

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI													
B.E. in Computer Science and Engineering(IoT)													
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/BS C	BCS301	Mathematics for Computer Science	TD- MATHS PSB:MATHS	3	2	0		03	50	50	100	4
2	IPCC	BCS302	Digital Design & Computer Organization	TD:CO PSB:CS	3	0	2		03	50	50	100	4
3	IPCC	BCS303	Operating Systems	TD:CO PSB:CS	3	0	2		03	50	50	100	4
4	PCC	BCS304	Data Structures and Applications	TD:CO PSB:CS	3	0	0		03	50	50	100	3
5	PCCL	BCSL305	Data Structures Lab	TD:CO PSB:CS	0	0	2		03	50	50	100	1
6	ESC	BCS306x	ESC/ETC/PLC	TD:CO PSB:CS	2	0	2		03	50	50	100	3
7	UHV	BSCK307	<b>Social Connect and Responsibility</b>	Any Department	0	0	2		01	100	---	100	1
8	AEC/ SEC	BXX358x	Ability Enhancement Course/Skill Enhancement Course - III	TD: CO PSB: CS	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 coordinator	0	0	2			100	---	100	0
		BPEK359	Physical Education	Physical Education Director									
		BYOK359	Yoga	Yoga Teacher									
									<b>Total</b>	<b>550</b>	<b>350</b>	<b>900</b>	<b>21</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. **ESC:** Engineering Science Course, **ETC:** Emerging Technology Course, **PLC:** Programming Language Course

**Engineering Science Course (ESC/ETC/PLC) (Note- Student should opt for the course which should not be similar to the course opted in 1<sup>st</sup> Year)**

BCS306A	Object Oriented Programming with Java		
BCS306B	Object Oriented Programming with C++		

**Ability Enhancement Course – III**

BCO358A	Embedded C	BCS358C	Project Management with Git
BCS358B	R Programming	BCS358D	Data Visualization with Python

**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	Tutorials	Practical / Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	PCC/BS C	BCO401	Elements of Internet of Things	TD:CO PSB:CS	3	0	0		03	50	50	100	3
2	IPCC	BCO402	Analysis & Design of Algorithms	TD:CO PSB:CS	3	0	2		03	50	50	100	4
3	IPCC	BCS403	Database Management Systems	TD:CO PSB:CS	3	0	2		03	50	50	100	4
4	PCCL	BCOL404	IoT Lab	TD:CO PSB:CS	0	0	2		03	50	50	100	1
5	ESC	BCS405x	ESC/ETC/PLC	TD:CO PSB:CS	2	2	0		03	50	50	100	3
6	AEC/ SEC	BXX456x	Ability Enhancement Course/Skill Enhancement Course- IV	TD:CO PSB: CS	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	TD / PSB: BT, CHE,	2	0	0		03	50	50	100	2
7	UHV	BUHK408	Universal human values course	Any Department	1	0	0		01	50	50	100	1
9	MC	BNSK459	National Service Scheme	NSS coordinator	0	0	2		100	---	100	0	
		BPEK459	Physical Education	Physical Education Director									
		BYOK459	Yoga	Yoga Teacher									
<b>Total</b>									<b>500</b>	<b>400</b>	<b>900</b>	<b>19</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

BCO456A	Data Analytics for IOT	BCO456C	Architecting Smart IOT Devices
BCS456B	Capacity Planning for IT	BCO456D	Firmware Security

#### Engineering Science Course (ESC/ETC/PLC)

BCS405A	Discrete Mathematical Structures	BCS405C	Optimization Techniques
BCS405B	Graph Theory	BCS405D	Linear Algebra

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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	Tutorials	Practical / Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	HSMS	BCO501	Software Engineering & Project Management	TD:CO PSB:CO	3	0	0		03	50	50	100	3
2	IPCC	BCO502	Computer Networks	TD:CO PSB:CO	3	0	2		03	50	50	100	4
3	PCC	BCO503	Theory of Computation	TD:CO PSB:CO	3	2	0		03	50	50	100	4
4	PCCL	BCOL504	Sensors and Devices Lab	TD:CO PSB:CO	0	0	2		03	50	50	100	1
5	PEC	BCO515x	Professional Elective Course	TD:CO PSB:CO	3	0	0		03	50	50	100	3
6	PROJ	BCO586	Mini Project	TD:CO PSB:CO	0	0	4		03	100		100	2
7	AEC	BRMK557	Research Methodology and IPR	TD: HSM PSB : HSM	2	2	0		02	50	50	100	3
8	MC	BESK508	Environmental Studies	TD: HSM PSB : HSM	2	0	0		02	50	50	100	2
9	MC	BNSK559	National Service Scheme	NSS coordinator	0	0	2			100		100	0
		BPEK559	Physical Education	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>													
BCO515A		Artificial Intelligence for IOT				BCO515C		Distributed Systems					

