

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

**B.E. in Biotechnology****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	BBT301	Cell Biology and Genetics	TD: BT PSB: BT	3	0	0		03	50	50	100	3
2	IPCC	BBT302	Unit Operations + Lab	TD: BT PSB: BT	3	0	2		03	50	50	100	4
3	IPCC	BBT303	Biochemistry +Lab	TD: BT PSB: BT	3	0	2		03	50	50	100	4
4	PCC	BBT304	Microbiology	TD: BT PSB: BT	3	0	0		03	50	50	100	3
5	PCCL	BBTL305	Microbiology Lab	TD: BT PSB: BT	0	0	2		03	50	50	100	1
6	ESC	BBT306x	Engineering Science Course	TD: BT PSB: BT	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	BBT358x	Ability Enhancement Course/Skill Enhancement Course - III	TD: BT PSB: BT	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									
<b>Total</b>										<b>550</b>	<b>350</b>	<b>900</b>	<b>20</b>

**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. <b>K</b> : 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.			
<b>Engineering Science Course</b>			
BBT306A	Python Programming	BBT306C	R programming for Biologists
BBT306B	Human Anatomy and Physiology	BBT306D	Plant Physiology and Phyto-hormones
<b>Ability Enhancement Course – III</b>			
BBT358A	Bio-Lab Management and Risk Assessment	BBTL358C	Analysis Of Dairy Products Lab
BBT358B	Data presentation, Error Analysis and Inferences	BBT358D	Biodiversity and Conservation Law
<p><b>Professional Core Course (IPCC):</b> 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><b>National Service Scheme /Physical Education/Yoga:</b> 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	BBT401	Molecular Biology & Genetic Engineering	TD: BT PSB: BT	3	0	0		03	50	50	100	3
2	IPCC	BBT402	Biostatistics and Tools + Lab	TD: Maths/BT PSB: Maths/BT	3	0	2		03	50	50	100	4
3	IPCC	BBT403	Immunotechnology + Lab	TD: BT PSB: BT	3	0	2		03	50	50	100	4
4	PCCL	BBTL404	Molecular Biology & Genetic Engineering Lab	TD: BT PSB: BT	0	0	2		03	50	50	100	1
5	ESC	BBT405x	Engineering Science Course	TD: BT PSB: BT	3	0	0		03	50	50	100	3
6	AEC/ SEC	BBT456x	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	BBOK407	Biology For Engineers (Dr VM, SCE)	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									
<b>Total</b>									<b>500</b>	<b>400</b>	<b>900</b>	<b>20</b>	

**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

BBT456A	Hydroponics, Aquaponics and Aeroponics	BBTL456C	Extraction methods and herbal products lab
BBTL456B	Water Analysis Lab	BBT456D	Biopesticides and Biofertilizers

#### Engineering Science Course

BBT405A	Biochemical Thermodynamics	BBT405C	Bioprocess Principles and Stoichiometry
BBT405B	Marine Bioresources and applications	BBT405D	Structural Biology and Biophysical Techniques

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**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 courses is mandatory for the award of degree.

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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	BBT501	Bioeconomy and Entrepreneurship	TD: BT PSB: BT	3	0	0		03	50	50	100	3
2	IPCC	BBT502	Enzyme Technology + Lab	TD: BT PSB: BT	3	0	2		03	50	50	100	4
3	PCC	BBT503	Genomics, Proteomics and Bioinformatics	TD: BT PSB: BT	4	0	0		04	50	50	100	4
4	PCCL	BBTL504	Bioinformatics Lab	TD: BT PSB: BT	0	0	2		03	50	50	100	1
5	PEC	BBT515x	Professional Elective Course	TD: BT PSB: BT	3	0	0		03	50	50	100	3
6	PROJ	BBT586	Mini Project	TD: BT PSB: BT	0	0	4		03	100		100	2
7	AEC	BRMK557	Research Methodology and IPR	TD: Any Dept PSB: As identified by University	2	2	0		02	50	50	100	3
8	MC	BESK508	Environmental Studies	TD: CV/ENV/CHE.E/BT PSB: CV	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>500</b>	<b>300</b>	<b>800</b>	<b>22</b>	
<b>Professional Elective Course</b>													
BBT515A	Food Processing and Nutraceuticals (include nutrigenomics)			BBT515C	Medicinal Chemistry and Chemoinformatics								
BBT515B	Forensic Biology			BBT515D	Bioprocess Equipment Design and CAED								

**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** : The letter in the course code indicates common to all the stream of engineering. **PROJ**: Project /Mini Project. **PEC**: Professional Elective Course

**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

**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.

**Mini-project work**: Mini Project is a laboratory-oriented/hands on course that will provide a platform to students to enhance their practical knowledge and skills by the development of small systems/applications etc. Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary Mini- project can be assigned to an individual student or to a group having not more than 4 students.

