

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI**  
**B.E. in Mining Engineering**  
**Scheme of Teaching and Examinations 2022**  
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)  
(Effective from the academic year 2023-24)

V SEMESTER													
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	HSMS	BMN501	Mine Management and Economic	TD: MN PSB: MN	3	0	0		03	50	50	100	3
2	IPCC	BMN502	Mine Machinery	TD: MN PSB: MN	3	0	2		03	50	50	100	4
3	PCC	BMN503	Surface Mining	TD: MN PSB: MN	4	0	0		03	50	50	100	4
4	PCCL	BMNL504	Rock Mechanics Lab	TD: MN PSB: MN	0	0	2		03	50	50	100	1
5	PEC	BMN515x	Professional Elective Course	TD: MN PSB: MN	3	0	0		03	50	50	100	3
6	PROJ	BMN586	Mini Project	TD: MN PSB: MN	0	0	4		03	100		100	2
7	AEC	BRMK557	<b>Research Methodology and IPR</b>		2	2	0		02	50	50	100	3
8	MC	BESK508	Environmental Studies		2	0	0		02	50	50	100	2
9	MC	BNSK559	National Service Scheme (NSS)	NSS coordinator	0	0	2			100		100	0
		BPEK559	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		BYOK559	Yoga	Yoga Teacher									
									<b>Total</b>	<b>550</b>	<b>350</b>	<b>900</b>	<b>22</b>
<b>Professional Elective Course</b>													
BMN515A	Environmental Management in Surface Mines			BMN515C	Mine Environmental Engineering								
BMN515B	Ground Control												

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VI SEMESTER													
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question and Answer Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	IPCC	BMN601	Mine Ventilation	TD: MN PSB: MN	3	0	2		03	50	50	100	4
2	PCC	BMN602	Underground Metal Mining	TD: MN PSB: MN	4	0	0		03	50	50	100	4
3	PEC	BMN613x	Professional Elective Course	TD: MN PSB: MN	3	0	0		03	50	50	100	3
4	OEC	BMN654x	Open Elective Course	TD: MN PSB: MN	3	0	0		03	50	50	100	3
5	PROJ	BMN685	Project Phase I	TD: MN PSB: MN	0	0	4		03	100	--	100	2
6	PCCL	BMNL606	Numerical Modelling Lab	TD: MN PSB: MN	0	0	2		03	50	50	100	1
7	AEC/SDC	BMN657x	Ability Enhancement Course/Skill Development Course V	TD: MN PSB: MN	If the course is offered as a Theory				01	50	50	100	1
					1	0	0						
					If course is offered as a practical								
					0	0	2						
8	MC	BNSK658	National Service Scheme (NSS)	NSS coordinator	0	0	2			100	---	100	0
		BPEK658	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		BYOK658	Yoga	Yoga Teacher									
9	IKS	BIKS609	Indian Knowledge System		1	0	0		01	100	0	100	0
<b>Total</b>									<b>600</b>	<b>300</b>	<b>900</b>	<b>18</b>	
<b>Professional Elective Course</b>													
BMN613A		Open Pit Slope Analysis and Design			BMN613C		Occupational Health & Safety						

BMN613B	Underground Mine Planning & Design	BMN613D	Mine Automation
<b>Open Elective Course</b>			
BMN654A	Introduction to Mining	BMN654C	Mining, Energy and Climate Change
BMN654B	Introductory Rock Mechanics		
<b>Ability Enhancement Course / Skill Enhancement Course-V</b>			
BMN657A(0:0:2)	Introduction to IOT	BMN657C(1:0:0)	Industry 4.0
BMN657B(1:0:0)	Gender Sensitisation	BMN657D(0:0:2)	Data analytics with Excel

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**B.E. in Mining Engineering**  
**Scheme of Teaching and Examinations 2022**  
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)  
(Effective from the academic year 2023-24)

