΔΟΣΕΙΣ ΘΑΛΗΣ

- Related academic journals:
International Journal of Mathematics, World Scientific
Mathematical Reviews, American Mathematical Society