Part-I

Class: S.Y.B.Tech (Autonomous)

Course: EED202 Analog and Digital Electronics

Course Outcome

	By the end of the course the student will be able to:
CO1	Illustrate working principle of BJT and basic electronic circuits (clipper, clamper and bridge rectifier with filters)
CO2	Explain working of basic Oscillators, amplifiers and OPAMP.
CO3	Demonstrate different number systems.
CO4	Describe Boolean algebra and minimize combinational functions
CO5	Design and verify combinational and sequential circuits.
CO6	Observe the operation of various analog circuits.

CO-PO-PSO Mapping

CO	PO1	PO2	PO3	PO5	PO10	PO11	PO12	PSO1	PSO3
CO1	3							1	
CO2	2	1						1	
CO3	2							1	
CO4	2							1	
CO5	2		1					1	
CO6	3							1	
Average	2.33	1.0	1.0					1.0	
Mapping Strength	2.0	1.0	1.0					1.0	

Class: S.Y.B.Tech (Autonomous)

Course Name: EED 203 Network Analysis

Course Outcome

	By the end of the course the student will be able to:
CO1	Apply the knowledge of basic circuital law and analyse the circuit using Kirchhoff's law.
CO2	Simplify the network using reduction techniques and Network simplification theorems.
CO3	Analyse circuits using graph theory.
CO4	Infer and evaluate transient response, Steady state response.
CO5	Apply the Laplace transform to linear circuits and systems.
CO6	Evaluate two-port network parameters and synthesize one port network.

CO-PO-PSO Mapping

CO	PO1	PO2	PO3	PO5	PO10	PO11	PO12	PSO1	PSO3
CO1	3							1	
CO2	2	1						1	
CO3	2							1	
CO4	2							1	
CO5	2		1					1	
CO6	3							1	
Average	2.33	1.0	1.0					1.0	
Mapping Strength	2.0	1.0	1.0					1.0	

Class: **S.Y.B.Tech (Autonomous)**

Course: EED211 Python Programming and Data Structures

Course Outcome

	By the end of the course the student will be able to:
CO1	Use basic Python programming concepts and operations.
CO2	Draw the flowchart and design an algorithm for a given problem and to develop python programs using operators to find its solution.
CO3	Develop conditional and iterative statements to write python programs which uses Arithmetic, Logical, Relational operators
CO4	Design and implement the python code using user defined functions.

CO-PO-PSO Mapping

CO	**PO1**	**PO2**	**PO3**	**PO5**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO3**
CO1	2	-	-	-	-	-	2	1	
CO2	2	2	-	-	-	-	2	1	-
CO3	2	-	-	-	-	-	2	1	-
CO4	2	-	-	-	-	-	2	-	1
Average	2.0	2.0	-	-	-	-	2.0	-	-
Mapping Strength	2.0	2.0	-	-	-	-	2.0	1	1

Class: S.Y.B.Tech (Autonomous)

Course code & Course Title: OE241 E Electrical, Fire and Vehicle Safety

Course Outcome

	By the end of the course the student will be able to:
CO1	Understand basic electrical safety provisions, OSHA standards, and the impact of electrical current on the human body
CO2	Study the causes, severity, and prevention of electric shocks, including first aid and accident management techniques.
CO3	Identify causes and types of electrical fires, and understand fire prevention and protection strategies.
CO4	Understand battery location and design considerations for electric vehicles
CO5	Explore electric vehicle components, battery types, associated hazards, and safety measures at charging stations.
CO6	Understand the scope of the Indian Electricity Act and Rules, safety requirements for electrical installations, and standards for electric vehicles.

CO-PO-PSO Mapping

CO	PO1	PO 2	PO 4	PO 7	PO12	PSO1	PSO2	PSO3
CO1	2			1	1			1
CO2	2	1				1	1	
CO3	2			1	1		1	
CO4	1		1				1	
CO5	2	1	2				1	
CO6	2	2				1		
Average	2	1.6						
Mapping Strength	2	2						

Part-II

Class: S.Y. B.Tech (NEP)

Course code & Course Title: EED251_Electrical Power Transmission and Distribution

Course Outcomes:

	By the end of the course the student will be able to:
CO1	Describe layout and operation of thermal and hydro power plant.
CO2	Calculate the transmission line constants of solid & composite conductors using the concept of GMD.
CO3	Classify types of conductors and insulators also compare them based on the design specification & illustrate the effects caused by voltage & current.
CO4	Calculate the sending end and receiving end parameters of different (short, medium & long) types of transmission lines
CO5	Discuss the classification, requirements, design considerations, and calculation methods for AC and DC distribution systems.

CO-PO-PSO Mapping:

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

Class: S.Y.B.Tech (Autonomous)

Course code & Course Title: Transformer & DC machine

Course Outcomes

	By the end of the course the student will be able to:
CO1	Demonstrate and Analyze the construction, working, performance, and equivalent circuits of single-phase transformers.
CO2	Analyze the performance parameters 3-phase transformers under normal operating conditions (Analyze)
CO3	Understand the construction and working of special type of Transformer (Understand).
CO4	Demonstrate and Analyze the construction, working principles, types, characteristics, and EMF equation of DC generators. (Understand Analyze).
CO5	Analyze the performance parameters of of D.C Motor (Analyze).
CO6	Understand the construction and working of of special DC Machines for application.

CO-PO-PSO Mapping

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

Class: S.Y.B.Tech (Autonomous)
Course code & Course Title: EED253_ Electrical Measurement and Instrumentation

Course Outcomes

	By the end of the course the student will be able to:
CO1	Define all the characteristics of measuring instruments.
CO2	Explain working of measuring instruments.
CO3	Apply the concept of bridges for measurement of electrical parameters.
CO4	Illustrate different instrument for measurement of power, current and voltage.
CO5	Describe transducers used in measuring instruments.
CO6	Use basic knowledge of display methods and its devices.

CO-PO-PSO Mapping

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO1	2											**1**	1		
CO2	2											**1**	1		
CO3	2	2										**1**	1		
CO4	1	2				**1**						**1**	1		
CO5	1											**1**	1		
Avg	**1.5**					**1**						**1**	**1**		

Class: S.Y.B.Tech (Autonomous)

Course code & Course Title: EED262_Renewable Energy Sources for Sustainable Development

Course Outcomes:

	By the end of the course the student will be able to:
CO1	Describe the renewable energy sources available at present
CO2	Explain the generation of power by photovoltaic system and measuring techniques of solar radiation
CO3	Demonstrate wind energy conversion system by various types of wind turbines.
CO4	Elaborate energy conversion techniques in case of biomass, tidal power, ocean thermal and hydrogen.
CO5	Illustrate the steps taken for sustainable energy future

CO-PO-PSO Mapping:

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

Class: S.Y.B.Tech (Autonomous)

Course code & Course Title: EED29E Programmable Logic Controller.

Course Outcomes

	By the end of the course the student will be able to:
CO1	Understand the basics of Programmable Logic Controller.
CO2	Explain the different components of Programmable logic controller
CO3	Illustrate different programming examples through ladder logic.
CO4	Analyze different application program using Programmable logic controller
CO5	Implement HMI and Industry standard

CO-PO Mapping

COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	2											1
CO2	2											1
CO3	1	2	2		2							1
CO4		2	1									
CO5					2							1
CO6					1							1

CO-PSO Mapping

COs	**PSO I**	**PSO II**	**PSO III**
CO1	2	1	
CO2		1	
CO3		1	1
CO4	1	2	
CO5	1		
CO6		1	