BCO515B	Cloud Computing	BCO515D	Advanced Computer Architecture
<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>SXX:</b> Semester End Evaluation. <b>K :</b> The letter in the course code indicates common to al the stream of engineering. <b>PROJ:</b> Project /Mini Project. <b>PEC:</b> Professional 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>Mini-project work:</b> 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.</p>			
<p><b>CIE procedure for Mini-project:</b></p>			
<p><b>(i) Single discipline:</b> 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.</p>			
<p><b>(ii) Interdisciplinary:</b> 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.</p>			
<p><b>No SEE component for Mini-Project.</b></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 a professional elective is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.</p>			



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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	T u o r i a l	Prac t i c a l / Dra w i n g	SDA	Dur at i o n i n h o u r s	CIE Mar ks	SEE Mar ks	Total Mar ks	
1	IPCC	BCO601	Microcontrollers & Embedded Systems	TD:CO PSB:CO	3	0	2		03	50	50	100	4
2	PCC	BCO602	IOT system architecture	TD:CO PSB:CO	4	0	0		03	50	50	100	4
3	PEC	BCO613x	Professional Elective Course	TD:CO PSB:CO	3	0	0		03	50	50	100	3
4	OEC	BCO654x	Open Elective Course	TD:CO PSB:CO	3	0	0		03	50	50	100	3
5	PROJ	BCO685	Project Phase I	TD:CO PSB:CO	0	0	4		03	100	--	100	2
6	PCCL	BCOL606	Bigdata Lab	TD:CO PSB:CO	0	0	2		03	50	50	100	1
7	AEC/SD C	BCO657x	Ability Enhancement Course/Skill Development Course V	TD and PSB: Concerned department	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 coordinator	0	0	2		100	---	100	0	
		BPEK658	Physical Education	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</b>													
BCO613A		Industrial IOT			BCO613C		Blockchain Technology						
BCO613B		Computer Vision			BCO613D		Fog & Edge Computing						
<b>Open Elective Course</b>													



BCO654A	Introduction to Data Structures	BCO654C	Mobile Application Development
BCO654B	Fundamentals of Operating Systems	BCO654D	
<b>Ability Enhancement Course / Skill Enhancement Course-V</b>			
BCO657A	Progressive App Development	BCO657C	IoT Security
BCO657B	Tosca – Automated Software Testing	BCO657D	Devops
<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 helpe/she has to complete the literature survey and prepare the report and finally</p>			

define the problem statement for the project work.

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**VIISEMESTER (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	T u t o r i a l	Prac t i c a l / Dra w i n g	SDA	Dur atio n in hou rs	CIE Mar ks	SEE Mark s	Total Mark s	
1	IPCC	BCO701	IOT communication Protocols	TD:CO PSB:CO	3	0	2		03	50	50	100	4
2	IPCC	BCO702	Machine Learning	TD:CO PSB:CO	3	0	2		03	50	50	100	4
3	PCC	BCO703	Information & Network Security	TD:CO PSB:CO	4	0	0		03	50	50	100	4
4	PEC	BCO714x	<b>Professional Elective Course</b>	TD:CO PSB:CO	3	0	0		03	50	50	100	3
5	OEC	BCO755x	<b>Open Elective Course</b>	TD:CO PSB:CO	3	0	0		01	50	50	100	3
6	PROJ	BCO786	<b>Major Project Phase-II</b>	TD:CO PSB:CO	0	0	12		03	100	100	200	6
									<b>400</b>	<b>300</b>	<b>700</b>	<b>24</b>	

**Professional Elective Course**

BCO714A	Smart sensor technologies	BCO714C	IOT Automation
BCO714B	IOT platforms and System Design	BCO714D	Deep Learning

**Open Elective Course**

BCO755A	Introduction to DBMS	BCO755C	Software Engineering
BCO755B	Introduction to Algorithms	BCO755D	Introduction to Embedded Systems

**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 (21XXP75):** 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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(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	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	PEC	BCO801x	Professional Elective (Online Courses) Only through NPTEL	PSB : CO	3	0	0		03	50	50	100	3
2	OEC	BCO802x	Open Elective (Online Courses) Only through NPTEL	PSB : CO	3	0	0		01	50	50	100	3
3	INT	BCO803	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)**

BCO801A	BOS will publish courses based on the availability	BCO801C	
BCO801B		BCO801D	

**Open Elective Courses (Online Courses)**

BCO802A	BOS will publish courses based on the availability	BCO802C	
BCO802B		BCO802D	

**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.
- **Note: For BCO801x and BCO802x courses BOS will announce list of courses in 6<sup>th</sup> , 7<sup>th</sup> & 8<sup>th</sup> Sem . Students can register in any of the semester to earn the credits in 8<sup>th</sup> Sem.**
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**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)