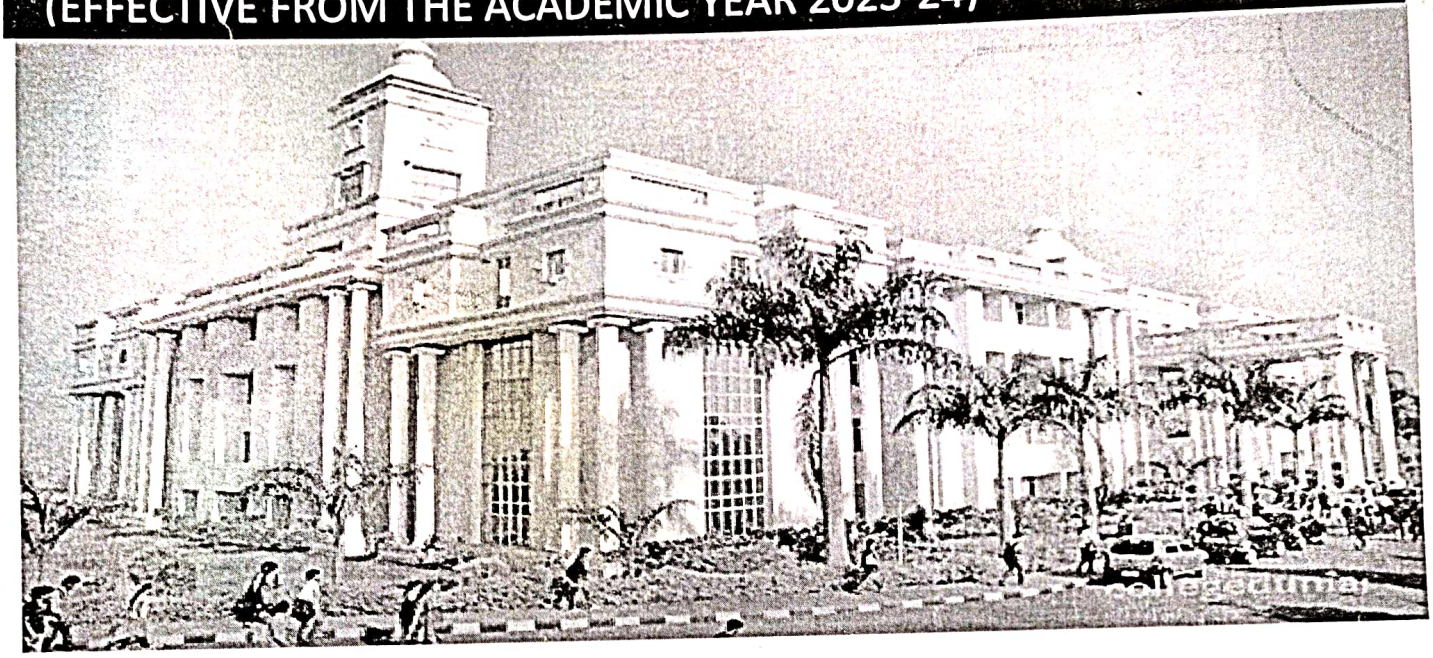
ECE -2023 SCHEME (III –VIII SEMESTER)

(EFFECTIVE FROM THE ACADEMIC YEAR 2023-24)



GLOBAL ACADEMY OF TECHNOLOGY

(Autonomous institution affiliated to VTU, Belagavi.
Accredited by NAAC with 'A' grade,
NBA Accredited CS, E&C, E&E, MECH, CV and IS branches)
Ideal Homes Township,
Raja Rajeshwari Nagar, Bengaluru-560098

HEAD OF THE DEPARTMENT
Dept. of Electronics & Communication Engg
Global Academy of Technology
Rajarajeshwarinagar, Bangalore-98

H.N. Rajashekar Shear
Dean Academic
Global Academy of Technology,
Rajarajeshwarinagar, Bengaluru-98

