

COURSE OUTLINE

1. GENERAL

SCHOOL	APPLIED SCIENCES		
DEPARTMENT	ENVIRONMENTAL ENGINEERING		
LEVEL OF STUDY	Undergraduate		
COURSE UNIT CODE	GE5610	SEMESTER OF STUDY	6°
COURSE TITLE	ENVIRONMENTAL MINING		
COURSEWORK BREAKDOWN		TEACHING WEEKLY HOURS	ECTS Credits
Lectures, Laboratory exercises		4	5
COURSE UNIT TYPE	SC: Specialization Courses		
PREREQUISITES :			
LANGUAGE OF INSTRUCTION/EXAMS:	Greek		
COURSE DELIVERED TO ERASMUS STUDENTS			
MODULE WEB PAGE (URL)	http://eclass.teiko2.gr/modules/auth/opencourses.php?fc=12		

2. LEARNING OUTCOMES

Learning Outcomes

1. Understand the theoretical background of mining and quarry waste products
2. Understand the importance of environmental technology as a critical point for the sustainable production capacity of the mining industry.
3. Combine methods with high environmental value in the assessment of mining resources promoting CCS technologies
4. Understand the principles of the environmental monitoring and control.
5. Understand the water and soil resources protection technology for the mining sector

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

Introduction. Environmental pollution in mining activities, environmental monitoring and control processes, sampling methodology, Evaluation of mining activity in air, soil and water. Vibrations and noise in mining activity, sensory parameters, physic-chemical water and soil control, nutrient-indicators of eutrophication, acid mine drainage, purification processes of mining wastes, wastewater treatment and performance of waste cleaning processes, methods for cleaning mining waste. Influence of mining activity in the surrounding area. To problem of inactive mining and quarries spaces. Management of mining and quarrying wastes.

4. TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	Face to face	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY		
TEACHING METHODS	Method description	Semester Workload
	Laboratory exercises	60
	Theory	40
	Total of lesson	100
ASSESSMENT METHODS	I. Lab and/or Project Work (40%) II. End of Semester Formal Examination (60%)	

5. RESOURCES

<p>- <i>Recommended Book Resources:</i></p> <p>- <i>Recommended Article/Paper Resources:</i></p> <ul style="list-style-type: none"> • Φραγκίσκος, Α. 2012. Το περιβάλλον και η μεταλλευτική - μεταλλουργική βιομηχανία. Έκδοση 1η Εκδόσεις κάτοπτρο, ΑΛ. ΜΑΜΑΛΗΣ σελ. 256. <u>Εύδοξος: 32997480</u> • Καλιαμπάκος, Δ. 1996. Περιβαλλοντική μεταλλευτική και λατομική τεχνολογία. Εκδόσεις ΕΜΠ. Αθήνα. • Καλιαμπάκος, Δ. 1996. Περιβάλλον II- Προστασία περιβάλλοντος στη μεταλλευτική δραστηριότητα. Εκδόσεις ΕΜΠ. Αθήνα. • Κουϊμτζής, Θ., Σαμαρά, Κ. 1994. Έλεγχος ρύπανσης περιβάλλοντος. Εκδόσεις Ζήτη Εύδοξος: 11276 • Κουϊμτζής Θ., Φυτιάνος Κ., Σαμαρά Κ. 2004 Έλεγχος ρύπανσης περιβάλλοντος. Εκδόσεις University Studio Press. Θεσσαλονίκη Εύδοξος: 17239 • Α. Ανδρεαδάκης, Μ. Πανταζίδου, Α. Σταθόπουλος 2008. Περιβαλλοντική Τεχνολογία, Εκδόσεις Συμμετρία, Αθήνα. Εύδοξος: 45237 • Μαρκαντωνάτος Γ. 1990. Επεξεργασία και διάθεση υγρών αποβλήτων: αστικά λύματα, βιομηχανικά απόβλητα, ζωικά απορρίμματα, • Βασιλικιώτης Γ.Σ., Φυτιάνος Κ. 1986. Μέθοδοι ελέγχου ρύπανσης περιβάλλοντος, • Χριστούλας Δ. 1991. Ρύπανση των υδάτων και αντιρρυπαντική τεχνολογία. • Spitz, K., Trudinger, J. 2008. Mining and the Environment: From Ore to Metal. Kindle Edition
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CRC press. NY

- Amy Larkin 2013. Environmental Debt: The Hidden Costs of a Changing Global Economy. Kindle Edition.
- Younger, P.L., Banwart, S.A., Hedin R. S., 2002. Mine Water: Hydrology, Pollution, Remediation. Kluwer Academic publisher.