



Indra Ganesan

COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION – 2

TEACHING-LEARNING AND EVALUATION

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

INDRA GANESAN COLLEGE OF ENGINEERING



Criteria 2	Teaching-Learning and Evaluation	350
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Key Indicator-2.6 Student Performances and Learning Outcome (90)

2.6.1 Programme Outcomes (POs) and Course Outcomes (COs) for all programmes offered by the institution are stated and displayed on website

**DEPARTMENT OF ELECTRICAL & ELECTRONICS
ENGINEERING R2017**

INDRA GANESAN COLLEGE OF ENGINEERING

IG Valley, Manikandam, Tiruchirappalli, Tamil Nadu – 620 012, India
(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REGULATION -2017

COURSE OUTCOMES

SEM –II

E105- EE8251 Circuit Theory

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E105.1	Ability to analyze electrical circuits	1,2,3,4,6,10,11,12	1,2
E105.2	Ability to apply circuit theorems	1,2,3,4,6,10,11,12	1,2
E105.3	Ability to analyze transients circuits	1,2,3,4,6,10,11,12	1,2
E105.4	Analyze Phasor diagrams and analysis of three phase circuits	1,2,3,4,6,10,11,12	1,2
E105.5	Acquire the knowledge Power measurement in three phase circuits.	1,2,3,4,6,10,11,12	1,2
E105.6	Analyze Quality factor and Bandwidth	1,2,3,4,6,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E105.1	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E105.2	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E105.3	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E105.4	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E105.5	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E105.6	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E105	3	3	2	2	-	2	-	-	-	2	1	1	2	2

E108- EE8261 Electric Circuits Laboratory

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E108.1	Apply circuit theorems and concepts in engineering applications	1,2,3,4,6,10,11,12	1,2
E108.2	Simulate electric circuits	1,2,3,4,6,10,11,12	1,2
E108.3	Design and Simulation of series resonance circuit	1,2,3,4,6,10,11,12	1,2
E108.4	Design and Simulation of parallel resonant circuits	1,2,3,4,6,10,11,12	1,2
E108.5	Simulation and experimental verification of electrical circuit problems using Superposition theorem.	1,2,3,4,6,10,11,12	1,2
E108.6	Simulation and Experimental validation of R-C electric circuit transients	1,2,3,4,6,10,11,12	1,2

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Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E108.1	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E108.2	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E108.3	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E108.4	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E108.5	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E108.6	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E108	3	3	2	2	-	2	-	-	-	2	1	1	2	2

SEM-III

E202- EE8351 DIGITAL LOGIC CIRCUITS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E202.1	Explain the concepts combinational and sequential Circuits	1,2,3,4,6,10,11,12	1,2
E202.2	Determine Shear force and bending moment in beams and understand concept of theory of simple bending.	1,2,3,4,6,10,11,12	1,2
E202.3	Calculate various number systems and simplify the logical expressions using Boolean functions	1,2,3,4,6,10,11,12	1,2
E202.4	Apply basic various synchronous and asynchronous circuits.	1,2,3,4,6,10,11,12	1,2
E202.5	Analyze sequential circuits and PLDs	1,2,3,4,6,10,11,12	1,2
E202.6	Digital simulation for development of application oriented logic circuits.	1,2,3,4,6,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E202.1	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E202.2	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E202.3	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E202.4	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E202.5	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E202.6	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E202	3	3	2	2	-	2	-	-	-	2	1	1	2	2



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E203- EE8391 ELECTROMAGNETIC THEORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E203.1	Discuss a basic knowledge the basic mathematical concepts related to electromagnetic vectorfields.	1,2,3,4,9,10,11,12	1,2
E203.2	Explain the basic concepts about electrostatic fields, electrical potential, energy density and their applications	1,2,3,4,6,9,10,11,12	1,2
E203.3	acquire the knowledge in magneto static fields, magnetic flux density, vectorpotential and its applications	1,2,3,4,6,7,9,10,11,12	1,2
E203.4	Describe types the different methods of emf generation and Maxwell's equations.	1,2,3,4,6,10,11,12	1,2
E203.5	the basic concepts electromagnetic waves and characterizing parameters	1,2,3,4,10,11,12	1,2
E203.6	Summarize knowledge on properties and behavior of fluids.	1,2,3,4,10,11,12	1,2


Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E203.1	3	3	2	2	-	-	-	-	1	2	1	1	2	2
E203.2	3	3	2	2	-	1	-	-	1	2	1	1	2	2
E203.3	3	3	2	2	-	1	1	-	1	2	1	1	2	2
E203.4	3	3	2	2	-	1	-	-	-	2	1	1	2	2
E203.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E203.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E203	3	3	2	2	-	1	1	-	1	2	1	1	2	2

