

BUSINESS RISKS MANAGEMENT AND DECISION MAKING FOR MINING INVESTMENTS

Code	Credit Hour
MinE-828	3-0

CourseDescription

Risks involved in a mining venture, Phases of mining and evaluation of the risk of investing in a mine, Technical, social, political, and financial factors to make one mining investment better or worse, Rewards of investing in mines, Risk management process and application of compliance documentation, Develop the document parameters of the risk assessment task, Data requirement to complete the risk assessment task and identification of hazards, Potential hazards by reference to site circumstances, history and/or precedence, Process breakdown into steps or parts for detailed hazard identification, Potential variations from changes to work practices, systems or technology, Consequences in loss scenario and determination of risk level of the loss scenario, Acceptability of risks in conjunction with the appropriate party, Identification, analysis and documentation of the range of risk controls, Verification of feasible options for risk control by preliminary analysis and consideration, Decision making and selection of most appropriate risk control feasible options, Facilitation of actions directly, or through others, the course of action, Communication to involved parties relevant information related to new/revised work procedures, Reviewing of the processes, actions and controls to ensure continuing effectiveness, Audit of risk management process and work procedures to ensure compliance and effectiveness, Record keeping, production, & maintenance of risk management documentation and reports, Strategic decision making and risk analysis in surface mines, Means of Risk Assessment, Probabilistic Approaches and Simulation, Real time option Analysis.

Textbook:

1. Roger Moody, Robert Goodland, The Risks We Run: Mining, Communities and Political Risk Insurance.
2. Ron S. Kenett, Yossi Raanan, (2010), Operational Risk Management.
3. Jack Caldwell, (2013), Risk Assessment in Mining.
4. Jean-Michel Rendu, Risk Management in Evaluating Mineral Deposits.

ReferenceBook:

1. Thomas J O'Neil, Mine Investment Analysis.
2. Ian C. Runge, (1998), Mining Economics and Strategy.

Prerequisites:

Nil

ASSESSMENT SYSTEM FOR THEORY

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

Teaching Plan

Week No	Topics	Learning Outcomes
1	Introduction	Course Outline, objectives, teaching plan, assessment method, concepts review. Introduction to business risks management and decision making for mining investments.
2-4	Mining Risks and Phases	Overview of risks involved in a mining venture, Detailed exploration of the phases of mining, Evaluation of the risks of investing in a mine, Discussion on technical, social, political, and financial factors influencing mining investments.
5-6	Rewards and Risk Management in Mining Investments	Exploration of the rewards of investing in mines, Introduction to the risk management process and compliance documentation, Developing document parameters for risk assessment tasks.
6-8	Data and Hazard Identification	Identifying data requirements for completing risk assessments, Identifying potential hazards based on site circumstances, history, and precedence, Breaking down the process into steps for detailed hazard identification.
9	MIDTERM EXAM	
10-11	Risk Assessment and Analysis	Exploring potential variations due to changes in work practices, systems, or technology. Analyzing consequences in loss scenarios and determining the risk level. Assessing the acceptability of risks in conjunction with the appropriate parties
12-13	Risk Control and Decision Making	Identification, analysis, and documentation of a range of risk controls. Verifying feasible options for risk control through preliminary analysis. Decision-making and selecting the most appropriate risk control options.

14	Review and Audit	Reviewing processes, actions, and controls to ensure continuing effectiveness. Auditing risk management processes and work procedures for compliance and effectiveness. Record keeping, production, and maintenance of risk management documentation and reports.
15-16	Strategic Decision Making in Surface Mines	Strategic decision making and risk analysis in surface mines. Exploring means of risk assessment. Introduction to probabilistic approaches and simulations.
17	Advanced Risk Analysis Techniques	In-depth study of real-time option analysis. Case studies and practical applications.
18	END SEMESTER EXAM	