NEW HORIZON
COLLEGE OF ENGINEERING

Department of Electrical and Electronics Engineering

Batch: 2025-2029



Scheme: 2025

Credits: 160

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NEW HORIZON COLLEGE OF ENGINEERING

VISION

To emerge as an institute of eminence in the fields of engineering, technology and Management in serving the industry and the nation by empowering students with a high degree of technical, managerial and practical competence.

MISSION

- To strengthen the theoretical, practical and ethical dimensions of the learning process by fostering a culture of research and innovation among faculty members and students.
- To encourage long-term interaction between the academia and industry through their involvement in the design of curriculum and its hands-on implementation.
- To strengthen and mould students in professional, ethical, social and environmental dimensions by encouraging participation in co-curricular and extracurricular activities**.**

QUALITY POLICY

To provide educational services of the highest quality both curricular and co-curricular to enable students integrate skills and serve the industry and society equally well at global level

VALUES

- Academic freedom
- Integrity
- Inclusiveness
- Innovation
- Professionalism
- Social Responsibility

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

VISION

To evolve into a centre of excellence in Electrical and Electronics Engineering for bringing out contemporary engineers, innovators, researchers and entrepreneurs for serving nation and society.

MISSION

- To provide suitable forums to enhance the teaching-learning, research and development activities.
- Framing and continuously updating the curriculum to bridge the gap between industry and academia in the contemporary world and serve society.
- To inculcate awareness and responsibility towards the environment and ethical values.

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PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1: To provide good learning environment to develop entrepreneurship capabilities in various areas of Electrical and Electronics Engineering with enhanced efficiency, productivity, cost effectiveness and technological empowerment of human resource.

PEO2: To inculcate research capabilities in the areas of Electrical and Electronics Engineering to identify, comprehend and solve problems and adopt themselves to rapidly evolving technology.

PEO 3: To create high standards of moral and ethical values among the graduates to transform them as responsible citizens of the nation.

PEO TO MISSION STATEMENT MAPPING

PEOs	MISSION OF THE DEPARTMENT		
	M1	M2	M3
PEO1	3	3	2
PEO2	3	3	2
PEO3	2	2	3

KNOWLEDGE AND ATTITUDE PROFILE (WK)

S. No	Knowledge and Attitude Profile (WK)
1	WK1: A systematic, theory-based understanding of the natural sciences applicable to the discipline and awareness of relevant social sciences.
2	WK2: Conceptually-based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling applicable to the discipline.
3	WK3: A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline
4	WK4: Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.
5	WK5: Knowledge, including efficient resource use, environmental impacts, whole-life cost, re use of resources, net zero carbon, and similar concepts, that supports engineering design and operations in a practice area.
6	WK6: Knowledge of engineering practice (technology) in the practice areas in the engineering discipline.
7	WK7: Knowledge of the role of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development.
8	WK8: Engagement with selected knowledge in the current research literature of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues.
9	WK9: Ethics, inclusive behaviour and conduct. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes.

PROGRAM OUTCOMES (POs)

S.No	Graduate Attributes	Program Outcomes (POs)
1	Engineering Knowledge	PO1: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.
2	Problem Analysis	PO2: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
3	Design/Development of Solutions	PO3: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
4	Conduct Investigations of Complex Problems	PO4: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).
5	Engineering Tool Usage	PO5: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)
6	The Engineer and The World	PO6: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).
7	Ethics	PO7: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)
8	Individual and Collaborative Team work	PO8: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
9	Communication	PO9: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

10	Project Management and Finance	PO10: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
11	Life-Long Learning	PO11: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

PEOs to POs mapping

	PO 1	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO1 0**	**PO1 1**	**PSO 1**	**PSO 2**
PEO 1	3	3	3	3	3	2	2	2	2	2	2	3	3
PEO 2	3	3	3	3	3	2	2	2	2	2	2	3	3
PEO 3	2	2	2	2	2	3	3	3	3	2	2	2	2

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Apply knowledge of electrical machines, circuit analysis, electronics, power systems, control, instrumentation, power electronics, signal processing, and embedded systems to analyse, design, and implement solutions for real-world applications using modern hardware and software tools.

PSO2: Design and develop innovative solutions in renewable energy, electric vehicles, smart grids, and automation with focus on environmental sustainability and societal needs.