E204 - EE 8301 ELECTRICAL MACHINES – I

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E204.1	to analyze the magnetic-circuits	1,2,3,4,5,10,11,12	1,2
E204.2	to acquire the knowledge in constructional details of transformers	1,2,3,4,5,10,11,12	1,2
E204.3	Identify the concepts of electromechanical energy conversion	1,2,3,4,5,10,11,12	1,2
E204.4	acquire the knowledge in working principles of DC Generator	1,2,3,4,5,10,11,12	1,2
E204.5	Acquire the knowledge in working principles of DC Motor	1,2,3,4,5,10,11,12	1,2
E204.6	to acquire the knowledge in various losses taking place in D.C. Machines	1,2,3,4,5,10,11,12	1,2


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Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E204.1	3	3	2	2	2	-	-	-	-	2	1	1	2	2
E204.2	3	3	2	2	2	-	-	-	-	2	1	1	2	2
E204.3	3	3	2	2	2	-	-	-	-	2	1	1	2	2
E204.4	3	3	2	2	2	-	-	-	-	2	1	1	2	2
E204.5	3	3	2	2	2	-	-	-	-	2	1	1	2	2
E204.6	3	3	2	2	2	-	-	-	-	2	1	1	2	2
E204	3	3	2	2	2	-	-	-	-	2	1	1	2	2

E208- EE8311 ELECTRICAL MACHINES LABORATORY-I

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E208.1	Experiment practical knowledge on DC Generator	1,2,3,4,8,9,11,12	1,2
E208.2	.Analyze types of DC Generator	1,2,3,4,8,9,11,12	1,2
E208.3	Demonstrate practical knowledge generators	1,2,3,4,8,9,11,12	1,2
E208.4	Experiment practical knowledge on DC Motors	1,2,3,4,8,9,11,12	1,2
E208.5	Experiment practical knowledge on DC Transformers	1,2,3,4,8,9,11,12	1,2
E208.6	Demonstrate practical knowledge generators & Transformers	1,2,3,4,8,9,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E208.1	3	3	2	2	-	-	-	3	3	-	1	1	2	2
E208.2	3	3	2	2	-	-	-	3	3	-	1	1	2	2
E208.3	3	3	2	2	-	-	-	3	3	-	1	1	2	2
E208.4	3	3	2	2	-	-	-	3	3	-	1	1	2	2
E208.5	3	3	2	2	-	-	-	3	3	-	1	1	2	2
E208.6	3	3	2	2	-	-	-	3	3	-	1	1	2	2
E208	3	3	2	2	-	-	-	3	3	-	1	1	2	2



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SEM- IV

E210 - EE8401 ELECTRICAL MACHINES – II

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E210.1	Explain the construction and working principle of synchronousGenerator	1,2,3,4,6,10,11,12	1,2
E210.2	MMF curves and armature windings.	1,2,3,4,6,10,11,12	1,2
E210.3	Acquire knowledge on Synchronous motor.	1,2,3,4,6,10,11,12	1,2
E210.4	Explain the construction and working principle of Three phase InductionMotor	1,2,3,4,6,10,11,12	1,2
E21.5	Explain the construction and working principle of special machines	1,2,3,4,6,10,11,12	1,2
E210.6	Ability to predetermine the performance characteristics of Synchronous Machines	1,2,3,4,6,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E210.1	3	3	2	2	-	1	-	-	-	1	1	2	2	2
E210.2	3	3	2	2	-	1	-	-	-	1	1	2	2	2
E210.3	3	3	2	2	-	1	-	-	-	1	1	2	2	2
E210.4	3	3	2	2	-	1	-	-	-	1	1	2	2	2
E210.5	3	3	2	2	-	1	-	-	-	1	1	2	2	2
E210.6	3	3	2	2	-	1	-	-	-	1	1	2	2	2
E210	3	3	2	2	-	1	-	-	-	1	1	2	2	2

E211 - EE8402 TRANSMISSION AND DISTRIBUTION

After t he course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E211.1	Determine the importance and the functioning of transmission line parameters	1,2,3,4,6,10,11,12	1,2
E211.2	Analyze the concepts of Lines and Insulators.	1,2,3,4,6,10,11,12	1,2
E211.3	To acquire knowledge on the performance of Transmission lines	1,2,3,4,6,10,11,12	1,2
E211.4	To acquire the importance of distribution of the electric power in power system	1,2,3,4,6,10,11,12	1,2
E211.5	To Perceive knowledge on Underground Cabilities	1,2,3,4,6,10,11,12	1,2

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E211.6	To become familiar with the function of different components used in Transmission and Distribution levels of power system and modeling of these components.	1,2,3,4,6,10,11,12	1,2
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Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E211.1	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E211.2	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E211.3	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E211.4	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E211.5	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E211.6	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E211	3	3	2	2	-	2	-	-	-	2	1	1	2	2


