NEW HORIZON
COLLEGE OF ENGINEERING

Department of Electrical and Electronics Engineering

Batch: 2021-2025

Scheme: 2021
Credits: 160



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Department of Electrical and Electronics Engineering
BATCH: 2021-2025

Scheme: 2021
CREDITS: 160

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

PROGRAM OUTCOMES (POs)

S. No.	Graduate Attributes	Program Outcomes (POs)
1	Engineering Knowledge	PO1: Able to understand the fundamentals of mathematics, science, Electrical and Electronics Engineering and apply them to the solution of complex engineering problems.
2	Problem Analysis	PO2: Ability to identify, formulate and analyse real time problems in Electrical and Electronics Engineering.
3	Design and Development of Solutions	PO3: Design solutions for complex engineering problems, that meet the specified needs and to interpret the data.
4	Investigation of Problem	PO4: Use research based knowledge and research methods to provide valid solutions for complex problems in Electrical and Electronics Engineering.
5	Modern Tool usage	PO5: Apply appropriate tools techniques for modeling, analyzing and solving Electrical and Electronics Engineering devices & systems.
6	Engineer and society	PO6: To give basic knowledge of social, economical, safety and cultural issues relevant to professional engineering.
7	Environment and sustainability	PO7: To impart knowledge related to the design and development of modern systems which are environmentally sensitive and to understand the importance of sustainable development.

8	Ethics	PO8: Apply ethical principles and professional responsibilities in engineering practice.
9	Individual & team work	PO9: Ability to visualize and function as an individual and as a member in a team of a multi-disciplinary environment.
10	Communication	PO10: Ability to communicate effectively complex engineering ideas to the engineering community & the society at large.
11	Lifelong learning	PO11: To impart education to learn and to engage in independent and life – long learning in the technological change.
12	Project management and finance	PO12: Ability to handle administrative responsibilities, manage projects & handle finance related issues in a multi-disciplinary environment.

PEOs to POs mapping

	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**
PEO1	3	3	3	3	3	2	2	2	2	2	2	2	3	3
PEO2	3	3	3	3	3	2	2	2	2	2	2	2	3	3
PEO3	2	2	2	2	2	3	3	3	3	2	2	2	2	2

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO 1: Graduates will be able to solve real life problems of power system and power Electronics using MiPower, PSPICE and MATLAB software tools and hardware.

PSO 2: Graduates will be able to Develop & support systems based on Renewable and sustainable Energy sources.

PHYSICS CYCLE – I SEMESTER												
Sl. No	**Course Code**	**Course**	**BoS**	**Credit Distribution**				**Overall Credits**	**Contact Hours**	**Marks**		
				L	**T**	**P**	**S**			**SEE**	**CIE**	**Total**
1	21MAT11A	Applied Mathematics -I	AS	3	1	0	0	4	5	50	50	100
2	21PHY12A	Engineering Physics	AS	3	0	0	0	3	4	50	50	100
3	21MEE13A	Elements of Mechanical Engineering	ME	3	0	0	0	3	4	50	50	100
4	21CIV14A	Elements of Civil Engineering	CV	3	0	0	0	3	4	50	50	100
5	21EEE15A	Basic Electrical Engineering	EE	3	0	0	0	3	4	50	50	100
6	21PHL16A	Engineering Physics Lab	AS	0	0	1	0	1	3	50	50	100
7	21EEL17A	Basic Electrical Engineering Lab	EE	0	0	1	0	1	3	50	50	100
8	21AEC11A	Communicative English	HSS	1	0	0	0	1	2	50	50	100
9	21AEC12A	Entrepreneurship Development - I	MBA	1	0	0	0	1	1	50	50	100
Total								**20**	**30**	**450**	**450**	**900**

CHEMISTRY CYCLE - II SEMESTER												
Sl. No	**Course Code**	**Course**	**BoS**	**CREDIT DISTRIBUTION**				**Overall Credits**	**Contact Hours**	**Marks**		
				L	**T**	**P**	**S**			**CIE**	**SEE**	**Total**
1	21MAT21A	Applied Mathematics-II	AS	3	1	0	0	4	5	50	50	100
2	21CHE22A	Engineering Chemistry	AS	3	0	0	0	3	4	50	50	100
3	21CSE23A	Problem solving using Python	CSE	3	0	0	0	3	4	50	50	100
4	21MEE24A	Computer Aided Engineering Drawing	ME	2	0	1	0	3	4	50	50	100
5	21ECE25A	Basic Electronics	ECE	3	0	0	0	3	4	50	50	100
6	21CHL26A	Engineering Chemistry Lab	AS	0	0	1	0	1	3	50	50	100
7	21CSL27A	Problem solving using Python Lab	CSE	0	0	1	0	1	3	50	50	100
8	21AEC21A	Professional Writing Skills in English	HSS	1	0	0	0	1	2	50	50	100
9	21AEC23A	Political Science	HSS	1	0	0	0	1	1	50	50	100
Total								**20**	**30**	**450**	**450**	**900**