NEW HORIZON COLLEGE OF ENGINEERING

First Semester BE-AY 2025-26
Scheme of Teaching and Examinations (2025 -2029 Batch)

EEE
Chemistry Cycle

S. No.	Course and Course Code		Course Title	BOS	Credit Distribution				Overall Credits	Contact Hours	Marks		
					L	T	P	S			CIE	SEE	Total
1	ASC	25MAT11	Applied Mathematics for Engineers – I	AS	3	1	0	0	4	5	50	50	**100**
2	ASC	25CHE12	Applied Chemistry for Engineers	AS	3	0	0	0	3	4	50	50	**100**
3	ASC	25CHL12	Applied Chemistry Lab for Engineers	AS	0	0	1	0	1	2	50	50	**100**
4	ESC -I	25ESC133	Introduction to Mechanical Engineering	ME	3	0	0	0	3	4	50	50	**100**
5	PSC	25EEE142	Elements of Electrical Engineering	EEE	3	0	0	0	3	4	50	50	**100**
6	PSC	25EEL142	Elements of Electrical Engineering lab	EEE	0	0	1	0	1	2	50	50	**100**
7	ESC	25CAD15	Computer Aided Engineering Drawing	ME	2	0	1	0	3	5	50	50	**100**
8	AEC	25ENG16	AI-Powered Communicative English	HSS	0	0	1	0	1	2	50	50	**100**
9	NCMC	25CIP17	Constitution of India and Professional Ethics	HSS	0	0	0	0	PP	1	100	-	**100**
10	AEC	25EDM18	Environment and Disaster Management	AS	1	0	0	0	1	1	50	50	**100**
Total									**20**	**30**	**550**	**450**	**1000**

NEW HORIZON COLLEGE OF ENGINEERING

Second Semester BE-AY 2025-26
Scheme of Teaching and Examinations (2025 -2029 Batch)

EEE												Physics Cycle		
S. No.	Course and Course Code		Course Title	BOS	Credit Distribution				Overall Credits	Contact Hours	Marks		
					L	T	P	S			CIE	SEE	Tot al
1	ASC	25MAT21	Applied Mathematics for Engineers – II	AS	3	1	0	0	4	5	50	50	**100**
2	ASC	25PHY22	Applied Physics for Engineers	AS	3	0	0	0	3	4	50	50	**100**
3	ASC	25PHL22	Applied Physics Lab for Engineers	AS	0	0	1	0	1	2	50	50	**100**
4	ESC-II	25ESC231	Introduction to Electronics and Communication Engineering	ECE	3	0	0	0	3	4	50	50	**100**
5	PLC	25PLC24	Programming in C	CS	3	0	0	0	3	4	50	50	**100**
6	PLC	25PCL24	Programming in C Lab	CS	0	0	1	0	1	2	50	50	**100**
7	ETC	25ETC25	Introduction to AI and Applications	ME	3	0	0	0	3	4	50	50	**100**
8	AEC	25UHV26	UHV and Indian Ethos	HSS	0	0	0	0	PP	2	100	-	**100**
9	HSS	25KSK27 / 25KBK27	Samskrithika Kannada/ Balake Kannada	HSS	1	0	0	0	1	2	50	50	**100**
10	AEC	25IPL28	Inter-Disciplinary Project Based Learning	AS	0	0	0	1	1	2	50	50	**100**
				Total					**20**	**31**	**550**	**450**	**1000**

