UMaT MINING ENGINNERING COURSE STRUTURE

MSC/MPhil Level

Table 2 Modules to be Run, Module Numbers and Names, and Credit Hours

Module No.	Module Name	Credit(s)
First Semester		
MN 351	Introduction to Computer Applications *	1
MN 261	Introduction to Mining Engineering**	1
MN 551	Research Methods*	1
MN 559	Applied Rock Mechanics*	1
MNP 561	Principles of Mine Planning and Design*	1
MNF 571	Time Value of Money and Financial Analysis*	1
MNH 578	Environmental Engineering in Mining*	1
MN 553	Operations Research	3
MN 555	Statistical Models	3
MN 557	Environmental Management	3
MN 550	Postgraduate Seminar	3
MN 563	Data Mining and Advanced Analysis	3
MN 565	Mine Management	3
Second Semester		
Rock Mechanics Option		
MN 554	Mine Economic and Financial Evaluation	3
MN 556	Field/Laboratory Work	3
MNR 578	Rock Dynamics	3
MNR 572	Surface Excavation Design and Analysis	3
MNR 574	Foundation Design and Analysis	3
MNR 584	Rock and Soil Slope Engineering	3
MNR 576	Underground Support Design	3
MNR 582	Rock Mass Characterisation	3
MN 562	Underground Excavation Design and Analysis	3
MNR 586	Mine Water Management	3
Mine Planning and Design Option		
MN 554	Mine Economic and Financial Evaluation	3

MN 556	Field/Laboratory Work	3
MNP 571	Principles of Mine Planning and Design	3
MNP 582	Surface Mine Planning, Design and Optimisation	3
MNP 584	Underground Mine Planning, Design and Optimisation	3
MNP 572	Geological Block Modelling	3
MNP 574	Physical Pit Design and Optimisation	3
MNP 576	Surface and Underground Fleet Management and Control	3
MNP 578	Production Schedule and Strategic Mine Planning	3
MNP 586	Ore Estimation, Reserve Statement and Grade Control	3
Explosive and Blasting Technology Option		
MN 554	Mine Economic and Financial Evaluation	3
MN 556	Field/Laboratory Work	3
MNB 578	Tunnelling and Underground Construction	3
MNB 584	Mining and Explosive Laws	3
MNB 572	Explosive Manufacture and Material Properties	3
MNB 582	Surface and Underground Computer-Aided Blast Design	3
MNB 586	Monitoring and Controlling Environmental Impact of Blasting	3
MNB 576	Advanced Drilling Technology	3
MNB 574	Special Blasting	3
MN 562	Underground Excavation Design and Analysis	3
Mine Machinery and Mechanisation Option		
MN 554	Mine Economic and Financial Evaluation	3
MN 556	Field/Laboratory Work	3
MNM 582	Mechatronics	3
MNM 576	Materials Handling	3
MNM 578	Mining Machinery and Design	3
MNM 572	Mineral Processing Equipment	3
MNM 584	Machinery Automation and Control	3
MNM 574	Mine Mechanisation	3
Mine Health, Safety and Environment Option		

MN 554	Mine Economic and Financial Evaluation	3
MN 556	Field/Laboratory Work	3
MNH 576	Occupational Health and Safety Management	3
MNH 578	Emergency Preparedness, Mine Rescue, and Fire Prevention	3
MNH 582	Accident Prevention, Hazards and Control System	3
MNH 572	Mine Environmental Sustainability	3
MNH 574	Environmental Monitoring and Modelling	3
MNH 584	Environmental Assessment and Audit	3
MNH 588	Occupational Hygiene and Mine Industrial Ergonomics	3
MNH 586	Subsurface Mine Climate and Ventilation	3
Mine Economic and Financial Evaluation Option		
MN 554	Mine Economic and Financial Evaluation	3
MN 556	Field/Laboratory Work	3
MNF 564	Mineral Economics	3
MNF 574	Estimation of Revenue and Costs	3
MNF 576	Capital Allowance and Mine Taxation	3
MNF 572	Cash Flow Analysis	3
MNF 578	Sensitivity and Risk Analysis	3
MNF 582	Investment Decision Analysis	3
MNF 584	Real Options Application to Mine Valuation	3
MNF 586	Liability and Capital Structure	3
Mineral Resources Management Option		
MN 554	Mine Economic and Financial Evaluation	3
MN 556	Field/Laboratory Work	3
MNE 564	Mineral Deposits	3
MNE 572	Computer Applications in Minerals Exploration	3
MNE 574	Accounting and Financial Reporting	3
MNE 576	Operations and Project Management	3
MNE 578	Mineral Resources Estimation	3
MNE 582	Sustainable Development and Corporate Social Responsibility	3

MNE 584	Mineral Exploration	3
Modules Taken Either Semesters		
MN 500	MSc Thesis	21
MN 560	MPhil Thesis	30
MN 550	MSc/MPhil Seminar	3

Depending on the option a candidate opts for, five (5) compulsory core modules shall be offered in the second semester.
** Preparatory Module*
*** Pre-requisite Module for Non-Mining Engineers.*

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