New Horizon College of Engineering
Department of Electrical and Electronics Engineering
Scheme of Third Semester B.E Program

S. No	Course Code	Course	BoS	Credit Distribution				Overall Credits	Conta ct Hours	Marks		
				L	T	P	S			CIE	SEE	Total
1	21EEE31A	Applied Mathematics-III	AS	3	0	0	0	3	4	50	50	100
2	21EEE322A	Digital system design using verilog	EEE	1	0	1	0	2	3	50	50	100
3	21HSS332A / 21HSS333A	Aadalitha Kannada / Vyavaharikha Kannada	HSS	1	0	0	0	1	1	50	50	100
4	21HSS342A	Environmental Science	HSS	1	0	0	0	1	1	50	50	100
5	21EEE35A	Analog and linear integrated circuits	EEE	3	0	0	0	3	4	50	50	100
6	21EEE36A	Electric circuit theory	EEE	3	0	0	0	3	4	50	50	100
7	21EEE37A	DC machines and transformers	EEE	3	0	0	0	3	4	50	50	100
8	21EEL35A	Analog and linear integrated circuits Laboratory	EEE	0	0	1	0	1	2	50	50	100
9	21EEL36A	Electric circuit theory Laboratory	EEE	0	0	1	0	1	2	50	50	100
10	21EEL37A	DC machines and transformers Laboratory	EEE	0	0	1	0	1	2	50	50	100
11	21EEE38A	Mini Project I	EEE	0	0	2	0	2	4	50	50	100
12	21DMAT31A*	Basic Applied Mathematics-I	AS	0	0	0	0	0	2	**50**	**50**	**100**
Total								**21**	**31/33**	**550/ 600**	**550/ 600**	**1100/ 1200**

*Applicable to Diploma students

New Horizon College of Engineering
Department of Electrical and Electronics Engineering
Scheme of Fourth Semester B.E Program

S. No	Course Code	Course	BoS	Credit Distribution				Overall Credits	Contact Hours	Marks		
				L	T	P	S			CIE	SEE	Total
1	21EEE41A	Applied Mathematics-IV	AS	3	0	0	0	3	4	50	50	100
2	21HSS421A	Life Skills for Engineers	HSS	1	0	1	0	2	3	50	50	100
3	21HSS431A	Entrepreneurship Development -2	HSS	1	0	0	0	1	1	50	50	100
4	21HSS441A	Constitution of India & Professional Ethics	HSS	1	0	0	0	1	1	50	50	100
5	21EEE45A	Control systems	EEE	3	0	0	0	3	4	50	50	100
6	21EEE46A	Synchronous and induction machines	EEE	3	0	0	0	3	4	50	50	100
7	21EEE47A	Microcontroller and embedded systems	EEE	3	0	0	0	3	4	50	50	100
8	21EEL45A	Control systems Laboratory	EEE	0	0	1	0	1	2	50	50	100
9	21EEL46A	Synchronous and induction machines Laboratory	EEE	0	0	1	0	1	2	50	50	100
10	21EEL47A	Microcontroller and embedded systems	EEE	0	0	1	0	1	2	50	50	100

`		Laboratory										
11	21EEE48A	Summer Internship - I	EEE	0	0	0	2	2	0	50	50	100
12	21DMAT41A*	Basic Applied Mathematics-II	HSS	0	0	0	0	0	2	**50**	**50**	**100**
13	21DAEC40A*	Communicative English	AS	0	0	0	0	0	2	**50**	**50**	**100**
Total								21	27/31	550/650	550/650	1100/1300

*Applicable to Diploma students

NEW HORIZON COLLEGE OF ENGINEERING

B. E. in Electrical and Electronics Engineering

Scheme of Teaching and Examinations for 2021- 2025 BATCH (2021 Scheme)