E212 - EE 8403 MEASUREMENTS AND INSTRUMENTATION

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E212.1	To acquire knowledge on Basic functional elements of instrumentation	1,2,3,4,6,9,10,11,12	1,2
E212.2	Identify the concepts of Fundamentals of electrical and electronic instruments	1,2,3,4,6,10,11,12	1,2
E212.3	Ability to compare between various measurement techniques	1,2,3,4,10,11,12	1,2
E212.4	To acquire knowledge on Various storage and display devices	1,2,3,4,10,11,12	1,2
E212.5	Explain the understand the concepts Various transducers and the data acquisition systems	1,2,3,4,6,10,11,12	1,2
E212.6	Ability to model and analyze electrical and electronic Instruments and understand the operational features of display Devices and Data Acquisition System.	1,2,3,4,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E212.1	3	3	2	2	-	2	-	-	2	2	1	1	2	2
E212.2	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E212.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E212.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E212.5	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E212.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E212	3	3	2	2	-	2	-	-	-	2	1	1	2	2


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E213 - EE8451 LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E213.1	Ability to acquire knowledge in IC fabrication procedure	1,2,3,4,10,11,12	1,2
E213.2	Illustrate the effect to analyze the characteristics of Op-Amp	1,2,3,4,10,11,12	1,2
E213.3	Perceive the importance of Signal analysis using Op-amp based circuits	1,2,3,4,10,11,12	1,2
E213.4	Classify Functional blocks and the applications of special ICs like Timers, PLL circuits, regulator Circuits	1,2,3,4,10,11,12	1,2
E213.5	Ability acquire knowledge on the Applications of Op-amp	1,2,3,4,10,11,12	1,2
E213.6	Analyse, linear integrated circuits their Fabrication and Application.	1,2,3,4,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E213.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E213.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E213.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E213.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E213.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E213.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E213	3	3	2	2	-	-	-	-	-	2	1	1	2	2

E214 - IC8451 CONTROL SYSTEMS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E214.1	Ability to develop various representations of system based on the knowledge of Mathematics, Science and Engineering fundamentals	1,2,3,4,10,11,12	1,2
E214.2	Ability to do time domain and frequency domain analysis of various models of linear system.	1,2,3,4,10,11,12	1,2
E214.3	Ability to interpret characteristics of the system to develop mathematical model.	1,2,3,4,10,11,12	1,2
E214.4	Ability to design appropriate compensator for the given specifications	1,2,3,4,6,10,11,12	1,2
E214.5	Ability to come out with solution for complex control problem	1,2,3,4,6,8,10,11,12	1,2
E214.6	Ability to understand use of PID controller in closed loop system.	1,2,3,4,6,8,10,11,12	1,2



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Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E214.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E214.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E214.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E214.4	3	3	2	2	-	2	-	-	-	2	1	1	2	2
E214.5	3	3	2	2	-	2	-	2	-	2	1	1	2	2
E214.6	3	3	2	2	-	2	-	2	-	2	1	1	2	2
E214	3	3	2	2	-	2	-	2	-	2	1	1	2	2

E215 -EE8411 ELECTRICAL MACHINES LABORATORY - II

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E215.1	Ability to understand and analyze EMF and MMF methods	1,2,3,4,6,8,9,10,12	1,2
E215.2	Ability to analyze the characteristics of V and Inverted V curves	1,2,3,4,6,8,9,10,12	1,2
E215.3	Ability to understand the importance of Synchronous machines	1,2,3,4,6,8,9,10,12	1,2
E215.4	Ability to understand the importance of Induction Machine	1,2,3,4,6,8,9,10,12	1,2
E215.5	Ability to acquire knowledge on separation of losses	1,2,3,4,6,8,9,10,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E215.1	3	2	2	2	-	2	-	2	2	2		1	2	2
E215.2	3	2	2	2	-	2	-	2	2	2		1	2	2
E215.3	3	2	2	2	-	2	-	2	2	2		1	2	2
E215.4	3	2	2	2	-	2	-	2	2	2		1	2	2
E215.5	3	2	2	2	-	2	-	2	2	2		1	2	2
E215	3	2	2	2	-	2	-	2	2	2		1	2	2

SEM-V

E301- EE8501 POWER SYSTEM ANALYSIS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E301.1	Ability to model the power system under steady state operating condition	1,2,3,4,8,10,11,12	1,2
E301.2	Apply iterative techniques for power flow analysis	1,2,3,4,8,10,11,12	1,2
E301.3	Ability to model and carry out short circuit studies on power system	1,2,3,4,8,10,11,12	1,2
E301.4	Ability to model and analyze stability problems in power system	1,2,3,4,8,10,11,12	1,2
E301.5	Ability to acquire knowledge on Fault analysis	1,2,3,4,8,10,11,12	1,2
E301.6	Ability to model and understand various power system components and carry out power flow, short circuit and stability studies	1,2,3,4,8,10,11,12	1,2

