SHREE VENKATESHWARA HI-TECH ENGINEERING COLLEGE, GOBI

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REGULATION 2021

B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
II/IV	EE3401	TRANSMISSION AND DISTRIBUTION	**CO1** :Understand the structure of power system, computation of transmission line parameters for different configurations.	K2
			CO 2 :Model the transmission lines to determine the line performance and to understand the impact of Ferranti effect and corona on line performance.	K2,K3
			CO3 :Do Mechanical design of transmission lines, grounding and to understand about the insulators in transmission system.	K2,K3
			CO4 :Design the underground cables and understand the performance analysis of underground cable.	K2,K3
			CO5: Understand the modelling, performance analysis and modern trends in distribution system.	K2

CO – PO & PSO MAPPING

COS	*PO1*	*PO2*	*PO3*	*PO4*	*PO5*	*PO6*	*PO7*	*PO8*	*PO9*	*PO10*	*PO11*	*PO12*	PSO1	PSO2	PSO3
CO1	2	1	-	-	-	-	-	1	-	-	-	-	3	1	1
CO2	3	2	1	1	-	1	-	2	-	-	-	-	3	2	1
CO3	3	2	1	1	-	1	-	2	-	-	-	-	3	3	1
CO4	3	2	1	1	-	1	-	2	-	-	-	-	3	3	1
CO5	3	2	1	1	-	1	-	2	-	-	-	-	3	3	1
AVG	2.8	1.8	1	1	-	1	-	1.8	-	-	-	-	3	2.4	1

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REGULATION 2021

B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
II/IV	EE3402	LINEAR INTEGRATED CIRCUITS	**CO1 :** Explain monolithic IC fabrication process	K1
			CO 2: Explain the fabrication of diodes, capacitance, resistance, FETs and PV Cell.	K1,K2
			CO3 : Analyze the characteristics and basic applications (inverting/non-inverting amplifier, summer, differentiator, integrator, V/I and I/V converter) of Op-Amp	K4
			CO4 : Explain circuit and applications of op-amp based instrumentation amplifier, log/antilog amplifier, analog multiplier /divider, active filters, comparators, waveform generators, A/D and D/A converters	K2
			CO5: Explain Functional blocks, characteristics and applications of Timer, PLL, analog multiplier ICs	K2

CO – PO & PSO MAPPING

COS	*PO1*	*PO2*	*PO3*	*PO4*	*PO5*	*PO6*	*PO7*	*PO8*	*PO9*	*PO10*	*PO11*	*PO12*	*PSO1*	*PSO2*	*PSO3*
CO1	2	2	3	2	2	-	-	1	-	-	-	1	3	2	1
CO2	2	2	3	2	2	-	-	1	-	-	-	1	3	2	1
CO3	2	2	3	2	2	-	-	1	-	-	-	1	3	2	1
CO4	2	2	3	2	2	-	-	1	-	-	-	1	3	2	1
CO5	2	2	3	2	2	-	-	1	-	-	-	1	3	2	1
AVG	2	2	3	2	2	-	-	1	-	-	-	1	3	2	1

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REGULATION 2021

B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
II/IV	EE3403	MEASUREMENTS AND INSTRUMENTATION	**CO1 :** Ability to understand the fundamental art of measurement in engineering	K1, K2
			CO 2 : Ability to understand the structural elements of various instruments.	K1,K2
			CO3 : Ability to understand the importance of bridge circuits**.**	K1,K2
			CO4 : Ability to understand about various transducers and their characteristics by experiments	K2
			CO5 : Ability to understand the concept of digital instrumentation and virtual instrumentation by experiments	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	-	3	2	-	2	-	-	-	3	3	3	3
CO2	3	2	3	2	-	-	-	-	-	3	-	3	3	3	3
CO3	3	2	3	-	3	2	-	-	-	-	-	3	3	3	3
CO4	3	2	3	-	-	-	-	2	-	-	-	-	3	3	3
CO5	3	2	3	2	3	-	-	-	-	3	-	3	3	3	3
AVG	3	2	3	2	3	2	-	2	-	3	-	3	3	3	3

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
II/IV	EE3404	MICROPROCESSOR AND MICRO CONTROLLER	**CO1 :** Ability to write assembly language program for microprocessor and microcontroller	K1, K2
			CO 2 : Ability to design and implement interfacing of peripheral with microprocessor and microcontroller	K1,K2
			CO3 : Ability to analyze, comprehend, design and simulate microprocessor based systems used for control and monitoring	K1,K2
			CO4 : Ability to analyze, comprehend, design and simulate microcontroller based systems used for control and monitoring.	K2
			CO5 : Ability to understand and appreciate advanced architecture evolving microprocessor field	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	2	3	-	-	-	1	-	-	-	3	3	1	3
CO2	2	1	2	3	-	-	-	1	-	-	-	3	3	1	3
CO3	2	1	2	3	-	-	-	1	-	-	-	3	3	1	3
CO4	2	1	2	3	-	-	-	1	-	-	-	3	3	1	3
CO5	2	1	2	3	-	-	-	1	-	-	-	3	3	1	3
AVG	2	1	2	3	-	-	-	1	-	-	-	3	3	1	3