**Scheme A- VII SEMESTER (Swappable VII and VIII SEMESTER)**

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question and Answer Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	IPCC	BMN701	Mine System Engineering	TD: MN PSB: MN	3	0	2		03	50	50	100	4
2	IPCC	BMN702	Mineral Processing	TD: MN PSB: MN	3	0	2		03	50	50	100	4
3	PCC	BMN703	Mine Legislation	TD: MN PSB: MN	4	0	0		03	50	50	100	4
4	PEC	BMN714x	Professional Elective Course / (Online)	TD: MN PSB: MN	3	0	0		03	50	50	100	3
5	OEC	BMN755x	Open Elective Course / (online)	TD: MN PSB: MN	3	0	0		01	50	50	100	3
6	PROJ	BMN786	Major Project Phase-II	TD: MN PSB: MN	0	0	12		03	100	100	200	6
										<b>350</b>	<b>350</b>	<b>700</b>	<b>24</b>
<b>Professional Elective Course</b>													
BMN714A	Surface Mine Planning and Design			BMN714C	Advanced Mine Ventilation								
BMN714B	Mine Safety Engineering			BMN714D	Mine Geo-statistics								

## Open Elective Course

BMN755A	Introduction to Mine Surveying	BMN755C	Underground Construction Engineering
BMN755B	Introduction to Rock Breakage		

**PCC:** Professional Core Course, **PCCL:** Professional Core Course laboratory, **PEC:** Professional Elective Course, **OEC:** Open Elective Course **PR:** Project Work, **L:** Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:** Paper Setting department, **OEC:** Open Elective Course, **PEC:** Professional Elective Course. **PROJ:** Project work

**Note: VII and VIII semesters of IV years of the program**

(1) Institutions can swap the VII and VIII Semester Schemes of Teaching and Examinations to accommodate research internships/ industry internships after the VI semester.

(2) Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether the VII or VIII semesters is completed during the beginning of the IV year or the later part of IV years of the program.

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

## B.E. in Mining Engineering

## Scheme of Teaching and Examinations 2022

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

(Effective from the academic year 2023-24)

## Scheme A- VIII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question and Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	PEC	Bxx801x	Professional Elective (Online Courses)		3	0	0		03	50	50	100	3
2	OEC	Bxx802x	Open Elective (Online Courses)		3	0	0		01	50	50	100	3
3	INT	Bxx803	Internship (Industry/Research) (14 - 20 weeks)		0	0	12		03	100	100	200	10
										<b>200</b>	<b>200</b>	<b>400</b>	<b>16</b>

## Professional Elective Course (Online courses)

Bxx801A	Fundamentals of environmental pollution and control	Bxx801C	Bulk Material Transport
Bxx801B	Mine Closure and sustainability planning	Bxx801D	

## Open Elective Courses (Online Courses)

Bxx802A	Drilling and Blasting Technology	Bxx802C	Surface mining technology
Bxx802B	Mining Machinery	Bxx802D	

**L:** Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:**

Paper Setting department, **OEC**: Open Elective Course, **PEC**: Professional Elective Course. **PROJ**: Project work, **INT**: Industry Internship / Research Internship / Rural Internship

**Note: VII and VIII semesters of IV years of the program**

**Swapping Facility**

- Institutions can swap VII and VIII Semester Scheme of Teaching and Examinations to accommodate **research internships/ industry internships/Rural Internship** after the VI semester.
- Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether VII or VIII semester is completed during the beginning of IV year or later part of IV year of the program.

**Elucidation:**

At the beginning of IV years of the program i.e., after VI semester, VII semester classwork and VIII semester **Research Internship /Industrial Internship / Rural Internship** shall be permitted to be operated simultaneously by the University so that students have ample opportunity for an internship. In other words, a good percentage of the class shall attend VII semester classwork and a similar percentage of others shall attend to Research Internship or Industrial Internship or Rural Internship.

Research/Industrial /Rural Internship shall be carried out at an Industry, NGO, MSME, Innovation center, Incubation centre, Start-up, centre of Excellence (CoE), Study Centre established in the parent institute and /or at reputed research organizations/institutes.

The mandatory Research internship /Industry internship / Rural Internships for 14 to 20 weeks. The internship shall be considered as a head of passing and shall be considered for the award of a degree. Those, who do not take up/complete the internship shall be declared to fail and shall have to complete it during the subsequent University examination after satisfying the internship requirements.

**Research internship:** A research internship is intended to offer the flavor of current research going on in the research field. It helps students get familiarized with the field and imparts the skill required for carrying out research.

**Industry internship:** Is an extended period of work experience undertaken by students to supplement their degree for professional development. It also helps them learn to overcome unexpected obstacles and successfully navigate organizations, perspectives, and cultures. Dealing with contingencies helps students recognize, appreciate, and adapt to organizational realities by tempering their knowledge with practical constraints.

