PLANNING AND OPTIMIZATION OF UNDERGROUND MINES

Code	Credit Hours
MinE-815	3-0

Course Description.

Introduction to underground Mines, Planning and Industrial practices in underground mines, Risk Analysis in underground mines, Mine Planning, Scheduling, Optimization and Economics, Geotechnical analysis, Equipment selection, Geology and Resource Modelling, Sustainability and Computer designing.

References / Textbooks

1. University of Wits, "Planning and Optimization of underground Mines"

Pre-Requisites: **Nil**

ASSESSMENT SYSTEM FOR THEORY

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

Teaching Plan

Week No	Topics	Learning Outcomes
1	Introduction to underground Mines	CourseOutline,objectives,teachingplan,assessmentmethod, conceptsreview. Introduction to underground mines and various minerals extracted via underground mine
2	Industrial practices	Introduction to various codes in practice for underground mines
3-4	Mine Planning, Scheduling, Optimization and Economics	A detail description of various factors to be considered during underground mine designing Underground mine scheduling and economical optimization of underground mining
5-6	Mine Planning	Underground Mine Planning and Designing Process
7-8	Risk Analysis	Various risk such as underground mine instabilities, mine gases and dusts.
9	**MID TERM EXAM**	

10-11	Geotechnical analysis	Geotechnical analysis of rock mass and various parameters governing the underground excavation
12-13	Equipment selection	Equipment selection in underground mining and its management
14-15	Geology and Resource Modelling	Various geostatistical modeling techniques for resource modelling
16	Sustainability	Sustainability, Environmental consideration, and reclamation of mine
17	Computer designing	Introduction to computer programs in mine planning and optimization such as block modelling.
18	**END SEMESTER EXAM**	