



BIKANER TECHNICAL UNIVERSITY, BIKANER

बीकानेर तकनीकी विश्वविद्यालय, बीकानेर

OFFICE OF THE DEAN ACADEMICS



SCHEME & SYLLABUS OF UNDERGRADUATE DEGREE COURSE

Mining Engineering



Effective for the students admitted in year 2021-22 and onwards.

**B.Tech. : Mining Engineering**
2nd Year - III Semester

THEORY											
SN	Category	Course Code	Course Title	Hours			Marks			Cr	
				L	T	P	Exm Hrs	IA	ETE		Total
1	UCB	3MI1 – 01	Numerical Techniques	3	0	0	3	30	70	100	3
2	DC	3MI4 – 02	Introduction to Basic Mining Engineering	3	0	0	3	30	70	100	3
3		3MI4 – 03	Basic and Applied Mine Geology	3	0	0	3	30	70	100	3
4		3MI4 – 04	Basic Mine Surveying	3	0	0	3	30	70	100	3
5		3MI4 – 05	Fundamentals of Rock Mechanics	3	0	0	3	30	70	100	3
6		3MI4 – 06	Underground Mining Machinery	3	0	0	3	30	70	100	3
				Sub Total	18	0	0		180	420	600
PRACTICAL & SESSIONAL											
7	DC	3MI4 – 20	Introduction to Basic Mining Engineering Lab	0	0	2	-	60	40	100	1
8		3MI4 – 21	Basic and Applied Mine Geology Lab	0	0	2	-	60	40	100	1
9		3MI4 – 22	Basic Mine Surveying Lab	0	0	2	-	60	40	100	1
10		3MI4 – 23	Fundamentals of Rock Mechanics Lab	0	0	2	-	60	40	100	1
11		3MI4 – 24	Underground Mining Machinery Lab	0	0	2	-	60	40	100	1
12	UI	3MI7 – 30	Industrial Training	0	0	1	-	60	40	100	1
13	UGE/CA	3MI8 – 00									1
			Sub- Total	0	0	1		360	240	600	7
			TOTAL OF III SEMESTER	18	0	11		540	660	1200	25

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment

**B.Tech. : Mining Engineering
2nd Year - IV Semester**

THEORY											
SN	Category	Course Code	Course Title	Hours			Marks			Cr	
				L	T	P	Exm Hrs	IA	ETE		Total
1	UCB	4MI1 – 01	Probability and Statistics for Mining	3	0	0	3	30	70	100	3
2	DC	4MI4 – 02	Rock Fragmentation Engineering	3	0	0	3	30	70	100	3
3		4MI4 – 03	Applied Mine Surveying	3	0	0	3	30	70	100	3
4		4MI4 – 04	Surface Mine Mechanization	3	0	0	3	30	70	100	3
5		4MI4 – 05	Safety, Health and Environment in Mining	3	0	0	3	30	70	100	4
6		4MI4 – 06	Applied Rock Mechanics	3	0	0	3	30	70	100	3
Sub Total				18	0	0		180	420	600	18
PRACTICAL & SESSIONAL											
7	DC	4MI4 – 20	Rock Fragmentation Engineering Lab	0	0	2	-	60	40	100	1
8		4MI4 – 21	Applied Mine Surveying Lab	0	0	2	-	60	40	100	1
9		4MI4 – 22	Surface Mine Mechanization Lab	0	0	2	-	60	40	100	1
10		4MI4 – 23	Safety, Health and Environment in Mining Lab	0	0	2	-	60	40	100	1
11		4MI4 – 24	Applied Rock Mechanics Lab	0	0	2	-	60	40	100	1
12		4MI4 – 25	Introductory Computing Lab	0	0	2	-	60	40	100	1
13	UGE/CA	4MI8 – 00									1
Sub- Total				0	0	12		360	240	600	7
TOTAL OF IV SEMESTER				18	0	12		540	660	1200	25

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment

**B.Tech. : Mining Engineering
3rd Year - V Semester**

THEORY											
SN	Category	Course Code	Course Title	Hours			Marks			Cr	
				L	T	P	Exm Hrs	IA	ETE		Total
1	DC	5MI4 – 01	Surface Mining	3	0	0	3	30	70	100	3
2		5MI4 – 02	Underground Coal Mining	3	0	0	3	30	70	100	3
3		5MI4 – 03	Mine Ventilation	3	0	0	3	30	70	100	3
4		5MI4 – 04	Dimensional Stone Mining	3	0	0	3	30	70	100	3
5		5MI4 – 05	Mine Economics	3	0	0	3	30	70	100	3
6	DE	5MI5 – 11	Remote Sensing and GIS	2	0	0	2	30	70	100	2
		5MI5 – 12	Tunnel Engineering								
		5MI5 – 13	Numerical Methods and Simulation								
7		5MI5 – 14	Mining Closure Planning	2	0	0	2	30	70	100	2
		5MI5 – 15	Mine optimization/ Mine Systems Engineering								
		5MI5 – 16	Rocks Excavation Engineering								
			Sub Total	19	0	0		210	490	700	19
PRACTICAL & SESSIONAL											
8	DC	5MI4 – 20	Surface Mining Lab	0	0	2	-	60	40	100	1
9		5MI4 – 21	Underground Coal Mining Lab	0	0	2	-	60	40	100	1
10		5MI4 – 22	Mine Ventilation Lab	0	0	2	-	60	40	100	1
11	UI	5MI7 – 30	Industrial Training	0	0	1	-	60	40	100	3
12	UGE/CA	5MI8 – 00									1
			Sub- Total	0	0	7		240	160	400	7
			TOTAL OF V SEMESTER	19	0	7		450	650	1100	26