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
II/IV	EE3405	ELECTRICAL MACHINES - II	**CO1 :** Ability to understand the construction and working principle of Synchronous generator	K1, K2
			CO 2 : Ability to understand the construction and working principle of Synchronous Motor	K1,K2
			CO3 : Ability to understand the construction and working principle of Three Phase Induction Motor	K1,K2
			CO4 : Acquire knowledge about the starting and speed control of induction motors	K2
			CO5 : To gain knowledge about the basic principles and working of Single phase induction motors and Special Electrical Machines.	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	-	-	1	-	-	-	-	3	3	2
CO2	3	3	2	3	3	-	-	1	-	-	-	-	3	3	2
CO3	3	3	2	3	3	-	-	1	-	-	-	-	3	3	2
CO4	3	3	2	3	3	-	-	1	-	-	-	-	3	3	2
CO5	3	3	1	1	2	-	-	1	-	-	-	-	3	3	2
CO6	3	3	1	1	2	-	-	1	-	-	-	-	3	3	2
AVG	3	3	1.6	2.3	2.6	-	-	1	-	-	-	-	3	3	2

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
II/IV	EE3411	ELECTRICAL MACHINES LABORATORY - II	**CO1 :** Ability to understand and analyze EMF and MMF methods	K1, K2
			CO 2 : Ability to analyze the characteristics of V and Inverted V curves	K1,K2
			CO 3 : Acquire hands on experience of conducting various tests on alternators and obtaining their performance indices using standard analytical as well as graphical methods. to understand the importance of Synchronous machines	K2,K3
			CO 4 : Acquire hands on experience of conducting various tests on induction motors and obtaining their performance indices using standard analytical as well as graphical methods. to understand the importance of single and three phase Induction motors	K3
			CO 5 : Ability to acquire knowledge on separation of losses	K3

CO – PO & PSO MAPPING

COS	*PO1*	*PO2*	*PO3*	*PO4*	*PO5*	*PO6*	*PO7*	*PO8*	*PO9*	*PO10*	*PO11*	*PO12*	*PSO1*	*PSO2*	*PSO3*
CO1	3	3	1	1	-	-	-	1.5	1	-	-	3	3	3	2
CO2	3	3	1	1	-	-	-	1.5	1	-	-	3	3	3	2
CO3	3	3	1	1	-	-	-	1.5	1	-	-	3	3	3	1
CO4	3	3	1	1	-	-	-	1.5	1	-	-	3	3	3	1
CO5	3	3	1	1	-	-	-	1.5	1	-	-	2	3	3	2
AVG	3	3	1	1	-	-	-	1.5	1	-	-	2.8	3	3	1.6

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
II/IV	EE3412	LINEAR AND DIGITAL CIRCUITS LABORATORY	**CO1 :**Ability to understand and implement Boolean Functions.	K1, K2
			CO 2 : Ability to understand the importance of code conversion	K1,K2
			CO3 : Ability to Design and implement circuits with digital ICs like decoders, multiplexers, register.	K1,K2
			CO4 : Ability to acquire knowledge on Application of Op-Amp	K3
			CO5 : Ability to Design and implement counters using analog ICs like timers, VCOs and digital ICs like Flip-flops and counters	K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	3	-	-	-	1.5	-	-	3	3	2	1	2
CO2	-	-	3	3	-	-	-	1.5	-	-	3	3	2	1	2
CO3	-	3	2	3	3	-	-	1.5	-	-	3	3	2	1	2
CO4	-	3	3	3	3	-	-	1.5	-	-	3	3	2	1	2
CO5	-	-	-	-	-	-	-	1.5	-	-	-	3	-	-	-
AVG	-	3	1.6	3	3	-	-	1.5	-	-	3	3	2	1	2

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
II/IV	EE3413	MICROPROCESSOR AND MICROCONTROLLER LABORATORY	**CO1:** Ability to write assembly language program for microprocessor.	K2,K3
			CO2: Ability to write assembly language program for microcontroller	K2
			CO3: Ability to design and implement interfacing of peripheral with microprocessor and microcontroller	K2,K3
			CO4: Ability to analyze, comprehend, design and simulate microprocessor based systems used for control and monitoring..	K2
			CO5: Ability to analyze, comprehend, design and simulate microcontroller based systems used for control and monitoring.	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	2	3	-	-	-	1.5	-	-	-	3	3	1	3
CO2	2	1	2	3	-	-	-	1.5	-	-	-	3	3	1	3
CO3	2	1	2	3	-	-	-	1.5	-	-	-	3	3	1	3
CO4	2	1	2	3	-	-	-	1.5	-	-	-	3	3	1	3
CO5	2	1	2	3	-	-	-	1.5	-	-	-	3	3	1	3
AVG	2	1	2	3	-	-	-	1.5	-	-	-	3	3	1	3

