

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI													
B.E. in Mechatronics Engineering													
Scheme of Teaching and Examinations 2022													
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)													
(Effective from the academic year 2023-24)													
III SEMESTER													
Sl. No	Course	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	BSC	BMT301	Mechanics of Solids and Fluids	TD: Mechatronics PSB: Mechatronics	2	2	0		03	50	50	100	3
2	IPCC	BMT302	Analog and Digital Electronics	TD: Mechatronics PSB: Mechatronics	3	0	2		03	50	50	100	4
3	IPCC	BMT303	Material Science and Manufacturing Technology	TD: Mechatronics PSB: Mechatronics	3	0	2		03	50	50	100	4
4	PCC	BMT304	Computer Organization and Architecture	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
5	PCCL	BMT305	Computer Aided Machine Drawing	TD: Mechatronics PSB: Mechatronics	0	0	2		03	50	50	100	1
6	ESC	BMT306x	ESC/ETC/PLC	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
7	UHV	BSCK307	Social Connect and Responsibility	Any Department	0	0	2		01	100	---	100	1
8	AEC/ SEC	BMT358x	Ability Enhancement Course/Skill Enhancement Course - III	TD: Mechatronics PSB: Mechatronics	If the course is a Theory				01	50	50	100	1
					1	0	0						
					If a course is a laboratory				02				
					0	0	2						
9	MC	BNSK359	National Service Scheme (NSS)	NSS coordinator	0	0	2			100	---	100	0
		BPEK359	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		BYOK359	Yoga	Yoga Teacher									
									Total	550	350	900	20
PCC: Professional Core Course, PCCL: Professional Core Course laboratory, UHV: Universal Human Value Course, MC: Mandatory Course (Non-credit), AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, L: Lecture, T: Tutorial, P: Practical S= SDA: Skill Development Activity, CIE: Continuous Internal Evaluation, SEE:													

Semester End Evaluation. K : This letter in the course code indicates common to all the stream of engineering. ESC: Engineering Science Course, ETC: Emerging Technology Course, PLC: Programming Language Course			
.			
Engineering Science Course (ESC/ETC/PLC)			
BMT306A	Analog Communication Systems	BMT306C	Python Programming
BMT306B	Signals and Systems	BMT306D	Product Life Cycle Management
Ability Enhancement Course – III			
BMT358A	Programming in Python (002)	BMT358C	PCB Design Technology (002)
BMT358B	Trends in Digital Manufacturing	BMT358D	Robotics Ecosystem

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

IV 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	Self -Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	PCC	BMT401	Microcontrollers and applications	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
2	IPCC	BMT402	Electrical Drives and Control	TD: Mechatronics PSB: Mechatronics	3	0	2		03	50	50	100	4
3	IPCC	BMT403	Hydraulics and Pneumatics	TD: Mechatronics PSB: Mechatronics	4	0	0		03	50	50	100	4
4	PCCL	BMT404	Mechatronics Lab	TD: Mechatronics PSB: Mechatronics	0	0	2		03	50	50	100	1
5	ESC	BMT405x	ESC/ETC/PLC	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
6	AEC/ SEC	BMT456x	Ability Enhancement Course/Skill Enhancement Course- IV	TD: Mechatronics PSB: Mechatronics	If the course is Theory				01	50	50	100	1
					1	0	0						
					If the course is a lab				02				
0	0	2											
7	BSC	BBOK407	Biology For Engineers	TD / PSB: BT, CHE,	3	0	0		03	50	50	100	3
8	UHV	BUHK408	Universal human values course	Any Department	1	0	0		01	50	50	100	1
9	MC	BNSK459	National Service Scheme (NSS)	NSS coordinator	0	0	2		100	---	100	0	
		BPEK459	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		BYOK459	Yoga	Yoga Teacher									
Total									500	400	900	20	

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **UHV:** Universal Human Value Course, **MC:** Mandatory Course (Non-credit), **AEC:** Ability Enhancement Course, **SEC:** Skill Enhancement Course, **L:** Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **K :** This letter in the course code indicates common to all the stream of engineering.

