ADHIYAMAAN COLLEGE OF ENGINEERING

[An Autonomous Institution Affiliated to Anna University, Chennai] [Accredited by NAAC]
Dr.M.G.R NAGAR, HOSUR, KRISHNAGIRI (DT) – 635 130, TAMILNADU, INDIA
REGULATION 2025
CHOICE BASED CREDIT SYSTEM

B.E - ELECTRICAL AND ELECTRONICS ENGINEERING

VISION

To produce competent Electrical and Electronics Engineers by imparting effective teaching and learning processes to meet the rapidly changing technical scenario.

MISSION

- To produce exemplary Electrical Engineers with sound knowledge on fundamentals.
- To inculcate the students with innovative technical skills, entrepreneurial expertise and research capabilities.
- To promote leadership qualities and ethical attitude.

The Programme defines Programme Educational Objectives, Programme Outcomes and Programme Specific Outcomes as follows:

I. PROGRAMME EDUCATIONAL OBJECTIVES [PEOs]

PEO 1: Graduates will excel in their careers and higher studies by learning the Engineering fundamentals with more emphasis in Electrical and Electronics Engineering

PEO 2: Graduates will work in multidisciplinary teams with essential engineering expertise and with an ethical attitude.

PEO 3: Graduates will enhance their knowledge through lifelong learning to transform engineering solutions into a broader social context.

II. PROGRAMME OUTCOMES [POs]

PROGRAMME OUTCOMES [POs]

PO1: Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization to develop to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development.

PO3: Design/Development of Solutions: 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.

PO4: Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modeling, analysis & interpretation of data to provide valid conclusions.

PO5: Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems.

PO6: The Engineer and The World: 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.

PO7: Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws.

PO8: Individual and Collaborative Teamwork: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO9: Communication: 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.

PO10: Project Management and Finance: 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.

PO11: Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technology and iii) critical thinking in the broadest context of technological change.

III. PROGRAM SPECIFIC OUTCOMES [PSOs]

PSO1: Skilled Professional in Electrical & Electronic Systems

Ability to identify, formulate and solve real time problems by applying the knowledge acquired during the course of the program.

PSO2: Problem Solving Skills:

Ability to understand the recent technological developments in Electrical & Electronics Engineering and to develop products/software to cater the societal & Industrial needs.

PSO3: Successful Career:

Ability to utilize the modern technologies in building innovative career paths for being a thriving entrepreneur and to have a zest for higher studies.

Correlation of PEOs with POs and PSOs

Program Educational Objectives (PEOs)	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	1	2	3	4	5	6	7	8	9	10	11	1	2	3
PEO I	3	2	3	3	3	2				2	3	3	3	3
PEO II	2	3	3	3	3	3	3	3	3	3	2	2	2	3
PEO III						2	2	2	3	3	3			3

ADHIYAMAAN COLLEGE OF ENGINEERING - HOSUR

(An Autonomous institute affiliated to Anna University, Chennai)

Regulation-2025 (CBCS)

B.E- ELECTRICAL AND ELECTRONICS ENGINEERING

CURRICULUM FOR SEMESTER-I

S. No	CAT	COURSE CODE	COURSE TITLE	L	T	P	C	MARKS		
								CA	EA	TOT
		125IP001	Induction Programme							
THEORY										
1	HS MC	125ENI01	Professional English-I	3	0	2	4	50	50	100
2	BS	125MAT02	Vector Algebra & Calculus	3	1	0	4	40	60	100
3	BS	125PHT03	Engineering Physics	2	0	0	3	40	60	100
4	BS	125CYT04	Engineering Chemistry	2	0	0	3	40	60	100
5	ES	125EGT05	Engineering Graphics	3	0	0	3	40	60	100
6	ES	125CMT06	Basic Civil and Mechanical Engineering	3	0	0	3	40	60	100
7	VAC	125HST07	Heritage of Tamils	1	0	0	0	40	60	100
PRACTICALS										
8	BS	125PHP08/ 125CYP08	Engineering Physics /Chemistry Laboratory	0	0	2	1	60	40	100
9	ES	125PPP09	Design Thinking	0	0	2	1	60	40	100
10	AC		Idea Lab							
			TOTAL MANDATORY CREDITS				**22**			

CURRICULUM FOR SEMESTER-II

S. No	CAT	COURSE CODE	COURSE TITLE	L	T	P	C	MARKS		
								CA	EA	TOT
THEORY										
1	HS MC	225ENI01	Professional English-II	3	0	0	3	40	60	100
2	BS	225MAT02	Probability and Statistics	3		0	4	40	60	100
3	BS	225EST03	Environmental Sciences and Sustainability	2		0	2	40	60	100
4	ES	225PPT04	Python Programming	3		4	4	40	60	100
5	BS	225PET05	Physics for Electronics Engineering	3		0	3	40	60	100
6	ES	225CAI06	Electric Circuit Analysis	3		2	4	50	50	100
7	VAC	225HST07	Tamils and Technologies	1	0	0	0	40	60	100
PRACTICALS										
8	ES	225EPP02	Workshop	0	0	2	1	60	40	100
			TOTAL MANDATORY CREDITS				**21**			