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3501	POWER SYSTEM ANALYSIS	**CO1 :** Ability to model the power system under steady state operating condition	K1,K2
			CO 2 : Ability to carry out power flow analysis	K1,K2
			CO3 : Ability to infer the significance of short circuit studies in designing circuit breakers.	K2,K3
			CO4 : Ability to analyze the state of the power system for various unsymmetrical faults	K2,K3
			CO5 : Ability to analyze the stability of power system using different methods.	K3,K4

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	1	1	-	-	-	1	-	-	-	1	-	**2**
CO2	3	3	3	2	1	-	-	-	1	-	-	-	1	1	1
CO3	3	3	3	2	1	-	-	-	1	-	-	1	1	1	1
CO4	3	2	2	2	2	-	-	-	1	-	-	1	1	1	2
CO5	3	3	2	2	2	-	-	-	1	-	-	1	1	1	1
AVG	3	2.6	2.4	1.8	1.4	-	-	-	1	-	-	1	1	1	1.4

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3591	POWER ELECTRONICS	**CO1 :** Understand the operation of semiconductor devices and dynamic characteristics and to design &analyze the low power SMPS	K2
			CO 2 : Analyze the various uncontrolled rectifiers and design suitable filter circuits	K2,K4
			CO3 : Analyze the operation of the n-pulse converters and evaluate the performance parameters	K4
			CO4 : Understand various PWM techniques and apply voltage control and harmonic elimination methods to inverter circuits	K2
			CO5: Understand the operation of AC voltage controllers and its applications.	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	2	1	-	-	3	3	3	3	3
CO2	3	3	3	3	-	-	-	1	-	-	-	-	3	3	3
CO3	3	3	3	3	-	-	2	1	-	-	2	-	3	3	3
CO4	3	3	3	3	-	-	1	1	-	-	2	3	3	3	3
CO5	3	3	3	3	-	-	1	1	-	-	2	3	3	3	3
AVG	3	3	3	3	-	-	1.5	1	-	-	2.25	3	3	3	3

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REGULATION 2021

B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3503	CONTROL SYSTEMS	**CO1:** Represent simple systems in transfer function and state variable forms**.**	K1, K2
			CO2 : Analyze simple systems in time domain.	K1,K2
			CO3 : Analyze simple systems in frequency domain	K3
			CO4 : Infer the stability of systems in time and frequency domain.	K3
			CO5 : Interpret characteristics of the system and find out solution for simple control problems.	K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	-	-	1	-	-	-	3	3	3	3
CO2	3	3	3	3	3	-	-	1	-	-	-	3	3	3	3
CO3	3	3	3	3	3	-	-	1	-	-	-	3	3	3	3
CO4	3	3	3	3	3	-	-	1	-	-	-	3	3	3	3
CO5	3	3	3	3	3	-	-	1	-	-	-	3	3	3	3
AVG	3	3	3	3	3	-	-	1	-	-	-	3	3	3	3

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REGULATION 2021

B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3009	SPECIAL ELECTRICAL MACHINES	**CO1:**Ability to model and analyze power electronic systems and equipment using computational software.	K1,K2
			CO2: Ability to optimally design magnetics required in special machines based drive systems using FEM based software tools.	K2
			CO3: Ability to analyse the dynamic performance of special electrical machines	K3
			CO4: Ability to understand the operation and characteristics of other special electrical machines	K2
			CO5: Ability to design and conduct experiments towards research	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	-	1	-	1	-	1	3	2	2
CO2	3	3	3	3	-	-	2	1	-	2	-	3	3	3	3
CO3	3	-	-	-	-	-	-	1	-	1	-	1	3	3	3
CO4	3	3	3	3	-	-	3	1	-	3	-	3	3	3	3
CO5	3	3	3	3	3	-	-	1	-	3	-	3	3	3	3
CO6	3	3	3	3	3	-	-	1	-	3	-	3	3	3	3
AVG	3	3	3	3	3	-	2.5	1	-	2.2	-	2.3	3	2.8	2.8

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3012	ELECTRICAL DRIVES	**CO1:** Understand the basic requirements of motor selection for different load profiles	K1,K2
			CO 2: Analyse the steady state behavior and stability aspects of drive systems	K2,K4
			CO3: Analyse the dynamic performance of the DC drive using converter and chopper control.	K2,K4
			CO4: Simulate the AC drive**.**	K3
			CO5: Design the controller for electrical drives.	K4

