



Excel Engineering College
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Accredited by NBA(AERO, CSE, ECE, MECH & NAAC with "A+" and Recognised by UGC (2f & 12B)

Department of Electrical and Electronics Engineering

M.E.-EMBEDDED SYSTEMS AND TECHNOLOGIES

Course Outcomes

Regulation 2020

Batch 2021-2023

Sem : 1	Sub Code & Name :	20PMA104 & Applied Mathematics For Electronics Engineers
CO No	Course Outcome	
C101.1	Apply various methods in matrix theory to solve system of linear equations	
C101.2	Apply various methods in matrix theory to solve system of linear equations	
C101.3	Computation of probability and moments, standard distributions of discrete and continuous random variables and functions of a random variable	
C101.4	Could develop a fundamental understanding of linear programming models, able to develop a linear programming model from problem description, apply the simplex method for solving linear programming problems	
C101.5	Fourier series analysis and its uses in representing the power signals	

Sem : 1	Sub Code & Name :	22PES101 -VLSI Design and Reconfigurable Architecture
CO No	Course Outcome	
C102.1	Incorporating synchronous and asynchronous switching logics, with clocked circuits design.	
C102.2	The learning process delivers insight into developing CMOS design techniques and IC fabrication methods.	
C102.3	Understand the need of reconfigurable computing, hardware software co design and operation of SoC processor.	
C102.4	Design and development of reprogrammable analog devices and its usage for Embedded applications.	
C102.5	Understating and usage of HDL computational processes with improved design strategies.	

Sem : 1	Sub Code & Name :	22PES102 Microcontroller Based System Design
CO No	Course Outcome	
C103.1	Review of PIC controllers, learn assembly and C-programming of PIC	
C103.2	learn Interfacing of Microcontroller	
C103.3	Learners will study about PIC microcontroller and system design	
C103.4	The course would enable students to enrich their knowledge with hands on experiments and project based learning	
C103.5	Effectively utilize microcontroller software development tools such as a compiler, make files, or compile scripts	

Sem : 1	Sub Code & Name :	22PES103 Design of Embedded Systems
CO No	Course Outcome	
C104.1	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical.	
C104.2	understand the fundamental concepts of real-time operating systems	
C104.3	Describe the differences between the general computing system and the embedded system, also recognize the classification of embedded systems	
C104.4	Design real time embedded systems using the concepts of RTOS	
C104.5	Foster ability to understand the role of embedded systems in industry	

Sem : 1	Sub Code & Name :	22PESE03 -Digital Instrumentation
CO No	Course Outcome	
C105.1	Use digital integrated circuit logic family chips Systems design	
C105.2	Perform computational and measurement activities using digital techniques, build sequential and combinational logic circuits	
C105.3	Analyze working of A/D and D/A converters, use display devices for digital circuits, use digital meters for measurements	
C105.4	Graduates will understand the fundamental principles of electrical and electronics circuits and instrumentation, enabling them to understand current technology and to adapt to new devices and technologies.	
C105.5	Improved Employability and entrepreneurship capacity due to knowledge up gradation on recent trends in embedded	

Sem : 1	Sub Code & Name :	22PESE13 Embedded & Real Time Systems
CO No	Course Outcome	
C106.1	Infer a system component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, and ethical.	
C106.2	Construct simple programs on embedded platforms.	
C106.3	Correlate design and test systems that include both Hardware and software.	
C106.4	Interpret knowledge Applications on embedded systems with real time	
C106.5	Describe the knowledge in embedded systems with respect to communication field	

Sem : 1	Sub Code & Name :	22PES104 Embedded System Laboratory-I
CO No	Course Outcome	
C107.1	The students will learn design with simulators/ programming Environments	
C107.2	The students will learn design with simulators/experiments in programming	
C107.3	Processor boards, processor interfacing/ designing digital controllers	
C107.4	The students will learn design with simulators/experiments, in programming processor boards, processor interfacing/ designing digital controllers.	
C107.5	The students will learn design, modeling & simulation of Combinational, Sequential, Synchronous, Asynchronous circuits with simulators/experiments in programming processor boards, processor interfacing/designing reprogrammable system.	