**CIE procedure for Mini-project:**

**(i) Single discipline**: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two faculty members of the Department, one of them being the Guide. The CIE marks awarded for the Mini-project work shall be based on the evaluation of the project report, project presentation skill, and question and answer session in the ratio of 50:25:25. The marks awarded for the project report shall be the same for all the batches mates.

**(ii) Interdisciplinary**: Continuous Internal Evaluation shall be group-wise at the college level with the participation of all the guides of the project.

The CIE marks awarded for the Mini-project, shall be based on the evaluation of the project report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

**No SEE component for Mini-Project.**

**Professional Elective Courses (PEC)**: A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering a professional elective is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.

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**B.E. in Biotechnology****Scheme of Teaching and Examinations 2022**

Outcome Based Education (OB

E) 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	BBT601	Bioprocess Control & Automation + Lab	TD: BT PSB: BT	3	0	2		03	50	50	100	4
2	PCC	BBT602	Biokinetics	TD: BT PSB: BT	4	0	0		04	50	50	100	4
3	PEC	BBT613x	Professional Elective Course	TD: BT PSB: BT	3	0	0		03	50	50	100	3
4	OEC	BBT654x	Open Elective Course	TD: BT PSB: BT	3	0	0		03	50	50	100	3
5	PROJ	BBT685	Project Phase I	TD: BT PSB: BT	0	0	4		03	100	--	100	2
6	PCCL	BBTL606	Biokinetics Lab	TD: BT PSB: BT	0	0	2		03	50	50	100	1
7	AEC/SDC	BBT657x	Ability Enhancement Course/Skill Development Course V	TD: BT PSB: BT	If the course is offered as a Theory				01	50	50	100	1
					1	0	0						
					If course is offered as a practical				02				
					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									
<b>Total</b>									<b>500</b>	<b>300</b>	<b>800</b>	<b>18</b>	
<b>Professional Elective Course (MVIT)</b>													
BBT613A		Biopharmaceuticals			BBT613C		Synthetic Biology and Tissue Engineering						
BBT613B		Biomedical Imaging and Health Informatics			BBT613D		Systems Biology and Rational Drug design						

Open Elective Course			
BBT654A	Robotics in Healthcare and Agri-Tech	BBT654C	Nanobiotechnology
BBT654B	Food, Nutrition and Health	BBT654D	Ecology and Ecosystem
Ability Enhancement Course / Skill Enhancement Course-V			
BBT657A	Bio-Innovation and Start-ups	BBTL657C	Modelling and Simulations in Biology Lab
BBTL657B	Bioinstrumentation and Servicing Lab	BBT657D	Good Manufacturing and Laboratory Practices
<p><b>PCC:</b> Professional Core Course, <b>PCCL:</b> Professional Core Course laboratory, <b>UHV:</b> Universal Human Value Course, <b>MC:</b> Mandatory Course (Non-credit), <b>AEC:</b> Ability Enhancement Course, <b>SEC:</b> Skill Enhancement Course, <b>L:</b> Lecture, <b>T:</b> Tutorial, <b>P:</b> Practical <b>S= SDA:</b> Skill Development Activity, <b>CIE:</b> Continuous Internal Evaluation, <b>SEE:</b> Semester End Evaluation. <b>K :</b> The letter in the course code indicates common to all the stream of engineering. <b>PROJ:</b> Project /Mini Project. <b>PEC:</b> Professional Elective Course. <b>PROJ:</b> Project Phase -I, <b>OEC:</b> Open Elective Course</p>			
<p><b>Professional Core Course (IPCC):</b> 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</p> <p><b>National Service Scheme /Physical Education/Yoga:</b> 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>			
<p><b>Professional Elective Courses (PEC):</b> A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students’ strengths for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.</p>			
<p><b>Open Elective Courses:</b> Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum numbers of students’ strength for offering Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.</p>			
<p><b>Project Phase-I:</b> Students have to discuss with the mentor /guide and with their help he/she has to complete the literature survey and prepare the report and finally define the problem statement for the project work.</p>			