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	3	3	-	-	1	-	-	-	2	3	3	2
CO2	3	2	2	3	3	-	-	1	-	-	-	2	3	3	2
CO3	3	2	2	3	3	-	-	1	-	-	-	2	3	3	3
CO4	3	2	2	3	3	-	-	1	-	-	-	2	3	3	3
CO5	3	2	2	3	3	-	-	1	-	-	-	2	3	3	3
CO6	3	2	2	3	3	-	-	1	-	-	-	2	3	3	2
AVG	3	2	2	3	3	-	-	1	-	-	-	2	3	3	3

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3014	POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS	**CO1:** Examine the available renewable energy sources	K2
			CO2: Demonstrate the working principles of electrical machines and power converters used for wind energy conversion system	K2,K3
			CO3: Demonstrate the principles of power converters used for solar PV systems	K2,K3
			CO4: Examine the available hybrid renewable energy systems.	K3
			CO5: Simulate AC-DC converters, buck/boost converters, AC-AC converters and PWM inverters.	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	2	-	-	-	-	-	-	2	-	2	3	3	3
CO2	3	-	2	-	-	-	-	-	-	2	-	2	3	3	3
CO3	3	-	2	-	-	-	-	-	-	2	-	2	3	3	3
CO4	3	-	3	-	-	-	-	-	-	2	-	2	3	3	3
CO5	3	3	2.25	3	3	-	-	3	-	2	-	3	3	3	3
AVG	3	3	2	3	3	-	-	3	-	2	-	2.2	3	3	3

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	MX3084	DISASTER RISK REDUCTION AND MANAGEMENT	**CO1:** To impart knowledge on the concepts of Disaster, Vulnerability and Disaster Risk reduction(DRR)	K2
			CO2: To enhance understanding on Hazards, Vulnerability and Disaster Risk Assessment prevention and risk reduction	K2,K3
			CO3: To develop disaster response skills by adopting relevant tools and technology	K3
			CO4: Enhance awareness of institutional processes for Disaster response in the country	K3
			CO5: Develop rudimentary ability to respond to their surroundings with potential Disaster response in areas where they live, with due sensitivity	K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	3	-	-	2	2	-	-	2	-	2	-	1
CO2	3	3	3	3	-	-	2	1	-	-	2	-	2	-	1
CO3	3	3	3	3	-	-	2	2	-	-	-	-	2	-	1
CO4	3	3	2	3	-	-	2	1	-	-	2	-	2	-	1
CO5	3	3	2	3	-	-	2	2	-	-	2	-	3	-	1
AVG	3	3	3	3	-	-	2	2	-	-	2	-	2	-	1

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3004	HVDC AND FACTS	**CO1:** To Identify and understand the problems in AC transmission systems and understand the need for Flexible AC transmission systems and HVDC Transmission	K2
			CO2: To understand the operation and control of SVC and TCSC and its applications to enhance the stability and damping.	K2,K3
			CO3: To Analyze basic operation and control of voltage source converter based FACTS controllers	K4
			CO4: To demonstrate basic operation and control of Line Commutated HVDC Transmission	K3
			CO5: To explain the d-q control based operation of VSC based HVDC Transmission	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	1	3	1	-	-	-	-	-	-	-	2	3	3
CO2	2	3	1	2	3	-	-	-	-	-	-	-	2	3	3
CO3	2	3	1	3	1	-	-	-	-	-	-	-	2	3	3
CO4	3	3	1	2	3	-	-	-	-	-	-	-	2	3	3
CO5	3	3	1	3	1	-	-	-	-	-	-	-	2	3	3
AVG	2.6	3	1	2.6	1.8	-	-	-	-	-	-	-	2	3	3

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3006	POWER QUALITY	**CO1:** Use various definitions of power quality for power quality issues	K1,K2
			CO2 : Describe the concepts related with single phase / three phase, linear / nonlinear loads and single phase / three phase sinusoidal, non-sinusoidal source	K2
			CO3: Solve problems related with mitigation of Power System Harmonics	K2,K3
			CO4: Use DSTATCOM for load compensation	K2
			CO5: Demonstrate the role of DVR, SAFs UPQC in power distribution system	K2,K3

CO – PO & PSO MAPPING

COS	*PO1*	*PO2*	*PO3*	*PO4*	*PO5*	*PO6*	*PO7*	*PO8*	*PO9*	*PO10*	*PO11*	*PO12*	*PSO1*	*PSO2*	*PSO3*
CO1	3	3	3	3	-	-	3	3	-	3	-	3	3	3	3
CO2	3	3	3	3	-	-	3	3	-	3	-	3	3	3	3
CO3	3	3	3	3	-	-	3	3	-	3	-	3	3	3	3
CO4	3	3	3	3	-	-	3	3	-	3	-	3	3	3	3
CO5	3	3	3	3	-	-	3	3	-	3	-	3	3	3	3
AVG	3	3	3	3	-	-	3	3	-	3	-	3	3	3	3