V Semester													
S. No.	**Course and Course Code**		**Course Title**	**BoS**	**Credit Distribution**				**Overall Credits**	**Contact Hours**	**Marks**		
					L	**T**	**P**	**S**			**CIE**	**SEE**	**Total**
1	PCC	21EEE51	Power Electronics	EE	3	0	0	0	3	3	50	50	**100**
2	PCCL	21EEL51	Power Electronics Laboratory	EE	0	0	1	0	1	2	50	50	**100**
3	PCC	21EEE52	Industrial Automation	EE	3	0	0	0	3	3	50	50	**100**
4	PCCL	21EEL52	Industrial Automation Laboratory	EE	0	0	1	0	1	2	50	50	**100**
5	PCC	21EEE53	Transmission Distribution and Protection	EE	3	0	0	0	3	3	50	50	**100**
6	PEC	21EEE54X	Professional Elective Course-I	EE	3	0	0	0	3	3	50	50	**100**
7	AEC	21EEL55X	Ability Enhancement Course-V	EE	0	0	1	0	1	2	50	50	**100**
8	MP	21EEE56	Mini Project	EE	0	0	1	0	1	2	50	50	**100**
9	AEC	21EEK57	Research Methodology and IPR	EE	1	0	0	0	1	2	50	50	**100**
10	UHV	21EEK58	Innovation and Design Thinking	EE	1	0	0	0	1	1	50	50	**100**
								Total	**18**	**23**	**500**	**500**	**1000**

PCC: Professional Core Course, **PCCL**: Professional Core Course laboratory, **UHV**: Universal Human Value Course, **NCMC**: Non-Credit Mandatory Course, **AEC**: Ability Enhancement Course, **PEC**: Professional Elective Course, **PROJ**: Mini Project work **L:** Lecture, **T**: Tutorial, **P**: Practical **S: SDA**: Self Study for Skill Development, **CIE**: Continuous Internal Evaluation, **SEE**: Semester End Evaluation

Professional Elective Course-I			
21EEE541	Object Oriented programming using JAVA	21EEE544	Professional Ethics
21EEE542	Signals and Systems	21EEE545	Electromagnetic Field Theory
21EEE543	Advanced Control Systems		

Ability Enhancement Course-V (For EEE, all are Laboratory Courses 0-0-1-0)			
21EEL551	Simulation tools in Electrical Engineering	21EEL553	Advanced Arduino programming
21EEL552	Power System Protection	21EEL554	Introduction to MATLAB

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.

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 student can do mini project as

(i) A group of 2 if mini project work is single discipline (applicable to all IT allied branches)

(ii) A group of 2-4 if mini project work is single discipline (applicable to all Core Branches)

(S) A group of 2 –4 students if the Mini Project work is a multidisciplinary (Applicable to all Branches)

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) Inter disciplinary: 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 percentage ratioof50:25:25.The marks awarded for the project report shall be the same for all the batch mates

Credit Definition: 1-hour Lecture (L) per week=1Credit 2-hoursTutorial(T) per week=1Credit 2-hours Practical / Drawing (P) per week=1Credit 2-hours Self Study for Skill Development (SDA) per week = 1 Credit	03-Credits courses are to be designed for 40 hours in Teaching-Learning Session 02- Credits courses are to be designed for 25 hours of Teaching-Learning Session 01-Credit courses are to be designed for 15 hours of Teaching-Learning Sessions

NEW HORIZON COLLEGE OF ENGINEERING
B. E. in Electrical and Electronics Engineering
Scheme of Teaching and Examinations for 2021- 2025 BATCH (2021 Scheme)

VI Semester													
S. No.	**Course and Course Code**		**Course Title**	**BoS**	**Credit Distribution**				**Overall Credits**	**Contact Hours**	**Marks**		
					L	**T**	**P**	**S**			**CIE**	**SEE**	**Total**
1	HSMC	21EEE61	Operation Research and Management	EE	3	0	0	0	3	3	50	50	**100**
2	PCC	21EEE62	Advanced Industrial and Building Automation	EE	3	0	0	0	3	3	50	50	**100**
3	PCCL	21EEL62	Advanced Industrial and Building Automation Laboratory	EE	0	0	1	0	1	2	50	50	**100**
4	PCC	21EEE63	Power System Analysis	EE	3	0	0	0	3	3	50	50	**100**
5	PCCL	21EEL63	Power System Analysis Laboratory	EE	0	0	1	0	1	2	50	50	**100**
6	PEC	21EEE64X	Professional Elective Course-II	EE	3	0	0	0	3	3	50	50	**100**
7	UHV	21EEK65	Social Connect and Responsibility	EE	0	0	1	0	1	2	50	-	**50**
8	INT	21EEE66	Innovation/Entrepreneurship/ Societal Internship	EE	0	0	3	0	3	0	50	50	**100**
9	MP	21EEE67	Mini project	EE	0	0	1	0	1	2	50	50	**100**
10	OEC	21NHOP6XX	Industrial Open Elective Course-I	Offering Dept.	3	0	0	0	3	3	50	50	**100**
Total									**22**	**23**	**500**	**450**	**950**