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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 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	BBT701	Upstream Process Technology + Lab	TD: BT PSB: BT	3	0	2		03	50	50	100	4
2	IPCC	BBT702	Downstream Process Technology + Lab	TD: BT PSB: BT	3	0	2		03	50	50	100	4
3	PCC	BBT703	Bioethics, Biosafety and Regulatory affairs	TD: BT PSB: BT	4	0	0		04	50	50	100	4
4	PEC	BBT714x	<b>Professional Elective Course</b>	TD: BT PSB: BT	3	0	0		03	50	50	100	3
5	OEC	BBT755x	<b>Open Elective Course</b>	TD: BT PSB: BT	3	0	0		01	50	50	100	3
6	PROJ	BBT786	<b>Major Project Phase-II</b>	TD: BT PSB: BT	0	0	12		03	100	100	200	6
										<b>400</b>	<b>300</b>	<b>700</b>	<b>24</b>

**Professional Elective Course**

BBT714A	Clinical Research	BBT714C	Biological Data Management
BBT714B	Environmental Biotechnology	BBT714D	Agricultural Biotechnology

**Open Elective Course**

BBT755A	Biomaterials and Medical Implants	BBT755C	Traditional Medicine And Health Management
BBT755B	Public Health and Community Medicine	BBT755D	Bioremediation Techniques

**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.

**Professional Elective Courses (PEC):** A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.

**Open Elective Courses:**

Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum numbers of students' strength for offering Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.

**PROJECT WORK (21BTP75):** The objective of the Project work is

- (i) To encourage independent learning and the innovative attitude of the students.
- (ii) To develop interactive attitude, communication skills, organization, time management, and presentation skills.
- (iii) To impart flexibility and adaptability.
- (iv) To inspire team working.
- (v) To expand intellectual capacity, credibility, judgment and intuition.
- (vi) To adhere to punctuality, setting and meeting deadlines.
- (vii) To install responsibilities to oneself and others.
- (viii) To train students to present the topic of project work in a seminar without any fear, face the audience confidently, enhance communication skills, involve in group discussion to present and exchange ideas.

**CIE procedure for Project Work:**

**(1) Single discipline:** The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide.

The CIE marks awarded for the project work shall be based on the evaluation of the project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

**(2) Interdisciplinary:** Continuous Internal Evaluation shall be group-wise at the college level with the participation of all guides of the college. Participation of external guide/s, if any, is desirable. The CIE marks awarded for the project work, shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

**SEE procedure for Project Work:** SEE for project work will be conducted by the two examiners appointed by the University. The SEE marks awarded for the project work shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25.

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**VIII SEMESTER (Swappable VII and VIII SEMESTER)**

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question 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	BBT801x	<b>Professional Elective (Online Courses)</b>	TD: BTPSB: BT	3	0	0		03	50	50	100	3
2	OEC	BBT802x	<b>Open Elective (Online Courses)</b>	TD: BTPSB: BT	0	2	0		01	50	50	100	3
3	INT	BBT803	<b>Internship (Industry/Research) (14 - 20 weeks)</b>	TD: BTPSB: BT	0	0	12		03	100	100	200	10
										<b>200</b>	<b>200</b>	<b>400</b>	<b>16</b>
<b>Professional Elective Course (BOS recommended Online courses)</b>													
BBT801A				BBT801C									
BBT801B				BBT801D									
<b>Open Elective Courses (BOS recommended Online Courses)</b>													
BBT802A				BBT802C									
BBT802B				BBT802D									

**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 center, Start-up, center of Excellence (CoE), Study Centre established in the parent institute and /or at reputed research organizations/institutes.

The mandatory Research internship /Industry internship / Rural Internship is 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.

Please note: If any clarifications / suggestions please email to [sbhvtuso@yahoo.com](mailto:sbhvtuso@yahoo.com)