Sem : 2	Sub Code & Name :	22PES201 Real Time Operating Systems
CO No	Course Outcome	
C108.1	Real-time scheduling and schedule ability analysis, including clock-driven and priority-driven scheduling	

C108.2	Theoretical background (specification/verification) and practical knowledge of real-time operating systems.
C108.3	understand the fundamental concepts of real-time operating systems
C108.4	After completing the course students will appreciate the use of multitasking techniques in real-time systems.
C108.5	Improved Employability and entrepreneurship capacity due to knowledge up gradation on recent trends in embedded systems design.

Sem : 2	Sub Code & Name :	22PES202 Python Programming With Machine Learning
CO No	Course Outcome	
C109.1	Students will be able to develop skill in system administration	
C109.2	Students will be able to network programming by learning Python	
C109.3	Students will also learn how to effectively use Python's very powerful processing primitives, modeling etc.	
C109.4	Improved Employability and entrepreneurship capacity	
C109.5	To knowledge up gradation on recent trends in embedded Systems design	

Sem : 2	Sub Code & Name :	22PES203 RISC Processor Architecture and Programming
CO No	Course Outcome	
C110.1	Describe the programmer's model of ARM processor and create and test assembly level programming	
C110.2	Analyze various types of coprocessors and design suitable coprocessor interface to ARM processor.	
C110.3	Identify the architectural support of ARM for operating system and analyze the function of memory Management unit of ARM	
C110.4	Students will develop more understanding on the concepts ARM Architecture, programming and application development	
C110.5	The learning process delivers insight into various embedded processors of RISC architecture./ computational processors with improved design strategies.	

Sem : 2	Sub Code & Name :	22PES204 Internet of Things
CO No	Course Outcome	
C111.1	Students will develop more understanding on the concepts of IOT and its present developments.	
C111.2	Students will study about different IOT technologies.	
C111.3	Students will acquire knowledge about different platforms and Infrastructure for IOT	
C111.4	Students will learn the art of implementing IOT	
C111.5	Students will learn the smart applications and control	

Sem : 2	Sub Code & Name :	22PESE21 Embedded Product Development
CO No	Course Outcome	
C112.1	Understand the integration of customer requirements in product design	
C112.2	Apply structural approach to concept generation, creativity, selection And testing	
C112.3	Understand various aspects of design such as industrial design, design of Consumer specific product, its Reverse Engineering manufacture	
C112.4	Interpreting various aspects of design such as industrial design, design of economic analysis and product architecture	
C112.5	Implementing Discussions/ Practice/Exercise onto revising & familiarizing the concepts acquired over the 5 Units of the subject for improved employ ability skills	

Sem : 2	Sub Code & Name :	22PESE33 Smart System Design
CO No	Course Outcome	
C113.1	The learning process delivers insight into categorizing various i/p/o/ p configurations of computational processors with improved communication strategies	
C113.2	Students will study about different embedded open source and cost effective techniques for developing solution for real time applications.	
C113.3	Students will acquire knowledge on different platforms and Infrastructure for Smart system design.	
C113.4	Improved Employability and entrepreneurship capacity due to knowledge upgradation on recent trends in embedded systems design.	
C113.5	Students will learn the art of implementing embedded system for smart applications and control.	

Sem : 2	Sub Code & Name :	22PES205 EMBEDDED SYSTEM LABORATORY-II
CO No	Course Outcome	
C114.1	The students will learn design with simulators/experiments ,in programming processor boards, processor interfacing/ designing digital controllers.	
C114.2	The students will learn design & simulation of Arithmetic ,Logic programs, Filters, Signal Analysis with simulators/experiment ,in programming processor boards, process or interfacing/Tools.	
C114.3	The students will learn programming compiling in various tools & software domains.	
C114.4	The students will learn programming compiling in various tools & software domains	
C114.5	Learning Communication Protocols & Experimenting with Support Software Tools for communication interfaces	

Sem : 3	Sub Code & Name :	22PTE301 RESEARCH METHODOLOGY AND IPR
CO No	Course Outcome	
C201.1	Formulate researchable questions	
C201.2	Define a research strategy and design a research project	
C201.3	Practice the principles of qualitative and quantitative social research	
C201.4	Present complex data or situations clearly	
C201.5	Learn about the different research techniques and research report.	