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3511	POWER ELECTRONICS LABORATORY	**CO1 :** Determine the characteristics of SCR, IGBT, TRIAC, MOSFET and IGBT	K1,K2
			CO 2 : Find the transfer characteristics of full converter, semi converter, step up and step down choppers by simulation experimentation.	K2
			CO3 : Analyze the voltage waveforms for PWM inverter using various modulation techniques.	K2,K4
			CO4 : Design and experimentally verify the performance of basic DC/DC converter topologies used for SMPS.	K2,K4
			CO5 : Understand the performance of AC voltage controllers by simulation and experimentation	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
CO1	3	3	3	3	3	-	-	1.5	-	-	-	3	3	3	3	
CO2	3	3	3	3	3	-	-	1.5	-	-	-	3	3	3	3	
CO3	3	3	3	3	3	-	-	1.5	-	-	-	3	3	3	3	
CO4	3	3	3	3	3	-	-	1.5	-	-	-	3	3	3	3	
CO5	3	3	3	3	3	-	-	1.5	-	-	-	3	3	3	3	
AVG	3	3	3	3	3	-	-	1.5	-	-	-	3	3	3	3	

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/V	EE3512	CONTROL AND INSTRUMENTATION LABORATORY	**CO1 :** To model and analyze simple physical systems and simulate the performance in analog and digital platform.	K2,K3
			CO 2 : To design and implement simple controllers in standard forms.	K2,K4
			CO3 : To design compensators based on time and frequency domain specifications.	K2,K4
			CO4 : To design a complete closed control loop and evaluate its performance for simple physical systems.	K2,K4
			CO5 : To analyze the stability of a physical system in both continuous and discrete domains.	K4

CO – PO & PSO MAPPING

COS	*PO1*	*PO2*	*PO3*	*PO4*	*PO5*	*PO6*	*PO7*	*PO8*	*PO9*	*PO10*	*PO11*	*PO12*	*PSO1*	*PSO2*	*PSO3*
CO1	3	3	3	3	3	-	-	1.5	-	-	-	2	3	3	3
CO2	3	3	3	3	3	-	-	1.5	-	-	-	2	3	3	3
CO3	3	3	3	3	3	-	-	1.5	-	-	-	2	3	3	3
CO4	3	3	3	3	3	-	-	1.5	-	-	-	2	3	3	3
CO5	3	3	3	3	3	-	-	1.5	-	-	-	2	3	3	3
AVG	3	3	3	3	3	-	-	1.5	-	-	-	2	3	3	3

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VI	EE3601	PROTECTION AND SWITCHGEAR	**CO1:** Understand and select proper protective scheme and type of earthing.	K2
			CO2: Explain the operating principles of various relays.	K2
			CO3: Suggest suitable protective scheme for the protection of various power system apparatus.	K2,K3
			CO4: Analyze the importance of static relays and numerical relays in power system protection.	K2,K4
			CO5: Summarize the merits and demerits and application areas of various circuit breakers.	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PS03
CO1	3	1	1	2	1	2	1	1	1	1	2	-	3	1	-
CO2	3	1	1	2	1	2	1	1	1	1	2	-	3	1	-
CO3	3	1	1	2	1	2	1	1	1	1	2	-	3	2	-
CO4	3	1	1	2	1	2	1	1	1	1	2	-	3	2	1
CO5	3	1	1	2	2	2	1	1	1	1	2	-	3	1	1
AVG	3	1	1	2	1.2	2	1	1	1	1	2	-	3	1.4	1

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VI	EE3602	POWER SYSTEM OPERATION AND CONTROL	**CO1 :**Understand the day – to – day operation of power system.	K2
			CO 2 : Model and analyse the control actions that are implemented to meet the minute-to minute variation of system real power demand.	K2,K3
			CO3 : Model and analyze the compensators for reactive power control and various devices used for voltage control**.**	K4
			CO4 : Prepare day ahead and real time economic generation scheduling.	K3
			CO5: Understand the necessity of computer control of power systems.	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PS03
CO1	2	1	-	-	-	-	-	1	-	-	-	2	3	3	3
CO2	3	2	1	1	-	1	-	2	-	2	-	2	3	3	3
CO3	3	2	1	1	-	1	-	2	-	2	-	2	3	3	3
CO4	3	2	1	1	-	1	-	2	-	2	-	2	3	1	2.33
CO5	2	1	-	-	-	-	-	1	-	2	-	2	3	3	3
AVG	2	1.6	1	1	-	1	-	1.6	-	2	-	2	3	2.2	2.86