COURSE CODE & COURSE NAME

(ESCI/II) Engineering Science Courses I &II		**(PSC) Program specific courses**		**(PSC)Program specific course Lab**	
25ESC131/231	Introduction to Electronics and Communication Engineering	25ECE141	Elements of Electronics and Communication Engineering	25ECL141/241	Elements of Electronics and Communication Engineering Lab
25ESC132/232	Introduction to Electrical Engineering	25EEE142	Elements of Electrical Engineering	25EEL142/242	Elements of Electrical Engineering Lab
25ESC133/233	Introduction to Mechanical Engineering	25MEE143	Elements of Mechanical Engineering	25MEL143/243	Elements of Mechanical Engineering Lab
		25CSE144	Problem Solving Using Python	25CSL144/244	Problem Solving Using Python Lab
(PLC) Programming Language Course		**(PLC) Programming Language Course Lab**		**(ASC) Applied Science Courses**	
25PLC24	Programming in C	25PCL24	Programming in C lab	25MAT11	Applied Mathematics for Engineers I (Stream Specific)
(ETC) Emerging Technology Courses I&II		**(ESC) Engineering Science Course**		25MAT21	Applied Mathematics for Engineers II (Stream Specific)
25ETC15/ 25	Introduction to AI and Applications	25CAD15/25	Computer Aided Engineering Drawing	25PHY12/22	Applied Physics for Engineers (Stream Specific)
(NCMC) Non-Credit Mandatory Courses		**(HSS/AEC) Humanities/ Ability Enhancement Courses**		25CHE12/22	Applied Chemistry for Engineers (Stream Specific)
25UHV16/26	UHV and Indian Ethos	25ENG16/26	AI Powered Communication Skills	**(ASC) Applied Science Course Lab**	
25CIP17/ 27	Constitution of India and Professional Ethics	25KBK17/27	Balake Kannada	25PHL12/22	Applied Physics Lab for Engineers
		25KSK17/27	Samskrutika Kannada/	25CHL12/22	Applied Chemistry Lab for Engineers
		25IPL18/28	Inter Departmental Project Based Learning		
		25EDM18/28	Environment and Disaster Management		

Guidelines for I year BE Scheme

Credit Definition: **1-hour Lecture (L) per week =1Credit** **2-hoursTutorial(T) per week=1Credit** **2-hours Practical / Drawing (P) per week=1Credit**	04-Credit courses are designed for 50 hours of Teaching-Learning Session. 04-Credit (IC) is designed for 40-45 hours' theory and 10-12 hours of practical sessions. 03-Credit courses are designed for 40 hours of Teaching-Learning Session. 02- Credit courses are designed for 25 hours of Teaching-Learning Session. 01-Credit courses are designed for 12-15 hours of Teaching-Learning sessions.
All students admitted to the engineering program have to complete Applied Mathematics-I and Applied Mathematics-II in I and II semesters by selecting the courses prescribed for their stream, viz. ME, EEE or CSE, under the heading Applied Mathematics for Engineers-I and Applied Mathematics for Enginners -II. Those who have completed the physics course under the heading Applied Physics for Engineers in I semester have to select the prescribed stream wise chemistry course under the heading Applied Chemistry for Engineers during II semester.	
Programme Specific Courses (PSC): Programme Specific Courses (PSC) are a set of core courses tailored to a specific branch of engineering in which a student is enrolled (e.g., Mechanical Engineering, Computer Science and Engineering, Electrical Engineering, etc.). These courses are intended to provide students with in-depth knowledge and specialized skills essential for professional competence in the chosen field. Students must select and complete the course from this group that corresponds to their admitted program stream.	
Engineering Sciences Courses-I/II(ESC-I/II): These courses are designed to broaden the technical knowledge of students beyond their core area of study. These courses enable students to gain a foundational understanding of engineering principles from other stream courses. Students are required to select and complete two courses that do not belong to their admitted program stream. For example, a student admitted to Mechanical Engineering should not select Introduction to Mechanical Engineering but any other two. One course shall be selected under ESC-I and another course under ESC-II. The two courses must be different from the other.	
AICTE Activity Points Requirement for BE/B.Tech. Programs - As per AICTE guidelines in addition to academic requirements, students must earn a specified number of Activity Points to be earned is to be eligible for the award of their degree. • Regular students admitted to a 4-year degree program must earn 100 Activity Points. • Lateral entry students (joining from the second year) must earn 75 Activity Points. • Students transferred from other universities	

directly into the fifth semester must earn 50 Activity Points from the date of entry into college. These Activity Points are non-credit and will not be considered for the SGPA/CGPA or be used for vertical progression. However, they are mandatory for the award of the degree, and the points earned will be reflected on the eighth semester Grade Card. The hours spent on earning the activity points shall not be counted for regular attendance requirements. Students can accumulate these points at any time during their program, including on weekends, holidays, and vacations starting from the year of admission, provided they meet the minimum hours of engagement prescribed for each activity. If a student fails to earn the required Activity Points, the eighth-semester Grade Card will be withheld until the requirement is fulfilled. Consequently, the degree will be awarded only after the Grade Card has been released.

OBE: Outcome Based Education (Outcome-Based Education is a student-centric teaching and learning methodology in which the course delivery, assessment are planned to achieve stated objectives and outcomes.

