

<p style="text-align: center;">VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI B.E. in Information Science and Engineering Scheme of Teaching and Examinations 2022 Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2023-24)</p>													
III SEMESTER													
Sl. No	Course	Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			C r e d i t s	
					Theory Lecture	Tut orial	Prac tical / Dra win g	SDA	Dur atio n in hou rs	CIE Mar ks	SEE Mar ks	Total Marks	
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: IS PSB: CS	3	0	2		03	50	50	100	4
3	IPCC	BCS303	Operating Systems	TD: IS PSB: CS	3	0	2		03	50	50	100	4
4	PCC	BCS304	Data Structures and Applications	TD: IS PSB: CS	3	0	0		03	50	50	100	3
5	PCCL	BCSL305	Data Structures Lab	TD: IS PSB: CS	0	0	2		03	50	50	100	1
6	ESC	BCS306X	ESC/ETC/PLC	TD: IS PSB: CS	2	0	2		03	50	50	100	3
7	UHV	BSCK307	Social Connect and Responsibility	Any Department	0	0	2		01	100	---	100	1
8	AEC/ SEC	BCS358X	Ability Enhancement Course/Skill Enhancement Course – III	TD : Concerned department 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)	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	2 1
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 1st Year)				
BCS306A	Object Oriented Programming with Java	BCS306C		
BCS306B	Object Oriented Programming with C++	BCS306D		
Ability Enhancement Course – III				
BCSL358A	Data analytics with Excel	BCSL358C	Project Management with Git	
BCSL358B	R programming	BCSL358D	Data Visualization with Phyton	
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 refered.				
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 style="text-align: center;">VARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI B.E. in Information Science and Engineering Scheme of Teaching and Examinations 2022 Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2023-24)</p>													
IV SEMESTER													
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				C r e d i t s
					The ory Lect ure	T u t o ri a l	Prac tical / Dra win g	Self - Study	Dur atio n in hou rs	CIE Mar ks	SEE Mar ks	Total Mar ks	
1	PCC/BS C	BCS401	Analysis & Design of Algorithms	TD: IS PSB: CS	3	0	0		03	50	50	100	3
2	IPCC	BIS402	Advanced Java	TD: IS PSB: CS	3	0	2		03	50	50	100	4
3	IPCC	BCS403	Database Management Systems	TD: IS PSB: CS	3	0	2		03	50	50	100	4
4	PCCL	BCSL404	Analysis & Design of Algorithms Lab	TD: IS PSB: CS	0	0	2		03	50	50	100	1
5	ESC	BCS405x	ESC/ETC/PLC	TD: IS/Maths PSB : IS/Maths	2	2	0		03	50	50	100	3
6	AEC/ SEC	BCS456x	Ability Enhancement Course/Skill Enhancement Course- IV	TD: Concerned department PSB: CS	If the course is Theory				01	50	50	100	1
					1	0	0						
					If the course is a lab				02				
4	BSC	BBOC407	Biology for Computer 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)	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	19

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

BCS456A	Green IT and Sustainability	BCS456C	UI/UX
BCS456B	Capacity Planning for IT	BCSL456D	Technical writing using LATEX

Engineering Science Course (ESC/ETC/PLC)

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

Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practical 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 courses is mandatory for the award of degree.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI B.E. in Information Science and 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				C r e d i t s								
				Theory Lect ure	T u t o ri a l	Prac tical / Dra win g	SDA	Dur atio n in hou rs	CIE Mar ks	SEE Mar ks	Total Mar ks									
				L	T	P	S													
1	PCC	BCS501	Software Engineering & Project Management	TD: IS PSB : IS	3	0	0		03	50	50	100	3							
2	IPCC	BCS502	Computer Networks	TD: IS PSB: IS	3	0	2		03	50	50	100	4							
3	PCC	BCS503	Theory of Computation	TD: IS PSB: IS	3	2	0		03	50	50	100	4							
4	PCCL	BAIL504	Data Visualization Lab	TD: IS PSB: IS	0	0	2		03	50	50	100	1							
5	PEC	BXX515x	Professional Elective Course	TD: IS PSB: IS	3	0	0		03	50	50	100	3							
6	PROJ	BIS586	Mini Project	TD: IS PSB: IS	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	HSMS	BCS508	Environmental Studies and E-waste Management	TD: HSM PSB : HSM	2	0	0		01	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																				
BAI515A	Computer Vision			BCS515C	Unix System Programming															
BCS515B	Artificial Intelligence			BCS515D	Distributed Systems															

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, **SIS:** 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.