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VI	OCS351	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FUNDAMENTALS	**CO1 :** Understand the foundations of AI and the structure of Intelligent Agents	K2
			CO 2 : Use appropriate search algorithms for any AI problem	K1,K2
			CO3 : Study of learning methods	K2
			CO4 : Solving problem using Supervised learning	K3
			CO5: Solving problem using Unsupervised learning	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	3	1	3	2	-	-	-	-	1	3	3
CO2	3	2	2	3	1	3	2	-	-	-	-	1	3	3
CO3	1	2	1	3	2	3	2	-	-	-	-	1	3	3
CO4	1	2	3	1	3	3	2	-	-	-	-	1	3	3
CO5	2	2	2	-	3	3	2	-	-	-	-	1	3	3
AVG	2	2	2	2	2	3	2	-	-	-	-	1	3	3

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VI	EE3034	DESIGN AND MODELLING OF RENEWABLE ENERGY SYSTEMS	**CO1:**Review the perspectives of renewable energy systems	K2
			CO 2: Integrate photovoltaic systems with grid	K3
			CO3: Study inverter for PV systems	K2,K3
			CO4: Elaborate the working of small wind power systems	K3
			CO5: Study the features of induction machine and doubly fed induction machine	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PS03
CO1	3	-	3	2	-	-	-	-	-	-	-	-	3	-	2
CO2	3	2	3	3	-	-	-	-	-	-	-	-	3	3	3
CO3	3	2	3	3	2	-	-	-	-	-	-	-	3	3	3
CO4	3	2	3	3	-	-	-	-	-	-	-	-	3	3	3
CO5	3	2	3	3	2	-	-	-	-	-	-	-	3	3	3
AVG	3	2	3	2.8	2	-	-	-	-	-	-	-	3	3	2.8

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VI	MX3089	INDUSTRIAL SAFETY	**CO1:**Understand the basic concept of safety.	K2
			CO2: Obtain knowledge of Statutory Regulations and standards.	K2
			CO3: Know about the safety Activities of the Working Place.	K2,K3
			CO4: Analyze on the impact of Occupational Exposures and their Remedies	K4
			CO5: Obtain knowledge of Risk Assessment Techniques.	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	1	1	3	2	2	3	3	1	3	3	3	3
CO2	2	3	2	2	1	3	2	3	3	2	1	3	3	3	3
CO3	2	2	2	2	1	2	2	2	3	2	1	2	3	3	3
CO4	3	3	3	2	2	3	2	2	3	2	1	3	3	3	3
CO5	3	2	3	2	2	3	2	2	3	2	2	3	3	3	3
AVG	3	3	3	2	1	3	2	2	3	2	1	3	3	3	3

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VI	EE3033	HYBRID ENERGY TECHNOLOGY	**CO1:** Analyze the impacts of hybrid energy technologies on the environment and demonstrate them to harness electrical power.	K2,K3
			CO2: Select a suitable Electrical machine for Wind Energy Conversion Systems and simulate wind energy conversion system	K2,K3
			CO3: Design the power converters such as AC-DC, DC-DC, and AC-AC converters for SPV systems.	K2,K4
			CO4: Analyze the power converters such as AC-DC, DC-DC, and AC-AC converters for Hybrid energy systems.	K2,K4
			CO5: Interpret the hybrid renewable energy systems**.**	K4

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	-	-	-	-	3	-	3	3	3	3
CO2	3	3	3	2	3	-	-	-	-	3	-	3	3	3	3
CO3	3	3	3	2	3	-	-	-	-	3	-	3	3	3	3
CO4	3	3	3	2	3	-	-	-	-	3	-	3	3	3	3
CO5	3	3	3	2		-	-	-	-	3	-	3	3	3	3
AVG	3	3	3	2	3	-	-	-	-	3	-	3	3	3	3

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VI	EE3036	SUSTAINABLE AND ENVIRONMENTAL FRIENDLY HV INSULATION SYSTEM	**CO1 :** Know about sustainable and environmental energy and products.	K2
			CO 2 : Describe the alternate green gaseous insulators.	K2
			CO3 : Describe the alternate green liquid insulators	K1,K2
			CO4 : Describe the alternate green solid insulators	K1,K2
			CO5 : Elaborate the standards for Green insulation systems.	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	3	-	-	-	3	-	-	-	-	-	3	-	3
CO2	3	-	3	-	-	-	3	-	-	-	-	-	3	-	3
CO3	3	-	3	-	-	-	3	-	-	-	-	-	3	-	3
CO4	3	-	3	-	-	-	3	-	-	-	-	-	3	-	3
CO5	3	-	3	-	-	-	3	-	-	-	-	-	3	-	3
AVG	3	-	3	-	-	-	3	-	-	-	-	-	3	-	3