HSMC: Humanity and Social Science & Management Course, **PCC**: Professional Core Course, **PCCL**: Professional Core Course laboratory, **NCMC:** Non-Credit Mandatory Course, **AEC**: Ability Enhancement Course, **PEC**: Professional Elective Course, **OEC**: Open Elective Course, **PROJ**: Project work**, L:** Lecture, **T**: Tutorial, **P**: Practical **S: SDA**: Self Study for Skill Development, C**IE**: Continuous Internal Evaluation, **SEE**: Semester End Evaluation.

Industrial Open Elective Course-I (OEC): Credit for OEC is 03 (L: T: P: S) can be considered as(3: 0: 0 : 0). The teaching and learning of these Courses will be based on hands-on. The Course Assessment will be based on CIE and SEE in practical mode. This Courses will be offered by Centre of Excellence to students of all the branches. Registration to Industrial open electives shall be documented and monitored on college level.

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.

21XXX61 (HSMC)- This course must be pertaining to economics and management of the concerned degree program. The course syllabus should have both economics and management topics and the course title should bear the word Management.
For IT allied Branches: Software Product Management
For Core Branches: Engineering Economics and Management / Industrial Management / Construction Management

Professional Elective Course-II			
21EEE641	Introduction to Cyber Security	21EEE644	High Voltage Engineering
21EEE642	Data Structures and Algorithms using Python	21EEE645	Special Electrical Machines
21EEE643	CMOS VLSI Design		

Credit Definition: 1-hour Lecture (L) per week=1Credit 2-hoursTutorial(T) per week=1Credit 2-hours Practical / Drawing (P) per week=1Credit 2-hours Self Study for Skill Development (SDA) per week = 1 Credit	03-Credits courses are to be designed for 40 hours in Teaching-Learning Session 02- Credits courses are to be designed for 25 hours of Teaching-Learning Session 01-Credit courses are to be designed for 15 hours of Teaching-Learning Sessions

NEW HORIZON COLLEGE OF ENGINEERING

B. E. in Electrical and Electronics Engineering

Scheme of Teaching and Examinations for 2021- 2025 BATCH (2021 Scheme)

VII Semester													
S. No.	**Course and Course Code**		**Course Title**	**BoS**	**Credit Distribution**				**Overall Credits**	**Contact Hours**	**Marks**		
					L	**T**	**P**	**S**			**CIE**	**SEE**	**Total**
1	IPCC	21EEE71	Electrical Drives and Vehicles	EE	2	0	1	0	3	4	50	50	**100**
2	PCC	21EEE72	Photo Voltaic Systems and Applications	EE	3	0	0	0	3	3	50	50	**100**
3	PROJ	21EEE73	Project Work	EE	0	0	12	0	12	0	100	100	**200**
4	AEC	21EEK74	Scientific Foundations of Health	EE	1	0	0	0	1	1	50	50	**100**
5	OEC	23NHOP7XX	Industrial Open Elective Course-II	Offering Dept.	3	0	0	0	3	3	50	50	**100**
								Total	**22**	**11**	**300**	**300**	**600**

PCC: Professional Core Course, **PCCL**: Professional Core Course laboratory, **PEC**: Professional Elective Course, **OEC**: Open Elective Course, **PROJ**: Project work**, L:** Lecture, **T**: Tutorial, **P**: Practical **S: SDA**: Self Study for Skill Development, C**IE**: Continuous Internal Evaluation, **SEE**: Semester End Evaluation.

NCMC	**21NSS84**	National Service Scheme (NSS)	NSS coordinator	All students have to register for any one of the courses namely National Service Scheme, Physical Education (PE) (Sports and Athletics) and Yoga with the concerned coordinator of the course during the first week of V semester. The activities shall be carried out from (for 4 semesters) between V semester to VIII semester. SEE in the above courses shall be conducted during VIII semester examinations and the accumulated CIE marks shall be added to the SEE marks. Successful completion of the registered course is mandatory for the award of the degree. The events shall to be reflected in the calendar prepared for the NSS, PE and Yoga activities.
	21PES84	Physical Education (PE) (Sports and Athletics)	Physical Education Director	
	21YOG84	Yoga	Yoga Teacher	

Industrial Open Elective Course (OEC): Credit for OEC is 03 (L: T: P: S) can be considered as (3: 0: 0: 0). The teaching and learning of these Courses will be based on hands-on. The Course Assessment will be based on CIE and SEE in practical mode. This Courses will be offered by Centre of Excellence to students of all the branches. Registration to Industrial open electives shall be documented and monitored on college level.