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment

**B.Tech. : Mining Engineering**
3rd Year - VI Semester

THEORY											
SN	Category	Course Code	Course Title	Hours			Marks			Cr	
				L	T	P	Exm Hrs	IA	ETE		Total
1	DC	6MI4 – 01	Metaliferrous Mining	3	0	0	3	30	70	100	3
2		6MI4 – 02	Mine Planning and Design	3	0	0	3	30	70	100	3
3		6MI4 – 03	Mine Hazard and Management	3	0	0	3	30	70	100	3
4		6MI4 – 04	Mineral Processing	3	0	0	3	30	70	100	3
5		6MI4 – 05	Mine Legislation	3	0	0	3	30	70	100	3
6	DE	6MI5 – 11	Disaster Management in Mines	2	0	0	2	30	70	100	2
7		6MI5 – 12	Experimental Stress Analysis								
8		6MI5 – 13	Slope Engineering								
Sub Total				17	0	0		180	420	600	17
PRACTICAL & SESSIONAL											
9	DC	6MI4 – 20	Metaliferrous Mining Lab	0	0	2		60	40	100	1
10		6MI4 – 21	Mine Planning and Design Lab	0	0	2		60	40	100	1
11		6MI4 – 22	Mineral Processing Lab	0	0	2		60	40	100	1
12	UI	6MI7 – 50	Mini Project	0	0	3		60	40	100	2
13	UGE	6MI8 – 00									2
Sub- Total				0	0	9		240	160	400	7
TOTAL OF VI SEMESTER				19	0	9		420	580	1000	24

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment

**B.Tech. : Mining Engineering**
4th Year - VII Semester

THEORY											
SN	Category	Course Code	Course Title	Hours			Marks				Cr
				L	T	P	Exm Hrs	IA	ETE	Total	
1	DC	7MI4 - 01	Environmental Management in Mines	3	0	0	3	30	70	100	3
2	DE	7MI5 - 11	Geo-statistics	2	0	0	3	30	70	100	2
		7MI5 - 12	Finite Element Method								
		7MI5 - 13	Maintenance Management								
3	UE		University Open Elective-1	3	0	0	3	30	70	100	3
Sub Total				8	0	0		90	210	300	8
PRACTICAL & SESSIONAL											
4	DC	7MI4 - 20	Environmental Management in Mines Lab	0	0	2	-	60	40	100	1
5	UI	7MI7 - 40	Seminar	0	0	1	-	60	40	100	3
6		7MI7 - 50	Project	0	0	3	-	60	40	100	2
7	UGE	7MI8 - 00									1
Sub- Total				0	0	6		180	120	300	7
TOTAL OF VII SEMESTER				8	0	6		270	330	600	15

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment

**B.Tech. : Mining Engineering**
4th Year - VIII Semester

THEORY											
SN	Category	Course Code	Course Title	Hours			Marks			Cr	
				L	T	P	Exm Hrs	IA	ETE		Total
1	UE		University Open Elective-2	3	0	0	3	30	70	100	3
			Sub Total	3	0	0	3	30	70	100	3
PRACTICAL & SESSIONAL											
2	UI	8MI4 – 50	Project	0	0	3	-	60	40	100	4
3		8MI7 – 40	Seminar	0	0	2	-	60	40	100	2
4	UGE	8MI8 – 00		0	0	0					2
			Sub- Total	0	0	5		120	80	200	8
			TOTAL OF VIII SEMESTER	3	0	5		150	150	300	11

L: Lecture, T: Tutorial, P: Practical, Cr: Credits, ETE: End Term Exam, IA: Internal Assessment



List of Open Electives Offered by Mining Engineering				
Subject Code	Title		Subject Code	Title
Open Elective - I			Open Elective - II	
7MI6-60.1	Tunnel Engineering		8MI6-60.1	Numerical Methods and Simulations
7MI6-60.2	Maintenance Management		8MI6-60.2	Surveying Earth work and Measurement
7MI6-60.3	Remote Sensing and GIS		8MI6-60.3	Slope Engineering