24 scheme attached

Global Academy of Technology, Bengaluru

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B.E. in Electronics and Communication Engineering Scheme of Teaching and Examinations 2023

Outcome Based Education (OBE) and Choice Based Credit System CBCS)

(Effective from the academic year 2023-24)

III SEMESTER:

Sl. No.	Course Code	Course Title	Course Type	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours/Week			Examination			Credits
					L	T	P	CIE	SEE	Total	
1	MAT23301D	Transforms and Complex Variables	BS	MAT	2	2	0	50	50	100	3
2	ECE23302	**Analog Electronic Circuits (Integrated)**	IPCC	ECE	3	0	2	50	50	100	4
3	ECE23303	Design and Analysis of Digital Circuits	PC	ECE	3	0	0	50	50	100	3
4	ECE23304	Network Analysis	PC	ECE	2	2	0	50	50	100	3
5	ECE23305X	ESC/ETC/PLC	ESC/ETC/PLC	ECE	3	0	0	50	50	100	3
6	SCK23306	Social Connect and Responsibility	Any Department	ECE	0	0	2	100		100	1
7	ECE23307X	Ability Enhancement Course – I (Theory)	AEC	ECE	2	0	0	50	50	100	2
		OR		ECE	OR						
		Ability Enhancement Course – I (Integrated)		ECE	1	0	2	50	50	100	
8	NSK23308	National Service Scheme (NSS)	MC	NSS coordinator	0	0	2	100		100	0
	PEK23308	Physical Education (PE) (Sports and Athletics)		Physical Education Director							
	YOK23308	Yoga		Yoga Teacher							
9	ECEL23309	Digital System Design Laboratory	PCL	ECE	0	0	2	50	50	100	1
							Total	550	350	900	20

Engineering Science Course (ESC/ETC/PLC)			
ECE23305A	Object Oriented Programming using C++	ECE23305C	Computer Organization and Architecture
ECE23305B	Electronic Devices	ECE23305D	Engineering Electromagnetics
Ability Enhancement Course – I			
ECE23307A	Sensors and Instrumentation	ECE23307C	IOT for Smart Infrastructure
ECE23307B	MATLAB Programming		

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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).

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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B.E. in Electronics and Communication Engineering Scheme of Teaching and Examinations 2023

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(Effective from the academic year 2023-24)

IV SEMESTER:

Sl. No.	Course Code	Course Title	Course Type	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours/Week			Examination			Credits
					L	T	P	CIE	SEE	Total	
1	MAT23401D	Probability, Special Functions and Advanced Linear Algebra	BS	MAT	2	2	0	50	50	100	3
2	ECE23402	**Principles of Communication Systems (Integrated)**	IPCC	ECE	3	0	2	50	50	100	4
3	ECE23403	Verilog HDL	PC	ECE	3	0	0	50	50	100	3
4	ECE23404	**Signals and Systems**	PC	ECE	2	2	0	50	50	100	3
5	ECE23405X	ESC/ETC/PLC-2	ESC/ETC/PLC	ECE	3	0	0	50	50	100	3
6	UHVK23406	Universal Human Values	UHV	Any Department	1	0	0	50	50	100	1
7	ECE23407X	Ability Enhancement Course – 2 (Theory)	AEC	ECE	3	0	0	50	50	100	2
		OR		ECE	OR						
		Ability Enhancement Course – 2 (Lab)		ECE	2	0	2	50	50	100	2
8	NSK23408	National Service Scheme (NSS)	MC	NSS coordinator	0	0	2	100	---	100	
	PEK23408	Physical Education (PE) (Sports and Athletics)		Physical Education Director							
	YOK23408	Yoga		Yoga Teacher							
9	ECEL23409	Verilog HDL Laboratory	PCL	ECE	0	0	2	50	50	100	1
							Total	500	400	900	20

Engineering Science Course (ESC/ETC/PLC)			
ECE23405A	Control Systems	ECE23405C	Operating Systems
ECE23405B	Industrial Electronics		
Ability Enhancement Course / Skill Enhancement Course - IV			
ECE23407A	Data Structures	ECE23407C	Microcontroller Laboratory
ECE23407B	Programmable Logic Controllers	ECE23407D	Digital Switching Systems

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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).