Sem : 3	Sub Code & Name :	22PES302 WIRELESS AND MOBILE COMMUNICATION
CO No	Course Outcome	
C202.1	Explain the basics of mobile Telecommunication system	
C202.2	Illustrate the generation of telecommunication systems in wireless network	
C202.3	Express the architecture of Wireless LAN technologies	
C202.4	Determine the functionality of network layer and identify a routing protocol for a given Ad hoc networks.	
C202.5	Compare the functionality of Transport and Application layer	

Sem : 3	Sub Code & Name :	22PPEE43 SMART GRID
CO No	Course Outcome	
C203.1	Explain the basics of smart grid and its issues.	
C203.2	Complete about different Smart Grid technologies.	
C203.3	Establish about different smart meters and advanced metering infrastructure.	
C203.4	Illustrate on power quality management in smart grids	
C203.5	Teach about the on LAN, WAN and cloud computing for smart grid applications.	

Sem : 3	Sub Code & Name :	22PES303 Project Work Phase- I
CO No	Course Outcome	
C204.1	Formulate a real world problem and develop its requirements	
C204.2	Develop a design solution for a set of requirements	
C204.3	Test and validate the conformance of the developed software against the original requirements of the problem	
C204.4	Work effectively with peers to pursue a goal	
C204.5	Take up any challenging practical problems and find solution by formulating proper methodology	

Sem : 4	Sub Code & Name :	22PES401 Project Work Phase -II
CO No	Course Outcome	
C205.1	Formulate a real world problem and develop its requirements	
C205.2	Develop a design solution for a set of requirements	
C205.3	Test and validate the conformance of the developed software against the original requirements of the problem	
C205.4	Work effectively with peers to pursue a goal	
C205.5	Take up any challenging practical problems and find solution by formulating proper methodology	



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COURSE CODE/COURSE NAME	CO 1	CO2	CO3	CO4	CO5	CO AVERAGE
SEMESTER III						
22PTE301 RESEARCH METHODOLOGY AND IPR	3.00	3.00	3.00	3.00	3.00	3.00
22PES302 WIRELESS AND MOBILE COMMUNICATION	3.00	3.00	3.00	3.00	3.00	3.00
22PPEE43 SMART GRID	3.00	3.00	3.00	3.00	3.00	3.00
22PES303 Project Work Phase- I	3.00	3.00	3.00	3.00	3.00	3.00
SEMESTER IV						
22PES401 Project Work Phase -II	3.00	3.00	3.00	3.00	3.00	3.00

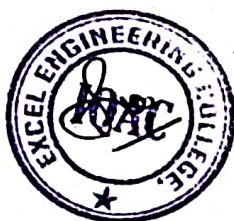
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Academic coordinator

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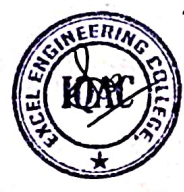
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COURSE CODE	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
SEMESTER IV															
C205	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
DIRECT ATTAINMENT (100%)	3.00	3.00	2.84	2.83	2.56	3.00	2.67	2.80	2.50	2.00	1.53	1.95	2.95	1.50	2.06
DIRECT ATTAINMENT (80%)	2.40	2.40	2.27	2.27	2.04	2.40	2.13	2.24	2.00	1.60	1.22	1.56	2.36	1.20	1.64
INDIRECT ATTAINMENT (100%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
INDIRECT ATTAINMENT (20%)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
TOTAL ATTAINMENT (100%)	3.00	3.00	2.87	2.87	2.64	3.00	2.73	2.84	2.60	2.20	1.82	2.16	2.96	1.80	2.24

S. Sankar
Academic coordinator

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SEMESTER IV															
C205	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
DIRECT ATTAINMENT (100%)	3.00	3.00	2.76	2.56	2.56	3.00	2.67	2.80	2.50	2.00	1.53	1.95	2.95	1.50	2.06
DIRECT ATTAINMENT (80%)	2.40	2.40	2.21	2.05	2.04	2.40	2.13	2.24	2.00	1.60	1.22	1.56	2.36	1.20	1.64
INDIRECT ATTAINMENT (100%)	2.82	2.68	2.69	2.70	2.64	2.66	2.66	2.66	2.68	2.62	2.71	2.66	2.65	2.58	2.64
INDIRECT ATTAINMENT (20%)	0.56	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.54	0.52	0.54	0.53	0.53	0.52	0.53
TOTAL ATTAINMENT (100%)	2.96	2.94	2.75	2.59	2.57	2.93	2.67	2.77	2.54	2.12	1.77	2.09	2.89	1.72	2.17