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VI	EE3611	POWER SYSTEM LABORATORY	**CO1:** Model and analyze the performance of the transmission lines.	K2,K3
			CO2: Perform power flow, short circuit, and stability analysis for any power system network	K2,K3
			CO3: Understand, design, and analyze the load frequency control mechanism.	K3
			CO4: Perform optimal scheduling of generators and compute the state of the power system.	K2,K3
			CO5: Understand, analyze, and apply the relays for power system protection.	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	2	3	-	-	2	1	2	-	3	3	3	3
CO2	3	3	2	2	3	-	-	2	1	2	-	3	3	3	3
CO3	3	3	2	2	3	-	-	2	1	2	-	3	3	3	3
CO4	3	3	2	2	3	-	-	2	1	2	-	3	3	3	3
CO5	3	3	2	2	3	-	-	2	1	2	-	3	3	3	3
AVG	3	3	2	2	3	-	-	2	1	2	-	3	3	3	3

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B.E EEE COURSE OUTCOMES (CO)

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
III/VII	EE3701	HIGH VOLTAGE ENGINEERING	**CO1:** Explain various overvoltage's and its effects on power systems	K2
			CO2: Understand the breakdown phenomena in different medium under uniform and non- uniform fields.	K2
			CO3 : Explain the methods of generating and measuring High DC, AC, Impulse voltage and currents.	K1,K2
			CO4: Suggest and Conduct suitable HV testing of Electrical power apparatus as per Standards	K2,K3
			CO5: Explain the Industrial Applications of Electrostatic Fields.	K2

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	-	-	-	-	-	-	-	-	-	-	3	2	-
CO2	3	2	-	1	-	-	-	-	-	-	-	-	3	-	-
CO3	2	2	3	1	-	-	-	-	-	-	2	3	3	2	-
CO4	1	2	3	1	-	-	-	1	1	-	-	3	3	2	-
CO5	2	2	1	-	-	2	-	-	-	-	2	-	3	-	2
AVG	2	2	2.33	1	-	2	-	1	1	-	2	3	3	2	2

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
IV/VII	GE3791	HUMAN VALUES AND ETHICS	**CO1:**Identify the importance of democratic, secular and scientific values in harmonious functioning of social life	K1,K2
			CO 2 : Practice democratic and scientific values in both their personal and professional life**.**	K2,K3
			CO3 : Find rational solutions to social problems.	K3
			CO4 : Behave in an ethical manner in society	K2,K3
			CO5: Practice critical thinking and the pursuit of truth.	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	-	-	3	-	-	-	-	3	3	2
CO2	1	2	2	3	-	1	-	3	-	-	-	-	3	3	2
CO3	1	1	2	2	-	2	-	3	-	-	-	-	3	2	2
CO4	1	1	2	-	-	2	-	3	-	-	-	-	3	2	1
CO5	2	3	3	2	-	1	-	3	-	-	-	-	3	1	1
AVG	1.6	2	2.4	1.8	-	1.2	-	3	-	-	-	-	3	2.2	1.6

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B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
IV/VII	GE3751	PRINCIPLES OF MANAGEMENT	**CO1 :** Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling.	K2,K3
			CO 2 : Have same basic knowledge on international aspect of management.	K2
			CO3 : Ability to understand management concept of organizing	K2
			CO4 : Ability to understand management concept of directing.	K2
			CO5: Ability to understand management concept of controlling.	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	1	-	-	-	-	-	-	2	1	1
CO2	-	1	1	-	-	-	-	-	-	-	-	-	2	1	-
CO3	1	-	-	2	-	-	1	-	2	-	1	1	-	-	2
CO4	-	1	1	1	2	-	-	1	2	-	-	-	1	1	1
CO5	1	-	-	-	1	1	-	-	-	3	-	1	1	-	1
AVG	1.66	1	1	1.5	1.5	1	1	1	2	3	1	1	1.5	1	1.25

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REGULATION 2021

B.E EEE COURSE OUTCOMES (CO

At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
IV/VII	OCS352	IOT CONCEPTS AND APPLICATIONS	**CO1 :** Explain the concept of IoT.	K2
			CO 2 : Understand the communication models and various protocols for IoT.	K2
			CO3 : Design portable IoT using Arduino/Raspberry Pi /open platform	K2,K3
			CO4 : Apply data analytics and use cloud offerings related to IoT.	K3
			CO5: Analyze applications of IoT in real time scenario.	K4

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2	-	-	-	-	-	-	-	3	2
CO2	3	3	3	2	2	-	-	-	-	-	-	-	3	2
CO3	3	3	2	2	2	-	-	-	-	-	-	-	2	1
CO4	3	3	2	2	2	-	-	-	-	-	-	-	3	3
CO5	3	3	3	2	2	-	-	-	-	-	-	-	3	3
AVG	3	3	2.6	2.2	2.2	-	-	-	-	-	-	-	2.8	2.2