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Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E301.1	3	3	2	2	-	-	-	2	-	2	1	1	2	2
E301.2	3	3	2	2	-	-	-	2	-	2	1	1	2	2
E301.3	3	3	2	2	-	-	-	2	-	2	1	1	2	2
E301.4	3	3	2	2	-	-	-	2	-	2	1	1	2	2
E301.5	3	3	2	2	-	-	-	2	-	2	1	1	2	2
E301.6	3	3	2	2	-	-	-	2	-	2	1	1	2	2
E301	3	3	2	2	-	-	-	2	-	2	1	1	2	2

E302-EE8551 MICROPROCESSORS AND MICROCONTROLLERS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E302.1	Ability to acquire knowledge in Addressing modes & instruction set of 8085 & 8051.	1,2,3,4,10,11,12	1,2
E302.2	Ability to need & use of Interrupt structure 8085 & 8051	1,2,3,4,10,11,12	1,2
E302.3	Ability to understand the importance of Interfacing	1,2,3,4,10,11,12	1,2
E302.4	Ability to explain the architecture of Microprocessor and Microcontroller.	1,2,3,4,10,11,12	1,2
E302.5	Ability to write the assembly language programme	1,2,3,4,10,11,12	1,2
E302.6	Ability to develop the Microprocessor and Microcontroller based applications	1,2,3,4,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E302.1	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E302.2	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E302.3	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E302.4	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E302.5	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E302.6	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E302	3	3	2	2	-	-	-	-	-	2	1	2	2	2

E303 - EE8552 POWER ELECTRONICS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E303.1	Ability to analyse AC-AC AC converters	1,2,3,4,6,7,10,11,12	1,2
E303.2	Ability to analyse DC-DC converters	1,2,3,4,6,7,10,11,12	1,2
E303.3	Ability to analyse DC-AC converters	1,2,3,4,6,7,10,11,12	1,2
E303.4	Ability to choose the converters for real time applications	1,2,3,4,6,7,10,11,12	1,2
E303.5	Ability to analyse Chopper circuits	1,2,3,4,6,7,10,11,12	1,2

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E303.6	Ability to analyse Inverters circuits	1,2,3,4,6,7,10,11,12	1,2
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Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E303.1	3	3	2	2	-	3	2	-	-	3	1	1	2	2
E303.2	3	3	2	2	-	3	2	-	-	3	1	1	2	2
E303.3	3	3	2	2	-	3	2	-	-	3	1	1	2	2
E303.4	3	3	2	2	-	3	2	-	-	3	1	1	2	2
E303.5	3	3	2	2	-	3	2	-	-	3	1	1	2	2
E303.6	3	3	2	2	-	3	2	-	-	3	1	1	2	2
E303	3	3	2	2	-	3	2	-	-	3	1	1	2	2

E304-EE8591 DIGITAL SIGNAL PROCESSING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E304.1	Ability to understand the importance of Fourier transform, digital filters and DSPProcessors	1,2,3,4,9,10,11,12	1,2
E304.2	Ability to acquire knowledge on Signals and systems & their mathematical representation	1,2,3,4,9,10,11,12	1,2
E304.3	Ability to understand and analyze the discrete time systems	1,2,3,4,9,10,11,12	1,2
E304.4	Ability to analyze the transformation techniques & their computation	1,2,3,4,6,8,9,10,11,12	1,2
E304.5	Ability to understand the types of filters and their design for digital implementation	1,2,3,4,6,8,9,10,11,12	1,2
E304.6	Ability to acquire knowledge on programmability digital signal processor & quantizationeffects	1,2,3,4,9,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E304.1	3	3	2	2	-	-	-	-	3	2	1	1	2	2
E304.2	3	3	2	2	-	-	-	-	3	2	1	1	2	2
E304.3	3	3	2	2	-	-	-	-	3	2	1	1	2	2
E304.4	3	3	2	2	-	3	-	2	3	2	1	1	2	2
E304.5	3	3	2	2	-	3	-	2	3	2	1	1	2	2
E304.6	3	3	2	2	-	-	-	-	3	2	1	1	2	2
E304	3	3	2	2	-	3	-	2	3	2	1	1	2	2


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E307 - EE8511 CONTROL AND INSTRUMENTATION LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E307.1	Ability to understand control theory and apply them to electrical engineering problems	1,2,3,4,5,6,8,9,10,11,12	1,2
E307.2	Ability to analyze the various types of converters	1,2,3,4,5,6,8,9,10,11,12	1,2
E307.3	Ability to design compensators	1,2,3,4,5,6,8,9,10,11,12	1,2
E307.4	Ability to understand the basic concepts of bridge networks	1,2,3,4,5,6,8,9,10,11,12	1,2
E307.5	Ability to the basics of signal conditioning circuits	1,2,3,4,5,6,8,9,10,11,12	1,2
E307.6	Ability to study the simulation packages	1,2,3,4,5,6,8,9,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C307.1	3	3	2	2	3	3	-	2	3	2	1	2	2	2
C307.2	3	3	2	2	3	3	-	2	3	2	1	2	2	2
C307.3	3	3	2	2	3	3	-	2	3	2	1	2	2	2
C307.4	3	3	2	2	3	3	-	2	3	2	1	2	2	2
C307.5	3	3	2	2	3	3	-	2	3	2	1	2	2	2
C307.6	3	3	2	2	3	3	-	2	3	2	1	2	2	2
C307	3	3	2	2	3	3	-	2	3	2	1	2	2	2