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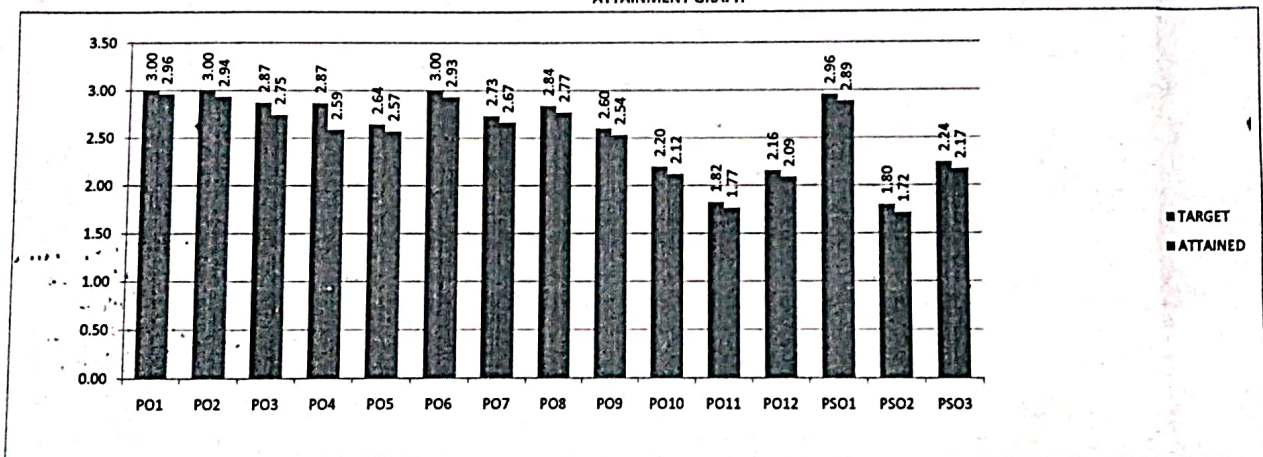


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 KOMARAPALAYAM - 637303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
M E - EMBEDDED SYSTEMS AND TECHNOLOGIES
2021-23 BATCH
TARGET AND ATTAINMENT (2021-23 BATCH)

PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
TARGET	3.00	3.00	2.87	2.87	2.64	3.00	2.73	2.84	2.60	2.20	1.82	2.16	2.96	1.80	2.24
ATTAINED	2.96	2.94	2.75	2.59	2.57	2.93	2.67	2.77	2.54	2.12	1.77	2.09	2.89	1.72	2.17

GRAPH-2021-2023

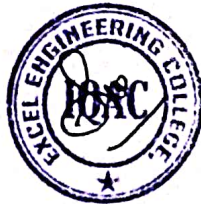
ATTAINMENT GRAPH



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 KOMARAPALAYAM - 637303



INDIRECT ATTINMENT MEASURES															
Attainment measures	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Student exit survey	2.80	2.62	2.71	2.59	2.57	2.63	2.54	2.64	2.63	2.63	2.59	2.69	2.76	2.63	2.64
Parent feedback survey	2.75	2.65	2.62	2.62	2.56	2.59	2.54	2.70	2.70	2.62	2.70	2.65	2.81	2.65	2.62
Alumni survey	2.81	2.58	2.56	2.61	2.61	2.66	2.64	2.53	2.63	2.53	2.69	2.58	2.68	2.59	2.61
Employer survey	2.78	2.70	2.63	2.70	2.63	2.78	2.70	2.78	2.70	2.63	2.70	2.63	2.70	2.55	2.78
Co-curricular, Extra-curricular	2.90	2.80	2.80	2.80	2.90	2.70	2.80	2.90	2.90	2.90	2.90	2.70	2.60	2.50	2.50
Placement training and value added course	2.80	2.90	2.70	2.90	2.70	2.50	2.50	2.60	2.70	2.50	2.90	2.90	2.50	2.50	2.40
Industrial Visit and In plant training	2.90	2.50	2.80	2.70	2.50	2.80	2.90	2.50	2.50	2.50	2.50	2.50	2.50	2.63	2.90
Indirect Attainment	2.82	2.68	2.69	2.70	2.64	2.66	2.66	2.66	2.68	2.62	2.71	2.66	2.65	2.58	2.64
20% of Indirect attainment	0.56	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.54	0.52	0.54	0.53	0.53	0.52	0.53
DIRECT ATTINMENT MEASURES															
Attainment measures	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct attainment	3.00	3.00	2.84	2.83	2.56	3.00	2.67	2.80	2.50	2.00	1.53	1.95	2.95	1.50	2.06
Indirect Attainment	2.40	2.40	2.27	2.27	2.04	2.40	2.13	2.24	2.00	1.60	1.22	1.56	2.36	1.20	1.64
Direct attainment 80%(A)	2.82	2.68	2.69	2.70	2.64	2.66	2.66	2.66	2.68	2.62	2.71	2.66	2.65	2.58	2.64
Indirect attainment 20%(B)	0.56	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.54	0.52	0.54	0.53	0.53	0.52	0.53
Overall attainment	2.96	2.94	2.81	2.81	2.57	2.93	2.67	2.77	2.54	2.12	1.77	2.09	2.89	1.72	2.17



