COURSE SYLLABUS

Course Name: Mine Economics						
Code	**Semester**	**Local Credits**	**ECTS Credits**	**Course Implementation, Hours/Week**		
				Theoretical	**Tutorial**	**Laboratory**
MAD 436	8	2.0	3.0	2	--	--

Department/Program	Mining Engineering		
Course Type	Compulsory	**Course Language**	Turkish
Course Prerequisites	MAD 232 / MAD 232E MIN DD and MAD 243 MIN / MAD 243E MIN DD		

Course Category by Content, %	**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
	-	20%	80%	-

Course Description	Basic Concepts of Economy, Revenue and cost concept, Cost estimation, Depreciation and amortization and their applications. The time value of Money and interest rates, Economic evaluation methods (Present, future and annual worth, internal rate of return, Hoskolt methods etc.), Types of investment proposal and properties of mining investment, Risk assessment in mining.
Course Objectives	1.To provide the concepts of basic mining economic 2.To provide types of mining investment and analyses of their economic evaluation 3.To determine mine investment risks and futures 4. Feasibility studies in mining (scope, prefeasibility, definite feasibility)
Course Learning Outcomes	1. Learning the basic economical concepts. 2. Classification of income and outgoings from production 3. Break even points analyse for mining companies 4. Learning depreciation and interest calculations 5. Preparation of mine investment projects 6. Evaluation of mine investment projects 7. Feasibility studies in mining
Text Book	-
Other References	Gentry, D. W. and T. J. O'neil Mine Investment Analysis, SME Publishing, 1984. Vogely, W. A., Economics of the Mineral Industries, SME Publishing, 1985. Runge, J.C. Mining economics and strategy, SME, Publishing, 1998. Ceventer, B., Mineral Production Costs: analysis and management, SME, Publishing, 1999. Roscoe, W.E., Valuation of mineral exploration properties using the cost approach, CIM Bull. V. 95, n. 1059, March 2002. Crowson, P., Mine Size and the structure of costs. Recoveries policy, v. 29, n. 1-2, March/June 2003. Crowson, P.C.F., Economics of Minerals Industry. SME Third Edition. 2011. Stilwell, L.C., Input-Output analysis its potential application to the mining industry, Journal of the South African Ins. Of Mining and Metal., V. 100, n. 7, Nov-Dec 2000. Köse H., Aksöz , İ. Ve Kahraman B., 1997, Maden İşletme Ekonomisi,, Dokuz Eylül Üniversitesi Mühendislik Fakültesi Yayınları. O Neil T. J. and Gentry D. W., 1994, Mine Investment Analysis, Society of Mining Engineering.
Homework & Projects	Project: Each student submits a project report for investment and operation economic analyses of an open pit coal mine.
Laboratory Work	-
Computer Use	MS Excel and MS Word application during the project studies.
Other Activities	-

Assessment Criteria	**Activities**	**Quantity**	**Effects on Grading, %**
	Midterm Exams	1	25
	Quizzes	-	-
	Homework	-	-
	Projects	-	-
	Term Paper/Project	1	25
	Laboratory Work	-	-
	Other Activities	-	-
	Final Exam	1	50

WEEKLY COURSE PLAN

Week	Topics	Student Outcomes
1	Introduction to mining economy and the importance of economics in engineering projects	1
2	Basic concepts of economy	1
3	Revenue and cost concept	2
4	Calculation and concept of income and profit	2
5	Breakeven point analysis for traditional and linear systems	3
6	Breakeven point analysis non-linear systems	3
7	Depreciation concept and calculation	4
8	Midterm exam	-
9	Calculations for interests	4
10	Calculations for interests and time value of money	4
11	Types of investment proposal and their properties	5,7
12	Types of investment proposal and their properties	5, 7
13	Evaluation of prefeasibility studies in mining - static methods	6,7
14	Evaluation of prefeasibility studies in mining - dynamic methods	6, 7

RELATIONSHIP BETWEEN THE COURSE AND STUDENT OUTCOMES

No	Student Outcomes	Level of Contribution		
		1	**2**	**3**
1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics			X
2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors			X
3	an ability to communicate effectively with a range of audiences			X
4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts		X	
5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives		X	
6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	X		
7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies			X
1: Low (1-3 weeks), 2. Partial (4-6 weeks), 3. Full (7 or more weeks)				