SEM VI

E310 - EE8601 SOLID STATE DRIVES

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E310.1	Ability to suggest a converter for solid state drive	1,2,3,4,10,11,12	1,2
E310.2	Ability to select suitability drive for the given application	1,2,3,4,10,11,12	1,2
E.310.3	Ability to study about the steady state operation and transient dynamics of a motor loadsystem.	1,2,3,4,10,11,12	1,2
E310.4	Ability to analyze the operation of the converter/chopper fed dc drive	1,2,3,4,10,11,12	1,2
E310.5	Ability to analyze the operation and performance of AC motor drives	1,2,3,4,10,11,12	1,2
E310.6	Ability to analyze and design the current and speed controllers for a closed loop solid stateDC motor drive	1,2,3,4,10,11,12	1,2

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Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E310.1	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E310.2	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E.310.3	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E310.4	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E310.5	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E310.6	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E310	3	3	2	2	-	-	-	-	-	2	1	2	2	2

E311 - EE8602 PROTECTION AND SWITCHGEAR

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E311.1	Ability to analyze Electromagnetic and Static Relays	1,2,3,4,10,11,12	1,2
E311.2	Ability to suggest suitability circuit breaker	1,2,3,4,10,11,12	1,2
E311.3	Ability to find the causes of abnormal operating conditions of the apparatus and system	1,2,3,4,10,11,12	1,2
E311.4	Ability to analyze the characteristics and functions of relays and protection schemes	1,2,3,4,10,11,12	1,2
E311.5	Ability to study about the apparatus protection, static and numerical relays	1,2,3,4,10,11,12	1,2
E311.6	Ability to acquire knowledge on functioning of circuit breaker.	1,2,3,4,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E311.1	3	3	3	2	-	-	-	-	-	2	1	2	2	2
E311.2	3	3	3	2	-	-	-	-	-	2	1	2	2	2
E311.3	3	3	3	2	-	-	-	-	-	2	1	2	2	2
E311.4	3	3	3	2	-	-	-	-	-	2	1	2	2	2
E311.5	3	3	3	2	-	-	-	-	-	2	1	2	2	2
E311.6	3	3	3	2	-	-	-	-	-	2	1	2	2	2
E311	3	3	3	2	-	-	-	-	-	2	1	2	2	2

E312 - EE8691 EMBEDDED SYSTEMS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E312.1	Ability to analyze Embedded systems.	1,2,3,4,6,7,10,11,12	1,2
E312.2	Ability to suggest an embedded system for a given application	1,2,3,4,6,7,10,11,12	1,2
E312.3	Ability to operate various Embedded Development Strategies	1,2,3,4,6,7,10,11,12	1,2
E312.4	Ability to study about the bus Communication in processors	1,2,3,4,6,7,10,11,12	1,2
E312.5	Ability to acquire knowledge on various processor scheduling algorithms	1,2,3,4,6,7,10,11,12	1,2
E312.6	Ability to understand basics of Real time operating system.	1,2,3,4,6,7,10,11,12	1,2

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Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E312.1	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.2	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.3	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.4	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.5	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.6	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312	3	3	2	2	-	2	2	-	-	2	1	2	2	2


E313 –EE8002 Design of Electrical Apparatus

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E312.1	Ability to design basics of design considerations for rotating and static electrical machines	1,2,3,4,6,7,10,11,12	1,2
E312.2	Ability to design of field system for its application	1,2,3,4,6,7,10,11,12	1,2
E312.3	Ability to design and three phase transformer	1,2,3,4,6,7,10,11,12	1,2
E312.4	Ability to design armature and field of DC machines	1,2,3,4,6,7,10,11,12	1,2
E312.5	Ability to design stator and rotor of induction motor	1,2,3,4,6,7,10,11,12	1,2
E312.6	Ability to design and analyze synchronous machines	1,2,3,4,6,7,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E313.1	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E313.2	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E313.3	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E313.4	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E313.5	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E313.6	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E313	3	3	2	2	-	2	2	-	-	2	1	2	2	2


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E314 - EE8005 Special Electrical Machines

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E312.1	Ability to analyze and design controllers for special Electrical Machines	1,2,3,4,6,7,10,11,12	1,2
E312.2	Ability to acquire the knowledge on construction and operation of stepper motor	1,2,3,4,6,7,10,11,12	1,2
E312.3	Ability to acquire the knowledge on construction and operation of stepper switched reluctance motors.	1,2,3,4,6,7,10,11,12	1,2
E312.4	Ability to construction, principle of operation, switched reluctance motors	1,2,3,4,6,7,10,11,12	1,2
E312.5	Ability to acquire the knowledge on construction and operation of permanent magnet brushless D.C. motors	1,2,3,4,6,7,10,11,12	1,2
E312.6	Ability to select a special Machine for a particular application	1,2,3,4,6,7,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E312.1	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.2	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.3	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.4	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.5	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312.6	3	3	2	2	-	2	2	-	-	2	1	2	2	2
E312	3	3	2	2	-	2	2	-	-	2	1	2	2	2