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Department of Electrical and Electronics Engineering

M.E.-POWER ELECTRONICS AND DRIVES

Course Outcomes

Regulation 2020

Batch 2021-2023

Sem : 1	Sub Code & Name :	20PMA104 & Applied Mathematics For Electronics Engineers
CO No	Course Outcome	
C101.1	Apply various methods in matrix theory to solve system of linear equations	
C101.2	Apply various methods in matrix theory to solve system of linear equations	
C101.3	Computation of probability and moments, standard distributions of discrete and continuous random variables and functions of a random variable	
C101.4	Could develop a fundamental understanding of linear programming models, able to develop a linear programming model from problem description, apply the simplex method for solving linear programming problems	
C101.5	Fourier series analysis and its uses in representing the power signals	

Sem : 1	Sub Code & Name :	20PPE101 Power Semiconductor Devices
CO No	Course Outcome	
C102.1	Explain the basic principle and operation of Diode	
C102.2	Describe the principle and operation of current controlled transistors	
C102.3	Demonstrate the principle and operation of voltage controlled devices	
C102.4	Design and analyze firing and control circuit	
C102.5	Comprehend various thermal protection device	

Sem : 1	Sub Code & Name :	20PPE102 Analysis of Electrical Machines
CO No	Course Outcome	
C103.1	Summarize the various electrical parameters in mathematical form.	
C103.2	Analyze the dynamic characteristics of DC machines and also determine their voltage and Torque equation	
C103.3	Compare the different types of reference frame theories and transformation relationships.	
C103.4	Model and Analyze the performance of Induction machines	
C103.5	Examine the basic concepts of Synchronous Machines, equivalent circuit parameters and its modeling	

Sem : 1	Sub Code & Name :	20PPE103 Analysis and Design of Power Converters
CO No	Course Outcome	
C104.1	Design and analyze various single phase and three phase power converters	
C104.2	Select and design dc-dc converter topologies for a broad range of power conversion applications	
C104.3	Develop improved power converters for any stringent application requirements	
C104.4	Analyze and design resonant converters	
C104.5	Examine the functions of various ac-ac converters	

Sem : 1	Sub Code & Name :	20PPEE01 Soft Computing Techniques
CO No	Course Outcome	
C105.1	To know the basic ANN architectures, algorithms and their limitations	
C105.2	Able to know the different operations on the fuzzy sets	
C105.3	Expertise in the use of different ANN structures and online training algorithm.	
C105.4	Knowledgeable to use Fuzzy logic for modeling and control of non linear systems.	
C105.5	Competent to use hybrid control schemes and P.S.O and support vector Regressive.	

Sem : 1	Sub Code & Name :	20PPEE12 Flexible AC Transmission Systems
CO No	Course Outcome	
C106.1	Analyze the operation of the compensator	
C106.2	Analyze the various emerging Facts controllers	
C106.3	To know about the genetic algorithm	
C106.4	Facts its applications in power system	
C106.5	Facts controller coordination	

Sem : 1	Sub Code & Name :	20PPE104 Power Electronics Circuits Laboratory
CO No	Course Outcome	
C107.1	Comprehensive understanding on the switching behavior of Power Electronic Switches Environments	
C107.2	Comprehensive understanding on mathematical modeling of power electronic system and ability to implement the same using simulation tools	
C107.3	Ability of the student to use microcontroller and its associated IDE* for power electronic application	
C107.4	Ability of the student to design and implement analog circuits for Power electronic control application	
C107.5	Ability to design and fabricate a power converter circuit at an reasonable power level	