Ability Enhancement Course / Skill Enhancement Course - IV

BMT456A	Mechanism Design and Animation (0-0-2)	BMT456C	CNC programming and simulation (0-0-2)
BMT456B	3-D Printing Technology (0-0-2)	BMT456D	IoT (0-0-2)

Engineering Science Course (ESC/ETC/PLC)

BMT405A	Robot Operating System	BMT405C	Renewable Sources of Energy
BMT405B	IIOT	BMT405D	Operations Research

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
B.E. in Mechatronics 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	Self-Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	HSMS	BMT501	Industrial Management and Entrepreneurship	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
2	IPCC	BMT502	Micro and Smart System Technology	TD: Mechatronics PSB: Mechatronics	3	0	2		03	50	50	100	4
3	PCC	BMT503	Control Theory and Virtual Instrumentation	TD: Mechatronics PSB: Mechatronics	3	2	0		03	50	50	100	4
4	PCCL	BMT504L	Virtual Instrumentation Lab	TD: Mechatronics PSB: Mechatronics	0	0	2		03	50	50	100	1
5	PEC	BMT515x	Professional Elective Course	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
6	PROJ	BMT586	Mini Project	TD: Mechatronics PSB: Mechatronics	0	0	4		03	100		100	2
7	AEC	BRMK557	Research Methodology and IPR	TD: Mechatronics PSB: Mechatronics	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									
Total									500	300	800	22	
Professional Elective Course													
BMT515A	Theory of Machines and Machine Design			BMT515C	Artificial Intelligence for Mechatronics								
BMT515B	Computer Integrated Manufacturing			BMT515D	Mechatronics System Design								

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

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	Self -Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	IPCC	BMT601	Programmable Logic Controller and SCADA Technology	TD: Mechatronics PSB: Mechatronics	3	0	2		03	50	50	100	4
2	PCC	BMT602	Industrial Robotics	TD: Mechatronics PSB: Mechatronics	4	0	0		03	50	50	100	4
3	PEC	BMT613x	Professional Elective Course	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
4	OEC	BMT654x	Open Elective Course	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
5	PROJ	BMT685	Project Phase I	TD: Mechatronics PSB: Mechatronics	0	0	4		03	100	--	100	2
6	PCCL	BMT606L	Robotics Lab	TD: Mechatronics PSB: Mechatronics	0	0	2		03	50	50	100	1
7	AEC/SDC	BMT657x	Ability Enhancement Course/Skill Development Course V	TD: Mechatronics PSB: Mechatronics	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									
Total									500	300	800	18	
Professional Elective Course													
BMT613A	Power Electronics			BMT613C	Automotive Electronics and Hybrid Vehicles								
BMT613B	Smart Factory and Industry 4.0			BMT613D	Signal Processing								

Open Elective Course			
BMT654A	Automation in Manufacturing	BMT654C	Mechatronics Engineering
BMT654B	Electric and Hybrid Vehicles	BMT654D	Micro Electro-Mechanical Systems
Ability Enhancement Course / Skill Enhancement Course-V			
BMT657A	MATLAB for Mechatronics (0-0-2)	BMT657C	Finite Element Modelling and Analysis (0-0-2)
BMT657B	Embedded systems (0-0-2)	BMT657D	AI and ML (0-0-2)

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

VII 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	Self -Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	IPCC	BMT701	Thermal Engineering	TD: Mechatronics PSB: Mechatronics	3	0	2		03	50	50	100	4
2	IPCC	BMT702	Introduction to HDL	TD: Mechatronics PSB: Mechatronics	3	0	2		03	50	50	100	4
3	PCC	BMT703	Industrial Automation	TD: Mechatronics PSB: Mechatronics	4	0	0		03	50	50	100	4
4	PEC	BMT714x	Professional Elective Course	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
5	OEC	BMT755x	Open Elective Course	TD: Mechatronics PSB: Mechatronics	3	0	0		01	50	50	100	3
6	PROJ	BMT786	Major Project Phase-II	TD: Mechatronics PSB: Mechatronics	0	0	12		03	100	100	200	6
										400	300	700	24
Professional Elective Course													
BMT714A	Digital Image Processing and Robot Vision			BMT801C	Control Systems and Engineering								
BMT714B	Digital Controllers			BMT801D	Additive Manufacturing								
Open Elective Course													
BMT755A	Introduction to Smart Factory and Industry 4.0			BMT755C	Robotics for Industry								
BMT755B	Virtual instrumentation			BMT755D	PLC and SCADA Technology								

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

VIII SEMESTER (Swappable VII and VIII 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	Self - Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	PEC	BMT801x	Professional Elective (Online Courses)	TD: Mechatronics PSB: Mechatronics	3	0	0		03	50	50	100	3
2	OEC	BMT802x	Open Elective (Online Courses)	TD: Mechatronics PSB: Mechatronics	3	0	0		01	50	50	100	3
3	INT	BMT803	Internship (Industry/Research) (14 - 20 weeks)		0	0	12		03	100	100	200	10
										200	200	400	16
Professional Elective Course (Online courses)													
BMT801A				BMT801C									
BMT801B				BMT801D									
Open Elective Courses (Online Courses)													
BMT802A				BMT802C									
BMT802B				BMT802D									