**Rural Internship:** Rural development internship is an initiative of Unnat Bharat Abhiyan Cell, RGIT in association with AICTE to involve students of all departments studying in different academic years for exploring various opportunities in techno-social fields, to connect and work with Rural India for their upliftment.

The faculty coordinator or mentor has to monitor the student's internship progress and interact with them to guide for the successful completion of the internship.

The students are permitted to carry out the internship anywhere in India or abroad. University shall not bear any expenses incurred in respect of the internship.

With the consent of the internal guide and Principal of the Institution, students shall be allowed to carry out the internship at their hometown (**within or outside the state or abroad**), provided favorable facilities are available for the internship and the student remains regularly in contact with the internal guide. **University shall not bear any cost involved in carrying out the internship by students.** However, students can receive any financial assistance extended by the organization.

**Professional Elective /Open Elective Course:**These are ONLINE courses suggested by the respective Board of Studies. Details of these courses shall be made available for students on the VTU web portal.

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

## B.E. in Mining Engineering

## Scheme of Teaching and Examinations 2022

## Scheme –B- VI SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	IPCC	BMN601	Mine Ventilation	TD: MN PSB: MN	3	0	2		03	50	50	100	4
2	PCC	BMN602	Underground Metal Mining	TD: MN PSB: MN	4	0	0		03	50	50	100	4
3	PEC	BMN613x	Professional Elective Course	TD: MN PSB: MN	3	0	0		03	50	50	100	3
4	OEC	BMN654x	Open Elective Course	TD: MN PSB: MN	3	0	0		03	50	50	100	3
5	PCCL	BMNL606	Numerical Modelling Lab	TD: MN PSB: MN	0	0	2		03	50	50	100	1
6	AEC/SDC	BMN657x	Ability Enhancement Course/Skill Development Course V	TD: MN PSB: MN TD: MN PSB: MN	If the course is offered as a Theory				01	50	50	100	1
					1	0	0						
					If course is offered as a practical								
					0	0	2						
7	MC	BNSK658	National Service Scheme (NSS)	NSS coordinator	0	0	2			100	---	100	0
		BPEK658	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		BYOK658	Yoga	Yoga Teacher									
8	IKS	BIKS609	Indian Knowledge System		1	0	0		01	100	0	100	0
									<b>Total</b>	<b>500</b>	<b>300</b>	<b>800</b>	<b>16</b>
<b>Professional Elective Course</b>													
BMN613A		Open Pit Slope Analysis and Design			BMN613C		Occupational Health & Safety						
BMN613B		Underground Mine Planning & Design			BMN613D		Mine Automation						
<b>Open Elective Course</b>													
BMN654A		Introduction to Mining			BMN654C		Mining, Energy and Climate Change						
BMN654B		Introductory Rock Mechanics			BMN654D								
<b>Ability Enhancement Course / Skill Enhancement Course-V</b>													

BXX657A(0:0:2)	Introduction to IOT	BXX657C(1:0:0)	Industry 4.0
BXX657B(1:0:0)	Gender Sensitisation	BXX657D(1:0:0)	Total station application in Mining Engineering

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

**B.E. in Mining Engineering****Scheme of Teaching and Examinations 2022**

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

(Effective from the academic year 2023-24)

Scheme B-VII and VIII semesters for the candidate those whose seek an internship with project work ( )

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	IPCC	BMN701	To be completed in 5 <sup>th</sup> /6 <sup>th</sup> semester		3	0	2		03	50	50	100	4
2	IPCC	BMN702	To be completed in 5 <sup>th</sup> /6 <sup>th</sup> semester		3	0	2		03	50	50	100	4
3	PCC	BMN703	To be completed in the 6 <sup>th</sup> semester		4	0	0		03	50	50	100	3
4	PEC	BMN714x	Professional Elective Course (MOOC Courses )		3	0	0		03	50	50	100	3
5	OEC	BMN755x	Open Elective Courses(MOOC courses)		3	0	0		01	50	50	100	3
1	PEC	Bxx801x	Professional Elective (MOOC Courses)		3	0	0		03	50	50	100	3
2	OEC	Bxx802x	Open Elective (MOOC Courses)		3	0	0		01	50	50	100	3
3	PROJ	BXX881	Project - outcome of training		0	0	12		03	100	100	200	9
4	INT	Bxx802	Internship (Industry/Research) (02 semesters)		0	0	12		03	100	100	200	10
										<b>200</b>	<b>200</b>	<b>400</b>	<b>42</b>