Sem : 2	Sub Code & Name :	20PPE201 Analysis and Design of Inverters
CO No	Course Outcome	
C108.1	Get expertise in the working modes and operation of inverter	
C108.2	Design single phase and three phase inverter	
C108.3	Formulate and design the inverters for generic loads and machine loads	
C108.4	Multilevel inverters and modulation techniques	
C108.5	Analyze the various concept of inverter topology	

Sem : 2	Sub Code & Name :	20PPE202 Solid State Drives
CO No	Course Outcome	
C109.1	Analyze the performance of DC Motors using various converter control	
C109.2	Explain and calculate the performance of chopper controlled DC Drives in different quadrant.	
C109.3	Apply the stator and rotor controlled techniques in Induction motor Drives	
C109.4	Explain the performance of AC drives with Field Oriented Control and Direct Torque Control	
C109.5	Formulate the control schemes for synchronous motor drives	

Sem : 2	Sub Code & Name :	20PPE203 Special Electrical Machines
CO No	Course Outcome	
C110.1	Analyze theoretically, the performance characteristics of PMBLDC	
C110.2	Infer the knowledge on construction and operation of permanent magnet synchronous motor	
C110.3	Examine the function of Switched reluctance motor	
C110.4	Construct the principle and operation of stepper motor	
C110.5	Ability to select a special Machine for a particular application	

Sem : 2	Sub Code & Name :	20PPE204 Electric Vehicles And Power Management
CO No	Course Outcome	
C111.1	Explain the basics of electric and hybrid electric vehicles and fundamentals	
C111.2	Construct the architecture of EV and hybrid electric vehicles	
C111.3	Analyze various electric drives suitable for electric vehicles	
C111.4	Discuss different energy storage technologies used for electric vehicles and their control	
C111.5	Generalize the characteristics of alternative energy storage systems	

Sem : 2	Sub Code & Name :	20PPEE21 Modern Rectifiers and Resonant Converters
CO No	Course Outcome	
C112.1	To concept of various types of rectifiers	
C112.2	Simulate and design the operation of resonant converter and its importance	
C112.3	Identify the importance of linear system, state space model, PI controller	
C112.4	Design the DC power supplies using advanced techniques	
C112.5	Analyze the standards for supply current harmonics and its significance	

Sem : 2	Sub Code & Name :	20PPEE31 High Voltage Direct Current Transmission
CO No	Course Outcome	
C113.1	Analyze the synthesis, power transmission	
C113.2	Apply different high performance control system	
C113.3	Design multiple terminals and testing	
C113.4	Design the Power flow analysis	
C113.5	Discuss the design HVDC	

Sem : 2	Sub Code & Name :	20PPE205 Electrical Drives Laboratory
CO No	Course Outcome	
C114.1	To learn about electrical drives system	
C114.2	Ability to simulate different types of machines in a system	
C114.3	Ability to simulate different types of converters in a system	
C114.4	Analyze the performance of various electric drive systems	
C114.5	Ability to perform both hardware and software simulation	

Sem : 3	Sub Code & Name :	20PTE301 RESEARCH METHODOLOGY AND IPR
CO No	Course Outcome	
C201.1	Formulate researchable questions	
C201.2	Define a research strategy and design a research project	
C201.3	Practice the principles of qualitative and quantitative social research	
C201.4	Present complex data or situations clearly	
C201.5	Learn about the different research techniques and research report.	

Sem : 3	Sub Code & Name :	20PPEE302-POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS
CO No	Course Outcome	
C202.1	Enumerate the impacts of renewable energy generation on environment	
C202.2	The late predict importance and qualitative analysis of solar energy sources	
C202.3	The importance and qualitative analysis of WES	
C202.4	Prioritize the performance of electrical machines for WEC	
C202.5	Contract suitable power converters for solar PV and WES	

Sem : 3	Sub Code & Name :	20PPEE41-WIND ENERGY CONVERSION SYSTEMS
CO No	Course Outcome	
C203.1	Recall acquire knowledge on basic concepts of WECS	
C203.2	Contrast the predict importance and qualitative analysis of solar energy systems	
C203.3	Compare the predict importance and qualitative analysis of solar energy systems	
C203.4	Prioritize the performance of electrical machines for WECS	
C203.5	Contract suitable power converters for solar PV and WECS	

