

MINERAL RESOURCE MANAGEMENT FOR SUSTAINABLE MINING

Code	Credit Hours
MinE-804	3-0

Course Description.

Introduction, Purpose and Intent of MRM, What is MRM, MRM and the Markets, Compelling Reasons to Implement an MRM Approach, Mineral Asset Management Approach, MRM and the Value Chain, Value Chain and Constraints, FEL: Inputs to MRM. Mine Financial Valuation. Costs and Time Value of Money. Capital Investment Decisions. Financing Decisions, Integrated Mine Planning. Purpose of Integrated Planning. MRM and Strategy, Strategic Optimization, Feasibility Studies, Life of Mine Planning, Optimization of Mine Plans, Compliance and Reporting, The Changing Environment, Resources and Reserves, Reporting Codes, Valuations, Compliant Sampling, Mine Process Optimization, The Modifying Factors, Importance of Measurement, What is the Process and Reconciliations?, What is Optimization?, What do you optimize?, Risk in Mining, Risk Funnels, Business Risk, Insuring Against Risk, Compliance as a Means of Dealing with Risk, Operational and Project Risk; and, Stochastic Assessment of Risk.

Textbooks:

1. Barry A. Wills "Wills' Mineral Processing Technology: An Introduction to the Practical Aspects of Ore Treatment and Mineral Recovery", Butterworth-Heinemann, ISBN-10: 0750644508.

References Book:

1. Deepak Malhotra, Patrick Taylor, Erik Spiller, Marc LeVier, "Recent Advances in Mineral Processing Plant Design, Society for Mining Metallurgy & Exploration, ISBN-10: 0873353161.

Pre-Requisites:

Nil

ASSESSMENT SYSTEM FOR THEORY

Quizzes	15%
Assignment	5%
Mid Terms	30%
ESE	50%

Teaching Plan

Week No	Topics	Learning Outcomes
1-2	Introduction to MRM	Course Outline, objectives, teaching plan, assessment method, concepts review. Introduction to courses. Concept of MRM and its purpose, Explanation of various reasons for compelling MRM approach. Mineral asset management

		approach
3-5	Financial valuation and decisions	MRM and value chain and constraints. Various input of MRM, Financial evaluation of mineral districts. Cost and time value of money and capital investment decisions, Various factor effecting financial decision. Decision of mine development and integrated mine planning
6	MRM and Strategy	MRM strategy, Strategic optimization, feasibility study of mineral deposit
7	Mine Planning	Life of evaluation of mine cycle, optimization of mine plan and compliance and reporting
8	Resources and Reserves reporting	Changing environment, Concept of resource and reserve, various reporting codes
9	MID TERM EXAM	
10-13	Mine valuation and process optimization	Valuations, Compliant Sampling, Mine Process Optimization. The Modifying Factors, Importance of Measurement, What is the Process and Reconciliations? A brief concept of mine optimization such as mine planning, mine cost etc.
14-16	Risks in mining	Factors responsible for mining risk, Risk associates with mining business, Various measures against mining risk Insuring Against Risk, Compliance as a Means of Dealing with Risk, Operational and Project Risk; and Stochastic Assessment of Risk
18	END SEMESTER EXAM	