CO: Course outcome (Is a statement that clearly describes what and how much or how well the student will know and be able to do after successfully completing the specified course – the essential knowledge, abilities, and attitudes that constitute the basic learning needed by a graduate of the course.

PO: Programme Outcomes (POs are statements about the knowledge, skills and attitudes (attributes) the graduate of a formal engineering program should have. POs deal with the general aspect of graduation for a particular program, and the competencies and expertise a graduate will possess after completion of the program). (Refer POs defined by NBA)

SGPA -Semester Grade Point Average (The performance of a student in a semester is indicated by a number called SGPA)

$$SGPA = \frac{\sum [\text{Course Credits x Grade Points}] \text{ for all the Courses in that semester}}{\sum [\text{Course Credits}] \text{ for all the Courses in that Semester}}$$

CGPA: Cumulative Grade Point Average (which is the sum of the SGPA's of all semesters or that of an academic year)

$$CGPA = \frac{\sum [\text{Course Credits x Grade Points}] \text{ for all Courses excluding those with F grades until that semester.}}{\sum [\text{Course Credits}] \text{ for all Courses excluding those with F grades until that semester.}}$$

NEW HORIZON COLLEGE OF ENGINEERING

B. E. in Electrical and Electronics Engineering

Scheme of Teaching and Examinations for 2025- 2029 BATCH (2025 Scheme)

III Semester																	
S. No.	**Course and Course Code**		**Course Title**	**BoS**	**Credit Distribution**				**Overall Credits**	**TLP Contact Hours / Sem**	**TW & SL / Sem**	**Total Hours /Sem**	**Exam Hrs**	**Marks**		
					L	**T**	**P**	**S**						**CIE**	**SEE**	**Total**
1	BSC	25MAE31	Numerical Methods, Vector Spaces and Transforms	BS	3	0	0	0	3	45	45	90	3	50	50	**100**
2	PCC	25EEE32	DC Machines and Transformers	EE	3	0	0	0	3	45	45	90	3	50	50	**100**
3	PCCL	25EEL32	DC Machines and Transformers Laboratory	EE	0	0	1	0	1	30	-	30	3	50	50	**100**
4	PCC	25EEE33	Electric Circuit Theory	EE	3	0	0	0	3	45	45	90	3	50	50	**100**
5	PCCL	25EEL33	Electric Circuit Theory Laboratory	EE	0	0	1	0	1	30	-	30	3	50	50	**100**
6	PCC	25EEE34	Measurements and Instrumentation	EE	3	0	0	0	3	45	45	90	3	50	50	**100**
7	PCC	25EEE35	Digital Logic Design	EE	3	0	0	0	3	45	45	90	3	50	50	**100**
8	AEC	25EEE36X	Ability Enhancement Course – III	EE	If the course is a Theory							30	3	50	50	**100**
					1	0	0	0	1	15	15					
					If the course is a Laboratory											
					0	0	1	0	1	30	-					
9	PROJ	25CPD37	Community Project using Innovation and Design Thinking	Any Dept	0	0	1	0	1	-	30	30	3	50	50	**100**
10	NCMC	25NSS30	National Service Scheme	-	0	0	0	0	0	-	30	30	--	50	--	**50**
		25PED30	Physical Education and Sports	-												
		25YOG30	Yoga	-												
		25MUS30	Music	-												
Total									**19**	300/ **315**	300/ **285**	**600**	**27**	**500**	**450**	**950**

11	Skill Lab*	25SLC30	Skill Lab-I	-	0	0	1	0	1	-	30	30	--	100	-	**100**
12	NCMC**	25DMAT31	Basic Applied Mathematics -I	BS	0	0	0	0	0	15	15	30	--	50	--	**50**

BSC: Basic Science Course, **PCC**: Professional Core Course, **PCCL**: Professional Core Course laboratory, **UHV**: Universal Human Value Course, **NCMC:** Non-Credit Mandatory Course, **AEC**: Ability Enhancement Course, **PROJ**: Mini Project work, **L:** Lecture, **T**: Tutorial, **P**: Practical **S: SDA**: Skill Development Activity, **TW & SL-** Term Work & Self Learning, **K:** This letter in the course code indicates common to all the stream of engineering. **ESC:** Engineering Science Course, **CIE**: Continuous Internal Evaluation, **SEE**:Semester End Evaluation.