<p style="text-align: center;">VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI B.E. in Information Science and Engineering Scheme of Teaching and Examinations2022 Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2023-24)</p>																	
VI SEMESTER																	
Sl. No	Course and Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				C r e d i t s					
				The ory Lect ure	T u t o ri al	Prac tical / Dra win g	SDA	Dur atio n in hou rs	CIE Mar ks	SEE Mar ks	Total Mar ks						
L	T	P	S														
1	IPCC	BIS601	Full Stack Development	TD: IS PSB: IS	3	0	2	03	50	50	100	4					
2	PCC	BCS602	Machine Learning	TD: IS PSB: IS	4	0	0										
3	PEC	BXX613x	Professional Elective Course	TD: IS PSB: IS	3	0	0	03	50	50	100	3					
4	OEC	BXX654x	Open Elective Course	TD: IS PSB: IS	3	0	0										
5	PROJ	BIS685	Project Phase I	TD: IS PSB: IS	0	0	4	03	100	--	100	2					
6	PCCL	BCSL606	Machine Learning lab	TD: IS PSB: IS	0	0	2										
7	AEC/SD C	BXX657x	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)	NSS coordinator	0	0	2		100	---	100	0					
		BPEK658	Physical Education (PE) (Sports and Athletics)	Physical Education Director													
		BYOK658	Yoga	Yoga Teacher													
9	MC	BIKS609	Indian Knowledge System		1	0	0	01	100	---	100	0					
								Total	500	300	800	18					
Professional Elective Course																	
BCS613A		Blockchain Technology			BCS613C	Compiler Design											
BIS613B		Internet of Things			BIS613D	Cloud Computing and Security											

Open Elective Course			
BCS654A	Introduction to Data Structures	BIS654C	Mobile Application Development
BCS654B	Fundamentals of Operating Systems	BAI654D	Introduction to Artificial Intelligence
Ability Enhancement Course / Skill Enhancement Course-V			
BISL657A	Tosca – Automated Software testing	BAIL657C	Generative AI
BCSL657B	React	BCSL657D	Devops
<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 : The letter in the course code indicates common to all the stream of engineering. PROJ: Project /Mini Project. PEC: Professional Elective Course. PROJ: Project Phase -I, OEC: Open Elective Course</p>			
<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</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>			
<p>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.</p>			
<p>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.</p>			
<p>Project Phase-I : Students have to discuss with the mentor /guide and with their helper/she has to complete the literature survey and prepare the report and finally define the problem statement for the project work.</p>			

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI B.E. in Information Science and Engineering Scheme of Teaching and Examinations2022 Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2023-24)																										
VI 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				C r e d i t s														
				The ory Lect ure	T u t o ri al	Prac tical / Dra win g	SDA	Dur atio n in hou rs	CIE Mar ks	SEE Mar ks	Total Mar ks															
1	IPCC	BIS701	Big Data Analytics	TD: IS PSB: IS	3	0	2		03	50	50	100	4													
2	IPCC	BCS702	Parallel Computing	TD: IS PSB: IS	3	0	2		03	50	50	100	4													
3	PCC	BIS703	Information & Network Security	TD: IS PSB: IS	4	0	0		03	50	50	100	4													
4	PEC	BIS714x	Professional Elective Course	TD: IS PSB: IS	3	0	0		03	50	50	100	3													
5	OEC	BIS755x	Open Elective Course	TD: IS PSB: IS	3	0	0		01	50	50	100	3													
6	PROJ	BIS786	Major Project Phase-II	TD: IS PSB: IS	0	0	12		03	100	100	200	6													
												400	300	700	24											
Professional Elective Course																										
BCS714A	Deep Learning			BIS714C		Embedded Systems																				
BIS714B	Software Quality Assurance			BAD714D		Social Network Analysis																				
Open Elective Course																										
BCS755A	Introduction to DBMS			BCS755C		Software Engineering																				
BCS755B	Introduction to Algorithms																									
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 condition 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 (21ISP75): 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.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

B.E. in Information Science and Engineering

Scheme of Teaching and Examinations2022

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				C r e d i t s	
				The ory Lect ure	T u t o ri al	Prac tical / Dra win g	SDA	Dur atio n in hou rs	CIE Mar ks	SEE Mark s	Total Mark s		
L	T	P	S										
1	PEC	BIS801x	Professional Elective (Online Courses) Only through NPTEL	PSB: IS	3	0	0		03	50	50	100	3
2	OEC	BIS802x	Open Elective (Online Courses) Only through NPTEL	PSB: IS	3	0	0		01	50	50	100	3
3	INT	BIS803	Internship (Industry/Research) (14 - 20 weeks)		0	0	12		03	100	100	200	10
										200	200	400	16

Professional Elective Course (Online courses)

BIS801A	BOS will publish courses based on the availability	BIS801C	
BIS801B		BIS801D	

Open Elective Courses (Online Courses)

BIS802A	BOS will publish courses based on the availability	BIS802C	
BIS802B		BIS802D	

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 BCE801x and BCE802x courses BOS will announce list of courses in 6th, 7th & 8th Sem . Students can register in any of the semester to earn the credits in 8th Sem.
-

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