

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
B.E. in Automation & Robotics
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	PCC	BRA301	Fundamentals of Robotics & Applications	TD- ME, AU, IM PSB-ME	3	0	0		03	50	50	100	3
2	IPCC	BRA302	Fabrication methods of Robotic Components	TD: ME, AU, IM PSB- ME	3	0	2		03	50	50	100	4
3	IPCC	BRA303	Analog & Digital Electronic Circuits	TD: E&CE, TC, ET, EEE PSB-E&CE, EEE	3	0	2		03	50	50	100	4
4	PCC	BRA304	Mechanics of Solids & Fluids	TD- ME, AU, IM PSB-ME	3	0	0		03	50	50	100	3
5	PCCL	BRAL305	Robotic systems drawing & standards lab	TD- ME, AU, IM PSB-ME	0	0	2		03	50	50	100	1
6	ESC	BRA306x	ESC/ETC/PLC	TD: ME, CS&E, E&CE, EEE PSB:RESPECTIVE BOARD	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	BRA358x	Ability Enhancement Course/Skill Enhancement Course - III		If the course is a Theory				02	50	50	100	1
					2	0	0						
					If a course is a laboratory				03				
					0	0	3						
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)

BRA306A	Basic Communication System	BRA306C	Linear Integrated Circuits
BRA306B	Robot Vision	BRA306D	Data structure & Applications

Ability Enhancement Course – III

BRA358A	Introduction to Python	BRA358C	Fundamentals of Virtual Reality APP Development
BRA358B	Applications of MATLAB	BRA358D	Introduction to C++

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.

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.

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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	BRA401	Measurement systems	TD: EE, E&CE, ME PSB: ME	3	0	0		03	50	50	100	3
2	IPCC	BRA402	Microcontrollers	TD: EE, E&CE, TC PSB: E&CE	3	0	2		03	50	50	100	4
3	IPCC	BRA403	Robot, Kinematics, Dynamics, and control	TD: ME, IP, AU PSB: ME	4	0	0		03	50	50	100	4
4	PCCL	BRAL404	Robot Programming & Simulation Lab	TD: BT, CHE, ME PSB: BT	0	0	2		03	50	50	100	1
5	ESC	BRA405x	ESC/ETC/PLC	TD: ME, CS&E, E&CE, EEE PSB: RESPECTIVE BOARD	3	0	0		03	50	50	100	3
6	AEC/ SEC	BRA456x	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						
4	BSC	BOK407	Biology For Engineers	TD / PSB: BT, CHE,	3	0	0		03	50	50	100	3
7	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

BRA456A	Introduction to AI and ML	BRA456C	Supervisory Control & Data Acquisition System (SCADA)
BRA456B	Embedded C Basics	BRA456D	Introduction to Raspberry Pi Controllers

Engineering Science Course (ESC/ETC/PLC)

BRA405A	Fuzzy logic to Robotics	BRA405C	Sensors and Actuators
BRA405B	Unmanned Aerial Vehicles (UAV)	BRA405D	Smart Materials

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