SHREE VENKATESHWARA HI-TECH ENGINEERING COLLEGE, GOBI

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

REGULATION 2021

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YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
IV/VII	OAI351	URBAN AGRICULTURE	**CO1 :** Demonstrate the principles behind crop production and various parameters that influences the crop growth on roof tops	K1, K2
			CO 2 : Explain different methods of crop production on roof tops	K1,K2
			CO3 : Explain nutrient and pest management for crop production on roof tops	K1,K2
			CO4 : Illustrate crop water requirement and irrigation water management on roof tops	K2,K3
			CO5: Explain the concept of waste management on roof tops	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1
CO2	2	1	2	1	2	2	2	1	1	2	1	2	2	1	2
CO3	1	1	1	2	1	1	1	1	2	1	1	1	1	2	1
CO4	1	1	1	2	1	2	1	1	1	1	1	1	1	1	2
CO5	2	1	3	1	1	1	2	2	1	2	1	3	2	1	1
AVG	1	2	2	1	2	1	1	1	1	1	2	2	1	1	2

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YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
IV/VII	OMR353	SENSORS	**CO1:** Understand various sensor effects, sensor characteristics, signal types, calibration methods and obtain transfer function and empirical relation of sensors. They can also analyze the densor response.	K2
			CO2: Analyze and select suitable sensor for displacement, proximity and range measurement.	K2,K4
			CO3: Analyze and select suitable sensor for force, magnetic field, speed, position and direction measurement.	K4
			CO4: Analyze and select suitable sensor for force, magnetic field, speed, position and direction measurement.	K4
			CO5: Select and design suitable signal conditioning circuit with proper compensation and linearizing element based on sensor output signal.	K2,K4

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	-	-	-	-	-	-	-	1	2	3	2	1
CO2	3	3	2	1	1	1	-	-	-	-	1	2	3	2	1
CO3	3	3	2	1	1	1	-	-	-	-	1	2	3	2	1
CO4	3	3	2	1	1	1	-	-	-	-	1	2	3	2	1
CO5	3	3	2	1	1	1	-	-	-	-	1	2	3	2	1
AVG	3	3	2	0.8	0.8	0.8	-	-	-	-	0.8	2	3	2	1

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At the end of the course, students will be able to:

YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
IV/VII	EE3023	MEMS AND NEMS	**CO1:** Explain the material properties and the significance of MEMS and NEMS for industrial automation.	K1,K2
			CO2: Demonstrate knowledge delivery on micromachining and micro fabrication.	K2
			CO3: Apply the fabrication mechanism for MEMS sensor and actuators	K3
			CO4: Apply the concepts of MEMS and NEMS to models ,simulate and process the sensors and actuators.	K3
			CO5: Improved Employability and entrepreneurship capacity due to knowledge up gradation on MEMS and NEMS technology.	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	1	1	1	-	-	-	-	-	-	-	1	3	2
CO2	2	1	2	2	1	-	-	-	-	-	-	-	1	1	2
CO3	2	2	2	1	3	-	-	-	-	-	-	-	2	3	3
CO4	3	2	2	2	3	-	-	-	-	-	-	-	2	2	3
CO5	3	2	3	3	3	-	-	-	1	-	-	-	2	1	2
AVG	2.4	1.8	2	1.8	2.4	-	-	-	1	-	-	-	1.6	2	2.4

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YR/SEM	COURSE CODE	COURSE NAME	COURSE OUTCOMES (CO)	KNOWLEDGE LEVEL
IV/VIII	EE3811	PROJECT WORK	**CO1:** Ability to identify, formulate, design, interprete, analyze and provide solutions to complex engineering and societal issues by applying knowledge gained on basics of science and Engineering.	K2
			CO2: Ability to choose, conduct and demonstrate a sound technical knowledge of their selected project topics in the field of power components, protection, high voltage, electronics, process automation, power electronics and drives instrumentation and control by exploring suitable engineering and IT tools.	K2,K3
			CO3: Ability to understand, formulate and propose new learning algorithms to solve engineering and societal problems of moderate complexity through multi disciplinary projects understanding commitment towards sustainable development.	K2,K3
			CO4: Ability to demonstrate, prepare reports, communicate and work in a team as a member/leader by adhering to ethical responsibilities.	K2,K3
			CO5: Ability to acknowledge the value of continuing education for oneself and to stay up with technology advancements.	K2,K3

CO – PO & PSO MAPPING

COS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	-	-	-	-	-	-	3	3	3
CO2	-	-	-	-	3	3	-	-	-	-	-	-	3	-	-
CO3	-	-	-	-	-	-	3		3	-	-	-	-	-	3
CO4	-	-	-	-	-	-	-	3	3	3	3	-	-	-	3
CO5	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3
AVG	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3