25DMAT31*: This non-credit mandatory course to be offered with only CIE and no SEE to Lateral entry students.

Skill Lab*: Students admitted to the 2025 Scheme of all Undergraduate Engineering programmes through regular admission shall successfully complete five (05) Skill Labs. Students admitted through lateral entry under the 2025 Scheme shall successfully complete four (04) Skill Labs. The prescribed skill labs shall be completed between the 3rd and 7th semesters. Completion of the prescribed number of Skill Labs is mandatory for the award of the degree. However, the additional Skill Lab credits shall not be considered for the award of rank, calculation of the Programme Cumulative Grade Point Average (CGPA), or vertical progression. The successful completion of the prescribed Skill Labs shall, however, be reflected in the Eighth Semester Grade Card.
Students shall attend to these skill Labs during Saturdays, Sundays, general holidays, vacations and Summer Semesters with an aim that students acquire skills of their choice to become industry ready graduates.

Ability Enhancement Course – III (1-0-0-0 or 0-0-1-0)			
25EEE361	Digital Logic Design Laboratory (0-0-1-0)	25EEE364	555 IC Laboratory (0-0-1-0)
25EEE362	MATLAB Programming for Problem Solving (0-0-1-0)	25EEE365	Bio Inspired Design and Innovation (1-0-0-0)
25EEE363	Virtual Instrumentation Using LabVIEW (0-0-1-0)		

Community Project using Innovation and Design Thinking: A community is a social unit or group of people sharing socially-significant characteristics, such as place, set of norms, culture, religion, values, customs, or identity. The Community Project using Innovation and Design Thinking course involves addressing complex issues within such a community through a human-centered lens. By integrating design thinking methodologies, these projects move beyond traditional service to focus on empathy, iterative problem-solving, and the creation of sustainable, innovative solutions. Whether establishing welfare initiatives like orphanages, implementing renewable energy systems, or developing environmental technologies, the process begins with deep community engagement to uncover latent needs before defining specific challenges.
This experiential learning activity encourages students to identify, analyze, and address real-life problems by synthesizing engineering knowledge with creative strategy. The design thinking framework guides students through stages of empathy, ideation, and rapid prototyping, ensuring that the final interventions are not only technically sound but also culturally appropriate and user-validated. This approach promotes social responsibility and civic engagement while fostering interdisciplinary collaboration and the practical application

of theoretical concepts. By navigating the ambiguity of real-world constraints through an innovative mindset, students contribute meaningfully to community welfare and sustainable development. Students may undertake these projects individually or in collaborative groups 2 to 4 members.

CIE:
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 rubrics.

National Service Scheme /Physical Education/Yoga/ Music: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PED) (Sports and Athletics), Yoga (YOG), and Music (MUS) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester and IV semester (for 2 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, Yoga and Music 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. Students may opt for different activities/options across semesters. For instance, a student participating in PE during 3rd semester may choose NSS in the 4th semester or Yoga or Music.

NEW HORIZON COLLEGE OF ENGINEERING

B. E. in Electrical and Electronics Engineering

Scheme of Teaching and Examinations for 2025- 2029 BATCH (2025 Scheme)

IV Semester																
S. No.	Course and Course Code		Course Title	BoS	Credit Distribution				Overall Credits	TLP Contact Hours / Sem	TW & SL / Sem	Total Hours /Sem	Exam Hrs	Marks		
					L	T	P	S						CIE	SEE	Total
1	BSC	25MAE41	Complex Analysis, Optimization and Probability Distributions	BS	3	0	0	0	3	45	45	90	3	50	50	**100**
2	PCC	25EEE42	Analog Electronics and Integrated Circuits	EE	3	0	0	0	3	45	45	90	3	50	50	**100**
3	PCCL	25EEL42	Analog Electronics and Integrated Circuits Laboratory	EE	0	0	1	0	1	30	-	30	3	50	50	**100**
4	PCC	25EEE43	Microcontroller and Embedded Systems	EE	3	0	0	0	3	45	45	90	3	50	50	**100**
5	PCCL	25EEL43	Microcontroller and Embedded Systems Laboratory	EE	0	0	1	0	1	30	-	30	3	50	50	**100**
6	PCC	25EEE44	Synchronous and Induction Machines	EE	3	0	0	0	3	45	45	90	3	50	50	**100**
7	PCCL	25EEL44	Synchronous and Induction Machines Laboratory	EE	0	0	1	0	1	30	-	30	3	50	50	**100**
8	PEC	25EEE45X	Professional Elective Course-I	EE	If the course is a Theory							90	3	50	50	**100**
					3	0	0	0	3	45	45					
					If the course is an Integrated											
					2	0	1	0	3	60	30					
9	AEC	25EEE46X	Ability Enhancement Course – IV	EE	If the course is a Laboratory							30	3	50	50	**100**
					0	0	1	0	1	30	-					
10	PROJ	25EPP47	Environmental Science Project	EE	0	0	2	0	2	-	60	60	3	50	50	**100**