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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B.E. in Electronics and Communication Engineering Scheme of Teaching and Examinations 2023

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				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	HSMS	ECE23501	Engineering Economics and Management	ECE	3	0	0		03	50	50	100	3
2	IPCC	ECE23502	Digital Communication Systems (Integrated)	ECE	2	2	2		03	50	50	100	4
3	PCC	ECE23503	Digital Signal Processing	ECE	3	2	0		03	50	50	100	4
4	PCCL	ECEL23504	Digital Signal Processing Laboratory	ECE	0	0	2		03	50	50	100	1
5	PEC	ECE23505X	Professional Elective - I	ECE	3	0	0		03	50	50	100	3
6	PROJ	ECEP23506	Mini Project	ECE	0	0	4		03	100		100	2
7	AEC	RMIK23507	Research Methodology and IPR	Any Department	2	2	0		03	50	50	100	3
8	MC	CIVK23508	Environmental Studies	TD: CV/Env/Chem PSB:CV	2	0	0		02	50	50	100	2
9	MC	NSK23509	National Service Scheme (NSS)	NSS coordinator	0	0	2			100		100	0
		PEK23509	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		YOK23509	Yoga	Yoga Teacher									
									Total	**550**	**350**	**900**	**22**

Professional Elective Course - I

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ECE23505A	Programming in Java	ECE23505C	Speech Signal Processing
ECE23505B	Nanoelectronics	ECE23505D	Satellite Communication

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 al the stream of engineering. **PROJ**: Project /Mini Project. **PEC**: Professional Elective Course.

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 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 Electronics and Communication Engineering Scheme of Teaching and Examinations 2023

Outcome Based Education (OBE) 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	ECE23601	Embedded Systems (Integrated)	ECE	2	0	2		03	50	50	100	4
2	PCC	ECE23602	CMOS VLSI Design	ECE	3	2	0		03	50	50	100	4
3	PEC	ECE23603X	Professional Elective - II	ECE	3	0	0		03	50	50	100	3
4	OEC	ECE23604X	Open Elective -I	ECE	3	0	0		03	50	50	100	3
5	PROJ	ECEP23605	Major Project Phase - I	ECE	0	0	4		03	100	--	100	2
6	PCCL	ECEL23606	CMOS VLSI Design Laboratory	ECE	0	0	2		03	50	50	100	1
7	AEC/ SDC	ECE23607X	Ability Enhancement Course/ SkillDevelopment Course - III	ECE	If the course is offered as a Theory: 1	0	0		01	50	50	100	1
					If course is offered as a practical: 0	0	2						
8	MC	NSK23608	National Service Scheme (NSS)	NSS coordinator	0	0	2			100	---	100	0
		PEK23608	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		YOK23608	Yoga	Yoga Teacher									
9	IKS	IKSK23609	Indian Knowledge System		1	0	0		01	100	0	100	0
									Total	**600**	**300**	**900**	**18**

Professional Elective Course-II

ECE23603A	Digital Image Processing	ECE23603C	Information Theory and Coding
ECE23603B	Machine Learning with Python	ECE23603D	Microwave and Radar

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Open Elective Course-I			
ECE23604A	Electronics Communication Systems	ECE23604C	Electronic Circuits with Verilog
ECE23604B	Micro Electro Mechanical Systems	ECE23604D	Introduction to Digital Image Processing
Ability Enhancement Course / Skill Enhancement Course - III			
ECE23607A	Communication Simulink Toolbox	ECE23607C	Multimedia Communication
ECE23607B	Digital Image Processing Laboratory	ECE23607D	Internet of Things and Cloud Computing

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 al the stream of engineering. **PROJ**: Project /Mini Project. **PEC**: Professional Elective Course. **PROJ**: Project Phase -I, **OEC**: Open Elective Course

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 course is mandatory for the award of degree.