E315 - EE8661 POWER ELECTRONICS AND DRIVES LABORATORY

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E315.1	Ability to practice converter and inverter circuits and apply software forengineering problems.	1,2,3,4,10,11,12	1,2
E315.2	Ability to experiment about switching characteristics various switches	1,2,3,4,10,11,12	1,2
E315.3	Ability to analyze about AC to DC converter circuits	1,2,3,4,10,11,12	1,2
E315.4	Ability to analyze about DC to AC circuits	1,2,3,4,10,11,12	1,2
E315.5	Ability to acquire knowledge on AC to AC converters	1,2,3,4,10,11,12	1,2
E315.6	Ability to acquire knowledge on simulation software.	1,2,3,4,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E315.1	3	3	2	2	-	-	-	-	-	2	1	2	2	2
E315.2	3	3	2	2	-	-	-	-	-	2	1	2	2	2


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E315.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E315.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E315.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E315.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E315	3	3	2	2	-	-	-	-	-	2	1	1	2	2

**E316 - EE8681 MICROPROCESSORS AND MICROCONTROLLERS
LABORATORY**

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E316.1	Apply computing platform and software for engineering problems	1,2,3,4,8,9,10,11,12	1,2
E316.2	Ability to programming logics for code conversion	1,2,3,4,8,9,10,11,12	1,2
E316.3	Ability to acquire knowledge on A/D and D/A.	1,2,3,4,8,9,10,11,12	1,2
E316.4	Ability to understand basics of serial communication	1,2,3,4,8,9,10,11,12	1,2
E316.5	Ability to understand and impart knowledge in DC and AC motor interfacing	1,2,3,4,8,9,10,11,12	1,2
E316.6	Ability to understand basics of software simulators	1,2,3,4,8,9,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E316.1	3	3	2	2	-	-	-	3	3	2	1	1	2	2
E316.2	3	3	2	2	-	-	-	3	3	2	1	1	2	2
E316.3	3	3	2	2	-	-	-	3	3	2	1	1	2	2
E316.4	3	3	2	2	-	-	-	3	3	2	1	1	2	2
E316.5	3	3	2	2	-	-	-	3	3	2	1	1	2	2
E316.6	3	3	2	2	-	-	-	3	3	2	1	1	2	2
C316	3	3	2	2	-	-	-	3	3	2	1	1	2	2

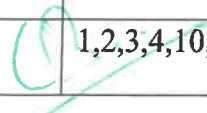
SEM-VII

E401 - EE8701 HIGH VOLTAGE ENGINEERING

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E401.1	Ability to perceive about Transients in power system	1,2,3,4,10,11,12	1,2
E401.2	Ability to perceive about Generation and measurement of high voltage	1,2,3,4,10,11,12	1,2
E401.3	Ability to perceive about High voltage testing	1,2,3,4,10,11,12	1,2
E401.4	Ability to perceive about various types of over voltages in power system	1,2,3,4,10,11,12	1,2
E401.5	Ability to measure over voltages	1,2,3,4,10,11,12	1,2
E401.6	Ability to test power apparatus and insulation coordination	1,2,3,4,10,11,12	1,2

Mapping of COs, C, PSOs with POs


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Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E401.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E401.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E401.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E401.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E401.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E401.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2
E401	3	3	2	2	-	-	-	-	-	2	1	1	2	2

E402 - EE8702 POWER SYSTEM OPERATION AND CONTROL

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E402.1	Ability to Perceive the day-to-day operation of electric power system	1,2,3,4,10,11,12	1,2
E402.2	Ability to analyze the control actions to be implemented on the system to meet the minute-to-minute variation of system demand.	1,2,3,4,10,11,12	1,2
E402.3	Ability to Perceive the significance of power system operation and control	1,2,3,4,10,11,12	1,2
E402.4	Ability to acquire knowledge on real power-frequency interaction	1,2,3,4,10,11,12	1,2
E402.5	Ability to Perceive the reactive power-voltage interaction	1,2,3,4,10,11,12	1,2
E402.6	Ability to design SCADA and its application for real time operation	1,2,3,4,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E402.1	3	3	2	1	-	-	-	-	-	1	1	1	2	2
E402.2	3	3	2	1	-	-	-	-	-	1	1	1	2	2
E402.3	3	3	2	1	-	-	-	-	-	1	1	1	2	2
E402.4	3	3	2	1	-	-	-	-	-	1	1	1	2	2
E402.5	3	3	2	1	-	-	-	-	-	1	1	1	2	2
E402.6	3	3	2	1	-	-	-	-	-	1	1	1	2	2
E402	3	3	2	1	-	-	-	-	-	1	1	1	2	2