11	NCMC	25NSS40	National Service Scheme	-	0	0	0	0	0	-	30	30	--	50	--	**50**
		25PED40	Physical Education and Sports	-												
		25YOG40	Yoga	-												
		25MUS40	Music	-												
Total									**21**	**345**	**315**	**660**	**30**	**550**	**500**	**1050**

12	NCMC	25DMAT41*	Basic Applied Mathematics -II	BS	0	0	0	0	0	15	15	30	--	50	--	**50**

BSC: Basic Science Course, **PCC**: Professional Core Course, **PCCL**: Professional Core Course laboratory, **UHV**: Universal Human Value Course, **NCMC:** Non-Credit Mandatory Course, **AEC**: Ability Enhancement Course, **PROJ**: Mini Project work, **L:** Lecture, **T**: Tutorial, **P**: Practical **S: SDA**: Skill Development Activity, **TW & SL-** Term Work & Self Learning, **K:** This letter in the course code indicates common to all the stream of engineering. **ESC:** Engineering Science Course, **CIE**: Continuous Internal Evaluation, **SEE**:Semester End Evaluation.

25DMAT41*: This non-credit mandatory course to be offered with only CIE and no SEE to Lateral entry students.

Professional Elective Course-I (3-0-0-0) or (2-0-1-0)			
25EEE451	Electromagnetic Field Theory (3-0-0-0)	25EEE454	Object Oriented Programming using JAVA (2-0-1-0)
25EEE452	Principles of Communication Systems (3-0-0-0)	25EEE455	Machine Learning Fundamentals (3-0-0-0)
25EEE453	Utilization of Electrical energy (3-0-0-0)		

Ability Enhancement Course – IV (0-0-1-0)			
25EEE461	AutoCAD for Electrical Engineering	25EEE464	PCB Design Laboratory
25EEE462	Advanced Arduino Programming	25EEE465	Scilab for DC Machines and Transformers
25EEE463	Programming Using RoboDK		

Environmental Science Project: The Environmental Science Project is an applied learning component designed to develop students' awareness, understanding, and responsibility toward the environment. It provides an opportunity to study real-world environmental issues

and apply scientific and engineering principles to design feasible and sustainable solutions. Central to this course is the alignment with the United Nations Sustainable Development Goals (SDGs), providing a global framework for students to address urgent environmental challenges through localized action.

The topics under environment include, but are not limited to, climate change, biodiversity, air and water pollution, land use, excess use of natural resources, earthquakes, rise in the earth's temperature, power generation, and soil erosion. By exploring these themes, students contribute to the realization of specific global targets, including Clean Water and Sanitation, Affordable and Clean Energy, Climate Action, Life Below Water, and Life on Land.

The project involves problem identification, field surveys, case studies, data collection, environmental audits, analysis, and the proposal of remedial or preventive measures. These interventions are aimed at improving biodiversity, air quality, and thermal comfort while promoting Responsible Consumption and Production and Sustainable Cities and Communities. Students can take up the project individually or in a group not exceeding four members. Participants are also encouraged to opt for Interdisciplinary Projects, fostering the collaborative thinking essential for achieving a sustainable balance between human activity and the natural world.

CIE:

(i) 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.

(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 project work shall be based on the rubrics. The marks awarded for the project report shall be the same for all the batches mates.

National Service Scheme /Physical Education/Yoga/ Music: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PED) (Sports and Athletics), Yoga (YOG), and Music (MUS) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester and IV semester (for 2 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, Yoga and Music 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. Students may opt for different activities/options across semesters. For instance, a student participating in PE during 3rd semester may choose NSS in the 4th semester or Yoga or Music.

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