Project Work:

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 percentage ratio of 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

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

SEE procedure for Project Work: 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 percentage ratio of 50:25:25.

Credit Definition: 1-hour Lecture (L) per week=1Credit 2-hoursTutorial(T) per week=1Credit 2-hours Practical / Drawing (P) per week=1Credit 2-hours Self Study for Skill Development (SDA) per week = 1 Credit	03-Credits courses are to be designed for 40 hours in Teaching-Learning Session 02-Credits courses are to be designed for 25 hours of Teaching-Learning Session 01-Credit courses are to be designed for 15 hours of Teaching-Learning Sessions

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Scheme of Teaching and Examinations for 2021- 2025 BATCH (2021 Scheme)

VIII Semester

S. No.	Course and Course Code		Course Title	BoS	Credit Distribution				Overall Credits	Contact Hours	Marks		
					L	T	P	S			CIE	SEE	Total
1	PEC	21EEE81X	Professional Elective Course-III	EE	3	0	0	0	3	3	50	50	**100**
2	SEM	21EEE82	Technical Seminar	EE	0	0	1	0	1	0	50	-	**50**
3	INT	21EEE83	Research Internship/ Industry Internship/ Rural Internship	EE	0	0	12	0	12	0	100	100	**200**
4	NCMC	21NSS84	National Service Scheme (NSS)	NSS coordinator	0	0	0	0	0	2	50	50	**100**
		21PES84	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		21YOG84	Yoga	Yoga Teacher									
Total									**16**	**5**	**250**	**200**	**450**

NCMC: Non-Credit Mandatory Course, **AEC**: Ability Enhancement Course, **SEM**: Seminar, **INT**: Industry Internship / Research Internship / Rural Internship, **L:** Lecture, **T**: Tutorial, **P**: Practical **S: SDA**: Self Study for Skill Development, , **CIE**: Continuous Internal Evaluation, **SEE**: Semester End Evaluation.

Professional Elective Course-III			
21EEE811	Bio Inspired Design and innovation	21EEE814	Power System Operation and Control
21EEE812	Neural Network and Fuzzy Logic in Electrical Engineering	21EEE815	Smart Grid Technologies
21EEE813	Machine learning for Electrical Engineering		

Elucidation:

Research/Industry 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 **24 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 SEE 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.

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.

Non – credit mandatory courses (NCMC):

National Service Scheme/ Physical Education (Sport and Athletics)/ Yoga:

(1) Securing 40 % or more in CIE,35 % or more marks in SEE and 40 % or more in the sum total of CIE + SEE leads to successful completion of the registered course.

(2) In case, students fail to secure 35 % marks in SEE, they has to appear for SEE during the subsequent examinations conducted by the University.

(3) In case, any student fails to register for NSS, PE or Yoga / fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have not completed the requirements of the course. In such a case, the student has to fulfill the course requirements during subsequently to earn the qualifying CIE marks subject to the maximum programme period.

(4) Successful completion of the course shall be indicated as satisfactory in the grade card. Non-completion of the course shall be indicated as Unsatisfactory.

(5) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.

TECHNICAL SEMINAR (21XXX82): The objective of the seminar is to inculcate self-learning, present the seminar topic confidently, enhance communication skill, involve in group discussion for exchange of ideas. Each student, under the guidance of a Faculty, shall choose, preferably, a recent topic of his/her interest relevant to the programme of specialization.

(i) Carry out literature survey, systematically organize the content.
(ii) Prepare the report with own sentences, avoiding a cut and paste act.
(iii) Type the matter to acquaint with the use of Micro-soft equation and drawing tools or any such facilities.
(iv) Present the seminar topic through PowerPoint slides.
(v) Answer the queries and involve in debate/discussion.
(vi) Submit a typed report with a list of references.

The participants shall take part in the discussion to foster a friendly and stimulating environment in which the students are motivated to reach high standards and become self-confident.

Evaluation Procedure:

The CIE marks for the seminar shall be awarded (based on the relevance of the topic, presentation skill, participation in the question-and-answer session, and quality of report) by the committee constituted for the purpose by the Head of the Department. The committee shall consist of three teachers from the department with the senior-most acting as the Chairman.

Marks distribution for CIE of the course:

Seminar Report: 25 marks Presentation
skill: 10 marks
Technical Paper Publication: 15 marks.

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