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 Phase-I : 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.

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Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

(Effective from the academic year 2023-24)

Scheme A- 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	ECE23701	Computer Communication Networks (Integrated)	ECE	3	0	2		03	50	50	100	4
2	IPCC	ECE23702	Antenna and Wavepropagation (Integrated)	ECE	3	0	2		03	50	50	100	4
3	PCC	ECE23703	Cryptography	ECE	3	2	0		03	50	50	100	4
4	PEC	ECE23704x	**Professional Elective-III**	ECE	3	0	0		03	50	50	100	3
5	OEC	ECE23705x	**Open Elective- II**	ECE	3	0	0		01	50	50	100	3
6	PROJ	ECEP23706	**Major Project Phase-II**	ECE	0	0	12		03	100	100	200	6
									Total	**350**	**350**	**700**	**24**

Professional Elective Course-III

ECE23704A	Advanced VLSI	ECE23704C	Optical Fiber Communication
ECE23704B	High Performance Computer Networks	ECE23704D	Biomedical Signal Processing

Open Elective Course-II

ECE23705A	Wireless and Mobile Networks	ECE23705C	Smart Sensors & Instrumentation
ECE23705B	Automotive Electronics	ECE23705D	Multimedia Communication

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.

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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 (21MEP75): 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)

Scheme A- 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	Self-Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	PEC	ECE23801x	Professional Elective -IV (Online Courses)	ECE	3	0	0		03	50	50	100	3
2	OEC	ECE23802x	Open Elective - III (Online Courses)	ECE	3	0	0		03	50	50	100	3
3	INT	ECEI23803	Internship (Industry/Research) (14 - 20 weeks)	ECE	0	0	12		03	100	100	200	10
									Total	**200**	**200**	**400**	**16**

Professional Elective Course-IV (Online courses)

ECE23801A	BOS Recommended Course	ECE23801C	BOS Recommended Course
ECE23801B	BOS Recommended Course	ECE23801D	BOS Recommended Course

Open Elective Course-III (Online Courses)

ECE23802A	BOS Recommended Course	ECE23802C	BOS Recommended Course
ECE23802B	BOS Recommended Course	ECE23802D	BOS Recommended Course

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:

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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 centre, Incubation centre, Start-up, centre 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 flavour 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.

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B.E. in Electronics and Communication Engineering Scheme of Teaching and Examinations 2023

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

(Effective from the academic year 2023-24)

Scheme B: VII and VIII semesters for the candidates who seek an internship with project work

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 inhours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	IPCC	ECE23701	**Computer Communication Networks (Integrated)** To be completed in 5th/6th semester	TD: ME PSB:ME	3	0	2		03	50	50	100	4
2	IPCC	ECE23702	**Antenna and Wavepropagation (Integrated)** To be completed in 5th /6th semester	TD: ME PSB:ME	3	0	2		03	50	50	100	4
3	PCC	ECE23703	**Cryptography** To be completed in the 6th semester	TD: ME PSB: ME	4	0	0		03	50	50	100	3
4	PEC	ECE23714x	Professional Elective Course (MOOC Courses)	TD: ME PSB: ME	3	0	0		03	50	50	100	3
5	OEC	ECE23755x	Open Elective Courses (MOOC courses)	TD: ME PSB: ME	3	0	0		01	50	50	100	3
1	PEC	ECE23801x	Professional Elective -IV (Online Courses)	TD: ME PSB:ME	3	0	0		03	50	50	100	3
2	OEC	ECE23802x	Open Elective - III (Online Courses)	TD: ME PSB:ME	3	0	0		01	50	50	100	3
3	PROJ	ECE23883	Project – Outcome of Training	TD: ME PSB:ME	0	0	12		03	100	100	200	9
4	INT	ECE23804	Internship (Industry/Research) (02 semesters)	TD: ME	0	0	12		03	100	100	200	10
									Total	**550**	**550**	**1100**	**42**

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