

COURSE OUTLINE

(1) GENERAL

SCHOOL	ENGINEERING		
ACADEMIC UNIT	MINERAL RESOURCES ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	MRE606	SEMESTER	6
COURSE TITLE	INVESTMENT DECISIONS ANALYSIS		
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
EXERCISES		1	1
TOTAL		4	4
<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/MRE151/		

(2) LEARNING OUTCOMES

<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 at providing the necessary knowledge on issues related to the analysis of investment decisions and the elaboration of a techno-economic study for the exploitation of mineral resources, so that students can respond to such issues and in particular with: the contents and purpose of a techno-economic study for the exploitation of mineral resources, the basic parameters evaluated in a techno-economic study, the marketing of mining products, the implementation of market research, the estimation of the value of mineral resources, their economic study with the aim of assessing the viability of investment projects (criteria for the evaluation of investment plans, selection of an investment plan under certain and uncertain conditions, sensitivity analysis, business risk analysis, discount rate estimation - models for estimating the discount rate.</p>
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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?

<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 of data and information, using the necessary technologies
2. Adaptation of new situations
3. Decision-making
4. Independent work
5. Teamwork
6. Working in an international environment
7. Working in an interdisciplinary environment
8. Generating new research ideas
9. Project planning and management

(3) SYLLABUS

Economic and financial mathematics. Time value of money. Capital analysis. Decision of investment under certain future. Different investment evaluation criteria. Decision of the investment under uncertain future. Uncertainty and risk. Criteria for the assessment of investment projects in an undetermined future. Criteria for the assessment of investment projects under a probabilistic future. Risk and performance of a portfolio of shares. Portfolio valuation models: capital market model, capital asset valuation model. Contents and purpose of conducting a techno-economic study for the exploitation of mineral resources, special issues related to the mining industry. Key parameters used in a feasibility study of mines. Marketing of mining products. Market analysis. Estimation of the value of mines/ deposits, economic study of a mining project, preparation of cash flow table, criteria for the evaluation of investment plans, selection of an investment plan under certain future, sensitivity analysis, business risk analysis, discount rate estimation, models for estimating the discount rate: capital market model, capital market valuation model.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face lectures, additional courses for exercise solving, seminars for presentation of case-studies.	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of a projection system, 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	40
	Exercises	14
	Writing assignments	30
	Seminars	24
	Total course	150
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 (60% of the total grade of the course) and assignments (40%). 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

<p><i>- Suggested bibliography:</i></p> <p><i>Cordes, J.A., Torries, T.F., 1989, Surplus Capacity in the International Metals Industry, Society of Mining Engineers, American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc., 105 σελ.</i></p> <p><i>Dimitrakopoulos, R., (Ed), Advances in Applied Strategic Mine Planning, The Australasian Institute of Mining and Metallurgy, Springer, 2018.</i></p> <p><i>Gentry, D.W., O'Neil, T.J., 1984, Mine Investment Analysis, Society of Mining Engineers, American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc., 502 σελ.</i></p> <p><i>Kesler, S.E., Simon, A.C., 2015, Mineral Resources, Economics and the Environment, 2nd Edition, Cambridge University Press, 446 σελ.</i></p> <p><i>Rudenko, V., 2019, The Mining Valuation Handbook: Mining and Energy Valuation for Investors and Management, 4th Edition, Wiley, 624 σελ.</i></p> <p><i>Wellmer, F.W., Dalheimer, M., Wagner, M., 2008, Economic Evaluations in Exploration, 2nd edition, Springer, 264 σελ.</i></p> <p><i>- Related academic journals:</i></p> <p><i>International Journal of Mining Science and Technology, Elsevier</i></p> <p><i>International Journal of Mining, Reclamation and Environment, Taylor & Francis</i></p> <p><i>Journal of Mining Science, Springer</i></p> <p><i>Mining Journal, Aspermont Media</i></p>
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Mining Technology: Transactions of the Transactions of the Institutions of Mining and Metallurgy, Taylor & Francis
Journal of Finance and Investment Analysis, Scientific Press
Investment Analysts Journal, Taylor and Francis