

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

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	PCC	BBM301	Mathematics – III for BM	TD: Maths PSB: Maths	3	0	0		03	50	50	100	3
2	IPCC	BBM302	Analog Electronic Circuits	TD: BM PSB: EI/BM/ML	3	0	2		03	50	50	100	4
3	IPCC	BBM303	Digital Design and HDL	TD: BM PSB: EI/BM/ML	3	0	2		03	50	50	100	4
4	PCC	BBM304	Instrumentation, Measurements and Biomedical Transducers	TD: BM PSB: EI/BM/ML	3	0	0		03	50	50	100	3
5	PCCL	BBML305	Measurement and Biomedical Transducers Lab	TD: BM PSB: EI/BM/ML	0	0	2		03	50	50	100	1
6	ESC	BBM306x	ESC/ETC/PLC	TD: BM PSB: EI/BM/ML	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	BBM358x	Ability Enhancement Course/Skill Enhancement Course - III		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
<p>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</p>													

Engineering Science Course (ESC/ETC/PLC)			
BBM306A	Micro Electro Mechanical Systems [MEMS]	BBM306C	Nano Science and Nano Technology
BBM306B	Operating Systems	BBM306D	Power Electronics
Ability Enhancement Course – III			
BBM358A	Human Anatomy and Physiology	BBM358C	Digital Design Lab using Pspice / MultiSIM
BBM358B	Network Analysis	BBM358D	AEC Lab using Pspice / MultiSIM
<p>Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practicals of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (B.E./B.Tech.) 2022-23 may please be referred.</p> <p>National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of degree.</p>			

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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	BBM401	Signal Conditioning and Data Acquisition Circuits	TD: BM PSB: EI/BM/ML	3	0	0		03	50	50	100	3
2	IPCC	BBM402	Embedded Controllers	TD: BM PSB: EI/BM/ML	3	0	2		03	50	50	100	4
3	IPCC	BBM403	Java Programming	TD: BM PSB: EI/BM/ML	4	0	0		03	50	50	100	4
4	PCCL	BBML404	Signal Conditioning and Data Acquisition Circuits Lab	TD: BM PSB: EI/BM/ML	0	0	2		03	50	50	100	1
5	ESC	BBM405x	ESC/ETC/PLC	TD: BM PSB: EI/BM/ML	3	0	0		03	50	50	100	3
6	AEC/ SEC	BBM456x	Ability Enhancement Course/Skill Enhancement Course- IV	TD and PSB: Concerned department	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.

Engineering Science Course (ESC/ETC/PLC)

BBM405A	Biomedical Instrumentation	BBM405C	Web Technology
BBM405B	Bioelectric Phenomena	BBM405D	Mathematics for Biomedical

Ability Enhancement Course / Skill Enhancement Course - IV

BBM456A	Programming in MATLAB	BBM456C	Signal Conditioning Lab using Pspice / MultiSIM
BBM456B	Bioinstrumentation Techniques	BBM456D	Python Programming for Instrumentation

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