Sem : 3	Sub Code & Name :	2PPE303 - PROJECT WORK PHASE - I
CO No	Course Outcome	
C204.1	Formulate a real world problem and develop its requirements	
C204.2	Develop a design solution for a set of requirements	
C204.3	Test and validate the conformance of the developed software against the original requirements of the problem	
C204.4	Work effectively with peers to pursue a goal	
C204.5	Take up any challenging practical problems and find solution by formulating proper methodology	

Sem : 4	Sub Code & Name :	20PPE401 - PROJECT WORK PHASE - II
CO No	Course Outcome	
C205.1	Formulate a real world problem and develop its requirements	
C205.2	Develop a design solution for a set of requirements	
C205.3	Test and validate the conformance of the developed software against the original requirements of the problem	
C205.4	Work effectively with peers to pursue a goal	
C205.5	Take up any challenging practical problems and find solution by formulating proper methodology	



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COURSE CODE/COURSE NAME	CO 1	CO2	CO3	CO4	CO5	CO AVERAGE
SEMESTER III						
20PTE301 RESEARCH METHODOLOGY AND IPR	3.00	3.00	3.00	3.00	3.00	3.00
20PPEE302-POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS	3.00	3.00	3.00	3.00	3.00	3.00
20PPEE41-WIND ENERGY CONVERSION SYSTEMS	3.00	3.00	3.00	3.00	3.00	3.00
20PPE303 - PROJECT WORK PHASE - I	3.00	3.00	3.00	3.00	3.00	3.00
SEMESTER IV						
20PPE401 - PROJECT WORK PHASE - II	3.00	3.00	3.00	3.00	3.00	3.00


Academic coordinator

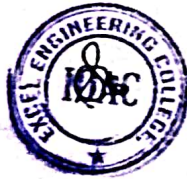



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"OmaraBálayam-63730" Namakkal (Dt.), Tamilnadu.

COURSE CODE	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	PSO 3
SEMESTER IV															
C205	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
DIRECT ATTAINMENT (100%)	3.00	3.00	2.84	2.83	2.56	3.00	2.67	2.80	2.50	2.00	1.53	1.95	2.95	1.50	2.06
DIRECT ATTAINMENT (80%)	2.40	2.40	2.27	2.27	2.04	2.40	2.13	2.24	2.00	1.60	1.22	1.56	2.36	1.20	1.64
INDIRECT ATTAINMENT (100%)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
INDIRECT ATTAINMENT (20%)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
TOTAL ATTAINMENT (100%)	3.00	3.00	2.87	2.87	2.64	3.00	2.73	2.84	2.60	2.20	1.82	2.16	2.96	1.80	2.24

K. S. S. S.
Academic coordinator



H. J.
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COURSE CODE	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	PSO 3
SEMESTER IV															
C205	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
DIRECT ATTAINMENT (100%)	3.00	3.00	2.76	2.56	2.56	3.00	2.67	2.80	2.50	2.00	1.53	1.95	2.95	1.50	2.06
DIRECT ATTAINMENT (80%)	2.40	2.40	2.21	2.05	2.04	2.40	2.13	2.24	2.00	1.60	1.22	1.56	2.36	1.20	1.64
INDIRECT ATTAINMENT (100%)	2.82	2.68	2.69	2.70	2.64	2.66	2.66	2.66	2.68	2.62	2.71	2.66	2.65	2.58	2.64
INDIRECT ATTAINMENT (20%)	0.56	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.54	0.52	0.54	0.53	0.53	0.52	0.53
TOTAL ATTAINMENT (100%)	2.96	2.94	2.75	2.59	2.57	2.93	2.67	2.77	2.54	2.12	1.77	2.09	2.89	1.72	2.17

