

COURSE OUTLINE

(1) GENERAL

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| SCHOOL | ENGINEERING | | |
| ACADEMIC UNIT | MINERAL RESOURCES ENGINEERING | | |
| LEVEL OF STUDIES | UNDERGRADUATE | | |
| COURSE CODE | MRE501 | SEMESTER | 5 |
| COURSE TITLE | SURFACE MINING | | |
| INDEPENDENT TEACHING ACTIVITIES <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> | | WEEKLY TEACHING HOURS | CREDITS |
| COURSES | | 3 | 3 |
| LABORATORY EXERCISES | | 2 | 2 |
| TOTAL | | 5 | 5 |
| <i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i> | | | |
| COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i> | SPECIAL BACKGROUND | | |
| PREREQUISITE COURSES: | | | |
| LANGUAGE OF INSTRUCTION and EXAMINATIONS: | GREEK | | |
| IS THE COURSE OFFERED TO ERASMUS STUDENTS | YES | | |
| COURSE WEBSITE (URL) | https://eclass.uowm.gr/courses/MRE139/ | | |

(2) LEARNING OUTCOMES

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| <p>Learning outcomes</p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> <p>The course aims to provide the necessary knowledge on issues related to the exploitation of surface mines and quarries, in order for students to be able to deal effectively with the following subjects:</p> <ol style="list-style-type: none"> 1. the design of a mine pit; 2. the methods of ore extraction, loading and transport and the methods of waste rock dumping, in relation to the type of deposits under exploitation (alluvial deposits, marbles and other ornamental stones, sedimentary deposits, etc.); 3. the development of a surface mine and the selection of the appropriate method of exploitation; 4. the production program; 5. the mine productivity, the medium- and long-term planning and the monitoring of mine exploitation and mine development phases. |
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General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

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| <i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> | <i>Project planning and management</i> |
| <i>Adapting to new situations</i> | <i>Respect for difference and multiculturalism</i> |
| <i>Decision-making</i> | <i>Respect for the natural environment</i> |
| <i>Working independently</i> | <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i> |
| <i>Team work</i> | <i>Criticism and self-criticism</i> |
| <i>Working in an international environment</i> | <i>Production of free, creative and inductive thinking</i> |
| <i>Working in an interdisciplinary environment</i> | <i>.....</i> |
| <i>Production of new research ideas</i> | <i>Others...</i> |
| | <i>.....</i> |

1. Search, analysis and synthesis data and information, using the necessary technologies.
2. Project planning and management.
3. Decision-making.
4. Independent work.
5. Generation of new research ideas.
6. Respect for the nature.

(3) SYLLABUS

Basic concepts of mining, methods of surface mine exploitation, design and planning of surface mine exploitation, stripping ratio, exploitation phases.
Technical, economic, environmental, and legal planning parameters.
Stripping ratio.
Optimization of the geometric boundaries of exploitation.
Optimize an exploitability limit.
Determination of the annual production and determination of the life span of the mine.
The mining history of Greece.
Brief presentation of the Greek mineral wealth and the most important surface mines.

(4) TEACHING and LEARNING METHODS - EVALUATION

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| DELIVERY <i>Face-to-face, Distance learning, etc.</i> | Face-to-face lectures, webinars, laboratory exercises on PC using special mining software. | |
| USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i> | Use of a projection system and special mine design software installed in the PCs of a laboratory, organization and scheduling of the course and the communication with students using the asynchronous e-learning platform 'open eclass'. | |
| TEACHING METHODS <i>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</i> | Activity | Semester workload |
| | Lectures | 42 |
| | Study on lectures | 30 |
| | Laboratory exercises | 28 |
| | Study and review of literature | 10 |
| | Writing assignments | 20 |
| | Seminars / field trips | 20 |
| | Total course | 150 |
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| STUDENT PERFORMANCE EVALUATION <i>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 Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i> | Final written examination of theory and exercises (60% of the total grade of the course), intermediate written examination of theory (20%), assignments (20%). 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. | |

(5) SUGGESTED BIBLIOGRAPHY

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| <p>- <i>Suggested bibliography:</i> Darling, P. (Ed), 2011, <i>SME Mining Engineering Handbook</i>, Society for Mining, Metallurgy and Exploration, 1846p. Hartman, H.L., 1987, <i>Introductory Mining Engineering</i>, John Wiley & Sons, 633p.. Kennedy, B.A. (Ed), 1990, <i>Surface Mining</i>, 2nd Edition, Society for Mining, Metallurgy and Exploration, 1194p. Papageorgiou C., Roumpos, C. 2018, <i>Basic Mining Works in Surface Mines</i>, Public Power Corporation SA, Division of Mines, 533p. Papageorgiou C., Roumpos, C. 2018, <i>Technology and Total Mechanization of Surface Mines</i>, Public Power Corporation SA, Division of Mines, 530p.</p> <p>- <i>Related academic journals:</i> <i>International Journal of Mining Science and Technology</i>, Elsevier <i>International Journal of Mining, Reclamation and Environment</i>, Taylor & Francis <i>Journal of Mining Science</i>, Springer <i>Mining Journal</i>, Aspermont Media <i>Mining Technology: Transactions of the Transactions of the Institutions of Mining and Metallurgy</i>, Taylor & Francis</p> |
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