E403 EE8703 RENEWABLE ENERGY SYSTEMS

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E403.1	Ability to create awareness about renewable Energy Sources and technologies	1,2,3,4,6,8,9,10,11,12	1,2
E403.2	Ability to get adequate inputs on a variety of issues in harnessing renewable Energy	1,2,3,4,6,8,9,10,11,12	1,2
E403.3	Ability to recognize current and possible future role of renewable energy sources	1,2,3,4,6,8,9,10,11,12	1,2
E403.4	Ability to explain the various renewable energy resources and technologies and their applications	1,2,3,4,6,8,9,10,11,12	1,2

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E403.5	Ability to Perceive the basics about biomass energy.	1,2,3,4,6,8,9,10,11,12	1,2
E403.6	Ability to acquire knowledge about solar energy	1,2,3,4,6,8,9,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E403.1	3	3	2	2	-	1	-	2	2	2	1	1	2	2
E403.2	3	3	2	2	-	1	-	2	2	2	1	1	2	2
E403.3	3	3	2	2	-	1	-	2	2	2	1	1	2	2
E403.4	3	3	2	2	-	1	-	2	2	2	1	1	2	2
E403.5	3	3	2	2	-	1	-	2	2	2	1	1	2	2
E403.6	3	3	2	2	-	1	-	2	2	2	1	1	2	2
E403	3	3	2	2	-	1	-	2	2	2	1	1	2	2

E405 –GE8071 Disaster Management

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C405.1	Ability to Differentiate the types of disasters	1,2,3,4,10,11,12	1,2
C405.2	Ability to Assess vulnerability and various methods of risk reduction measures	1,2,3,4,10,11,12	1,2
C405.3	Ability to Draw the hazard and vulnerability profile of India	1,2,3,4,10,11,12	1,2
C405.4	Ability to Scenarios in the Indian context, Disaster damage assessment and management	1,2,3,4,10,11,12	1,2
C405.5	Ability to various methods of mitigation	1,2,3,4,10,11,12	1,2
C405.6	Ability to causes and their impact on environment and society	1,2,3,4,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C405.1	3	3	2	2	-	-	-	-	-	2	1	1	2	2
C405.2	3	3	2	2	-	-	-	-	-	2	1	1	2	2
C405.3	3	3	2	2	-	-	-	-	-	2	1	1	2	2
C405.4	3	3	2	2	-	-	-	-	-	2	1	1	2	2
C405.5	3	3	2	2	-	-	-	-	-	2	1	1	2	2
C405.6	3	3	2	2	-	-	-	-	-	2	1	1	2	2
C405	3	3	2	2	-	-	-	-	-	2	1	1	2	2

E406 EE 8010 Power Systems Transients

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C406.1	Ability to acquire and analyze switching and lightning transients	1,2,3,4,5,7,8,9,10,11,12	1,2

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C406.2	Ability to acquire knowledge on generation of switching transients and their control	1,2,3,4,5,7,8,9,10,11,12	1,2
C406.3	Ability to analyze the mechanism of lighting strokes	1,2,3,4,5,7,8,9,10,11,12	1,2
C406.4	Ability to acquire the importance of propagation, reflection and refraction of travelling waves	1,2,3,4,5,7,8,9,10,11,12	1,2
C406.5	Ability to find the voltage transients caused by faults	1,2,3,4,5,7,8,9,10,11,12	1,2
C406.6	Ability to acquire the concept of circuit breaker action, load rejection on integrated power system.	1,2,3,4,5,7,8,9,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C406.1	3	3	2	2	2	-	1	1	3	2	1	1	2	2
C406.2	3	3	2	2	2	-	1	1	3	2	1	1	2	2
C406.3	3	3	2	2	2	-	1	1	3	2	1	1	2	2
C406.4	3	3	2	2	2	-	1	1	3	2	1	1	2	2
C406.5	3	3	2	2	2	-	1	1	3	2	1	1	2	2
C406.6	3	3	2	2	2	-	1	1	3	2	1	1	2	2
C406	3	3	2	2	2	-	1	1	3	2	1	1	2	2

E407 EE8711 Power System Simulation Laboratory

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
C407.1	Ability to analyze power system planning and operational studies	1,2,3,4	1,2
C407.2	Ability to acquire knowledge on Formation of Bus Admittance and Impedance Matrices and Solution of Networks	1,2,3,4	1,2
C407.3	Ability to analyze the power flow using GS and NR method	1,2,3,4	1,2
C407.4	Ability to find Symmetric and Unsymmetrical fault	1,2,3,4	1,2
C407.5	Ability to analyze the economic dispatch	1,2,3,4	1,2
C407.6	Ability to analyze the electromagnetic transients	1,2,3,4	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C407.1	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C407.2	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C407.3	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C407.4	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C407.5	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C407.6	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C407	3	3	2	2	2	1	1	2	2	2	1	2	2	2