CURRICULUM FOR SEMESTER-III

S. No	CAT	COURSE CODE	COURSE TITLE	L	T	P	C	MARKS		
								CA	EA	TOT
THEORY										
1	BS	325MAT01	Transforms and Partial Differential Equations	3	1	0	4	40	60	100
2	PC	325EET02	Electromagnetic Theory	3		0	3	40	60	100
3	PC	325EET03	Signals and systems	3		0	3	40	60	100
4	PC	325EET04	Electron Devices and Circuits	3		2	3	40	60	100
5	PC	325EEI05	Measurements and Instrumentation	3		2	4	50	50	100
6	PC	325CST04	C Programming and Data Structures	3	0	0	3	40	60	100
PRACTICALS										
7	PC	325EEP07	Electron Devices and Circuits Laboratory	0	0	2	1	60	40	100
8	PC	325CSP07	C Programming and Data Structures Laboratory	0		2	1	60	40	100
9	EEC		Internship -I	0	0	2	1	100	0	100
	AC	325GEV01	Advanced Logical Thinking /Professional Development Course	0		2	0	100	0	100
			TOTAL MANDATORY CREDITS				**23**			

CURRICULUM FOR IV SEMESTER

S. No	CAT	COURSE CODE	COURSE TITLE	L		P	C	MARKS		
								CA	EA	TOT
THEORY										
1	BS	425NMT01	Numerical Methods	3		0	4	40	60	100
2	PC	425EEI02	Control Systems	3		2	4	50	50	100
3	PC	425EET03	Digital Logic design	3		0	3	40	60	100
4	PC	425EET04	**PROFESSIONAL ELECTIVE – I**	3		0	3	40	60	100
5	OE		Interdisciplinary course	3		0	3	40	60	100
6	PC	425EET05	DC Machines and Transformers	3	0	0	3	40	60	100
PRACTICALS										
7	PC	425EEP08	DC Machines and Transformers Laboratory	0	0	2	1	60	40	100
8	EEC	425VAP02	Exploration of Engineering				1			
9	EEC		Internship -II	0	0	2	1	100	0	100
			TOTAL MANDATORY CREDITS				**23**			

CURRICULUM FOR V SEMESTER

S. No	CAT	COURSE CODE	COURSE TITLE	L	T	P	C	MARKS		
								CA	EA	TOT
THEORY										
1	HS		Entrepreneurship and start-ups (Protosem)	2	0	0	2	40	60	100
2	PC	525EET01	Transmission and Distribution	3	1	0	4	40	60	100
3	PC	525EEI02	Synchronous and Asynchronous Machines	3	0	2	4	50	50	100
4	PC	522EET03	Linear Integrated Circuits and Applications	3	0	0	3	40	60	100
5	PC	**525EEEXX**	**PROFESSIONAL ELECTIVE – II**	3	0	0	3	40	60	100
6	**PE**	**525EEEXX**	**PROFESSIONAL ELECTIVE – III**	**3**	**0**	**0**	**3**	40	60	100
7	**OE**	**525OEEXX**	**OPEN ELECTIVE – I**	**3**	**0**	**0**	**3**		60	100
PRACTICALS										
8	PC	522EEP07	Linear Integrated Circuits Laboratory	0	0	2	1	60	40	100
			TOTAL MANDATORY CREDITS				**23**			

CURRICULUM FOR VI SEMESTER

S. No	CAT	COURSE CODE	COURSE TITLE	L	T	P	C	MARKS		
								CA	EA	TOT
THEORY										
1	PC	625EET01	Power Electronics	3	0	0	3	40	60	100
2	PC	625EET02	Microprocessors and Microcontrollers	3	0	0	4	40	60	100
3	PC	625EET03	Power System Analysis and Stability	3	0	0	3	40	60	100
4	PC	625EEI04	Embedded Systems Design Board Development and Debug	3	0	2	4	50	50	100
5	**PE**	**625EEEXX**	**PROFESSIONAL ELECTIVE-IV**	**3**	**0**	**0**	**3**	40	60	100
6	**OE**	**625OEEXX**	**OPEN ELECTIVE-II**	**3**	**0**	**0**	**3**	40	60	100
PRACTICALS										
7	EEC	625EEP08	Power Electronics Laboratory	0	0	2	1	60	40	100
8	EEC	625EEP09	Mini Project	0	0	4	2	60	40	100
			TOTAL MANDATORY CREDITS				**23**			