[Signature]
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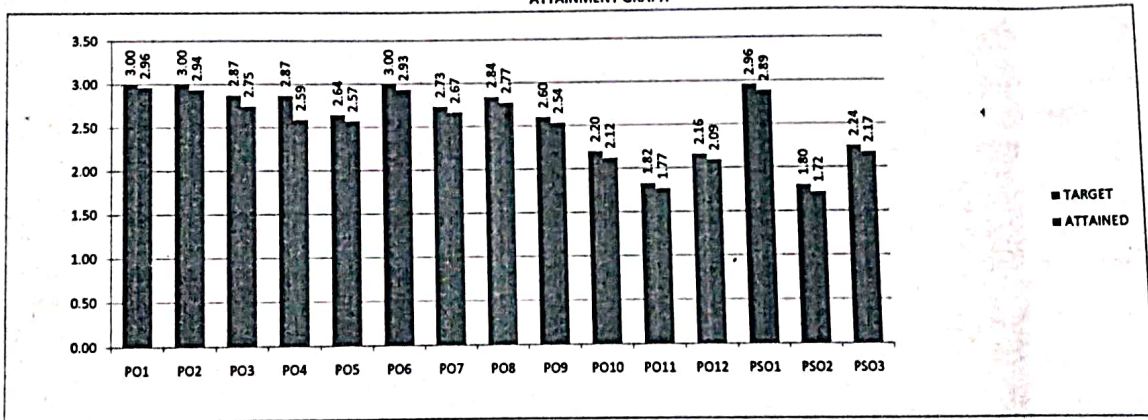


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 KOMARAPALAYAM - 637303
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
M E - POWER ELECTRONICS AND DRIVES
2021-23 BATCH
TARGET AND ATTAINMENT (2021-23 BATCH)

PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
TARGET	3.00	3.00	2.87	2.87	2.64	3.00	2.73	2.84	2.60	2.20	1.82	2.16	2.96	1.80	2.24
ATTAINED	2.96	2.94	2.75	2.59	2.57	2.93	2.67	2.77	2.54	2.12	1.77	2.09	2.89	1.72	2.17

GRAPH-2021-2023

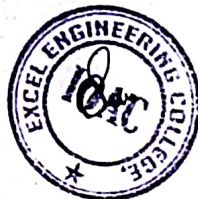
ATTAINMENT GRAPH




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INDIRECT ATTINMENT MEASURES															
Attainment measures	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Student exit survey	2.80	2.62	2.71	2.59	2.57	2.63	2.54	2.64	2.63	2.63	2.59	2.69	2.76	2.63	2.64
Parent feedback survey	2.75	2.65	2.62	2.62	2.56	2.59	2.54	2.70	2.70	2.62	2.70	2.65	2.81	2.65	2.62
Alumni survey	2.81	2.58	2.56	2.61	2.61	2.66	2.64	2.53	2.63	2.53	2.69	2.58	2.68	2.59	2.61
Employer survey	2.78	2.70	2.63	2.70	2.63	2.78	2.70	2.78	2.70	2.63	2.70	2.63	2.70	2.55	2.78
Co-curricular, Extra-curricular	2.90	2.80	2.80	2.80	2.90	2.70	2.80	2.90	2.90	2.90	2.90	2.70	2.60	2.50	2.50
Placement training and value added course	2.80	2.90	2.70	2.90	2.70	2.50	2.50	2.60	2.70	2.50	2.90	2.90	2.50	2.50	2.40
Industrial Visit and In plant training	2.90	2.50	2.80	2.70	2.50	2.80	2.90	2.50	2.50	2.50	2.50	2.50	2.50	2.63	2.90
Indirect Attainment	2.82	2.68	2.69	2.70	2.64	2.66	2.66	2.66	2.68	2.62	2.71	2.66	2.65	2.58	2.64
20% of Indirect attainment	0.56	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.54	0.52	0.54	0.53	0.53	0.52	0.53
DIRECT ATTINMENT MEASURES															
Attainment measures	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct attainment	3.00	3.00	2.84	2.83	2.56	3.00	2.67	2.80	2.50	2.00	1.53	1.95	2.95	1.50	2.06
Indirect Attainment	2.40	2.40	2.27	2.27	2.04	2.40	2.13	2.24	2.00	1.60	1.22	1.56	2.36	1.20	1.64
Direct attainment 80%(A)	2.82	2.68	2.69	2.70	2.64	2.66	2.66	2.66	2.68	2.62	2.71	2.66	2.65	2.58	2.64
Indirect attainment 20%(B)	0.56	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.54	0.52	0.54	0.53	0.53	0.52	0.53
Overall attainment	2.96	2.94	2.81	2.81	2.57	2.93	2.67	2.77	2.54	2.12	1.77	2.09	2.89	1.72	2.17




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