E408 EE8712 Renewable Energy Systems Laboratory

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
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C408.1	Ability to recognize and analyze Renewable energy systems.	1,2,3,4	1,2
C408.2	Ability to train the students in Renewable Energy Sources and technologies	1,2,3,4	1,2
C408.3	Ability to provide adequate inputs on a variety of issues in harnessing RenewableEnergy	1,2,3,4	1,2
C408.4	Ability to simulate the various Renewable energy sources	1,2,3,4	1,2
C408.5	Ability to recognize current and possible future role of Renewable energy sources	1,2,3,4	1,2
C408.6	Ability to recognize basics of Intelligent Controllers	1,2,3,4	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C408.1	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C408.2	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C408.3	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C408.4	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C408.5	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C408.6	3	3	2	2	2	1	1	2	2	2	1	2	2	2
C408	3	3	2	2	2	1	1	2	2	2	1	2	2	2

SEM -VIII

E409 - EE8015 Electric Energy Generation, Utilization and Conservation

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E409.1	To realize the main aspects of generation, utilization and conservation	1,2,3,4,6,8,10,11,12	1,2
E409.2	To identify an appropriate method of heating for any particular industrial application	1,2,3,4,6,8,10,11,12	1,2
E409.3	To evaluate domestic wiring connection and debug any faults occurred	1,2,3,4,6,8,10,11,12	1,2
E409.4	To construct an electric connection for any domestic appliance like refrigerator as well as to design a battery charging circuit for a specific household application	1,2,3,4,6,8,10,11,12	1,2
E409.5	To realize the appropriate type of electric supply system as well as to evaluate the	1,2,3,4,6,8,10,11,12	1,2
E409.6	To realize the main aspects of Traction	1,2,3,4,6,8,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E409.1	3	3	2	2	-	2	-	3	-	2	1	1	2	2
E409.2	3	3	2	2	-	2	-	3	-	2	1	1	2	2
E409.3	3	3	2	2	-	2	-	3	-	2	1	1	2	2
E409.4	3	3	2	2	-	2	-	3	-	2	1	1	2	2
E409.5	3	3	2	2	-	2	-	3	-	2	1	1	2	2
E409.6	3	3	2	2	-	2	-	3	-	2	1	1	2	2
E409	3	3	2	2	-	2	-	3	-	2	1	1	2	2

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E410 - EE8018 Microcontroller Based System Design

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E410.1	Ability to acquire and apply computing platform and software for engineering problems	1,2,3,4,6,7,10,11,12	1,2
E410.2	Ability to acquire the concepts of Architecture of PIC microcontroller	1,2,3,4,6,7,10,11,12	1,2
E410.3	Ability to acquire knowledge on Interrupts and timers	1,2,3,4,6,7,10,11,12	1,2
E410.4	Ability to acquire the importance of Peripheral devices for data communication	1,2,3,4,6,7,10,11,12	1,2
E410.5	Ability to acquire the basics of sensor interfacing	1,2,3,4,6,7,8,10,11,12	1,2
E410.6	Ability to acquire knowledge in Architecture of ARM processors	1,2,3,4,6,7,8,10,11,12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E410.1	3	3	2	2	-	1	2	-	-	2	1	1	2	2
E410.2	3	3	2	2	-	1	2	-	-	2	1	1	2	2
E410.3	3	3	2	2	-	1	2	-	-	2	1	1	2	2
E410.4	3	3	2	2	-	1	2	-	-	2	1	1	2	2
E410.5	3	3	2	2	-	1	2	1	-	2	1	1	2	2
E410.6	3	3	2	2	-	1	2	1	-	2	1	1	2	2
E410	3	3	2	2	-	1	2	1	-	2	1	1	2	2

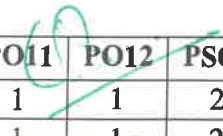
E411 EE8811 PROJECT WORK

After the course, the student should be able to:

CO	Course Outcomes	POs	PSOs
E411.1	Acquire knowledge on current social problems and find solution by formulating proper	1 - 12	1,2
E411.2	Analyze and prepare literature review using research articles.	1 - 12	1,2
E411.3	Find a research gap in the field.	1 - 12	1,2
E411.4	Develop skills in preparing project reports and presentations.	1 - 12	1,2
E411.5	Identify and suggest future scope of work in the relevant field.	1 - 12	1,2

Mapping of COs, C, PSOs with POs

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
E411.1	3	3	3	2	3	2	2	2	3	2	1	1	2	2
E411.2	3	3	3	2	3	2	2	2	3	2	1	1	2	2
E411.3	3	3	3	2	3	2	2	2	3	2	1	1	2	2


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E411.4	3	3	3	2	3	2	2	2	3	2	1	1	2	2
E411.5	3	3	3	2	3	2	2	2	3	2	1	1	2	2
E411	3	3	3	2	3	2	2	2	3	2	1	1	2	2



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