CURRICULUM FOR VII SEMESTER

S. No	CAT	COURSE CODE	COURSE TITLE	L	T	P	C	MARKS		
								CA	EA	TOT
THEORY										
1	PC	725EET01	Power System Operation and Control	3	0	0	3	40	60	100
2	PC	725EEI02	Electric Drives and Control	3	0	2	4	50	50	100
3	PC	725EET03	Smart Grid	3	0	0	3	40	60	100
4	**PE**	**725OEEXX**	**OPEN ELECTIVE-III**	**3**	**0**	**0**	**3**	40	60	100
5	**PE**	**725OEEXX**	**OPEN ELECTIVE-IV**	**3**	**0**	**0**	**3**	40	60	100
6	**PE**	**725EEEXX**	**PROFESSIONAL ELECTIVE-V**	**3**	**0**	**0**	**3**	40	60	100
PRACTICALS										
8	PC	725EEP07	Power System Simulation Laboratory	0	0	2	1	60	40	100
			TOTAL MANDATORY CREDITS				**20**			

CURRICULUM FOR VIII SEMESTER

S. No	CAT	COURSE CODE	COURSE TITLE	L	T	P	C	MARKS		
								CA	EA	TOT
THEORY										
1	EEC	**825EEP04**	**Capstone project**	**0**	**0**	**20**	**10**	60	40	100
			TOTAL MANDATORY CREDITS				**10**			

PROFESSIONAL ELECTIVE COURSES

S.NO	Technology Based Electives	Industry Based Electives
1	Utilization and Conservation of Electrical Energy	Energy Management and Auditing
2	Under Ground Cable Engineering	Automotive Instrumentation and Control
3	HVDC and FACTS	Electric Vehicle Architecture
4	Power Quality Management	Design of Motor and Power Converters for Electric Vehicles
5	Restructured Power Market	Electric Vehicle Charging
6	EHVAC Power Transmission	Design of Electric Vehicle Charging System
7	Special Electrical Machines	Testing of Electric Vehicles
8	Analysis of Electrical Machines	Intelligent control of Electric Vehicles.
9	Multilevel Power Converters	Machine Learning with Application to Object Recognition
10	SMPS and UPS	AR/VR
11	Power Electronics for Renewable Energy Systems	Industry 4.0
12	Control of Power Electronics Circuits	Black Chain Development
13	Analysis of Power Converters	Robotic Process and Industrial Automation
14	Grid Integration Techniques and Challenges	Embedded C Programming
15	VLSI Design	Embedded System Programming
16	Smart system Automation	Embedded System for Automative Applications
17	Digital Signal Processing System Design	Embedded Processors
18	Design and Modelling of Renewable Energy Systems	MEMS and NEMS
19	Design of Photo Voltaic System	Big Data Analytics

20	Cyber Security	PLC Programming
21	Advanced Power Electronics for Renewable Integration.	Industrial Automation and Control
22	Micro grid Design and Control	Programmable Logic Controllers (PLC) and SCADA
23	Battery Management Systems (BMS) for EVs	Robotics and Automation
24	Vehicle-to-Grid (V2G) Integration	Industrial Instrumentation
25	Machine Learning for Power Systems	Data Analytics for Smart Energy Systems
26	Data Analytics for Smart Grids	Project Management in Electrical Industry
27	AI in Predictive Maintenance of Electrical Equipment	Energy Auditing and Conservation Techniques
28	MEMS and Nanoelectronics	Electric Mobility & Charging Infrastructure
29	Green Technologies in Electrical Engineering	Advanced Battery Management Systems (BMS)
30	AI-Powered Predictive Analytics in SCADA	
31	Hybrid Energy Systems (Solar-Wind-Hydro Integration)	

Open Elective Subjects Offered by EEE Department

1) Electric Vehicles and Mobility
2) Energy Auditing and Management (Valuable for Mechanical, Chemical, and Civil students)
3) Industrial Automation and Control (Strong appeal for Mechatronics, Mechanical, and CS students)
4) Smart Grid Technology (CS/IT/ECE students)
5) Electric Safety and Wiring Regulations (Civil and Architecture students)
6) IoT Applications in Smart Energy Systems (Combines EEE with IT/CS applications)
7) Home Automation and Embedded Systems (CS, IT, and ECE departments)
8) Battery Management Systems
9) Drone Technology and Power Systems
10) Smart Cities and Intelligent Infrastructure
11) Wearable Electronics and Biomedical Instrumentation

ALLOCATION OF CREDITS

Semester	I	II	III	IV	V	VI	VII	VIII
Credits	22	21	23	23	23	23	20	10
Total	165							

SUMMARY

S.No.	Subject Area	Credits as per semester								Credits Total
		I	II	III	IV	V	VI	VII	VIII	
1	HSMC	4	3	-	-	2	-	-	-	09
2	BS	11	9	4	4	-	-	-	-	30
3	ES	7	9	-	-	-	-	-	-	12
4	PC	-	-	18	11	12	14	11	-	72
5	PE	-	-	-	3	6	3	3	-	15
6	OE	-	-	-	3	3	3	6	-	06
7	EEC	-	-	-	1	-	3	-	10	17
8	VAC	0	0	-	-	-	-	-	-	-
9	INTERNSHIP			1	1	-	-	-	-	04
	Total	22	21	23	23	23	23	20	10	165