ACADEMIC YEAR 2020-21 (ODD SEMESTER)

COURSE OUTCOMES OF ALL THE COURSES OFFERED IN EEE I SEMESTER

Course Code	Course Name	L	T	P	C
EEE101	Elements of Electrical Engineering	3	0	0	3

Course Outcomes: On successful completion of the course the students shall be able to:

1) Explain the basic electrical parameters of electrical circuits excited by D.C. & A.C. Sources.
2) Describe the principle of operation & applications of AC & DC Machines.
3) Explain various types of Measuring Instruments used in Electrical Engineering.
4) Outline different aspects of Electrical Wiring and safety.

COURSE OUTCOMES OF ALL THE COURSES OFFERED IN EEE III SEMESTER

Course Code	Course Name	L	T	P	C
MAT 107	Transform Techniques, Partial Differential Equations and Probability	3	1	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) Apply Laplace transform and inverse Laplace transform technique to solve differential equations.
2) Express the continuous functions in terms of Fourier transform.
3) Employ z-transform technique to solve difference equations.
4) Construct a variety of partial differential equations and solve problems involving heat transfer and wave forms by the method of separation of variables
5) Fit various types of curves to the experimental data and Formulate solutions for engineering problems involving probability

Course Code	Course Name	L	T	P	C
ECE 201	Analog Electronics	4	0	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) Discuss various fundamental parameters of semiconductor devices, diode, clipper, clamper etc.
2) Summarize different biasing circuit configurations and amplifiers using BJTs.
3) Explain various types, characteristics & modes of FETs.
4) Summarize the working of feedback amplifiers and Oscillators.

Course Code	Course Name	L	T	P	C
ECE 202	Signals and Systems	3	1	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) Identify various types of signals and systems.
2) Estimate spectral analysis of signals using Fourier series.
3) Summarize Fourier transform & Laplace transform.
4) Summarize Z Transform & DTFT.

Course Code	Course Name	L	T	P	C
ECE 220	Digital Electronics	4	0	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) Describe the concepts of number systems, Boolean algebra and logic gates.
2) Apply minimization techniques to simplify Boolean expressions.
3) Illustrate the Combinational circuits for a given logic
4) Illustrate the Sequential and programmable logic circuits

Course Code	Course Name	L	T	P	C
ECE 251	Analog Electronics Lab	0	0	2	1

Course Outcomes: On successful completion of the course the students shall be able to:

1) Compute the parameters from the characteristics of P-N junction and Zener diode.
2) Demonstrate various wave shaping circuits using diodes.
3) Show the operation of BJT amplifier in CE configuration.
4) Demonstrate various types of Oscillators with BJT.

Course Code	Course Name	L	T	P	C
ECE 264	Digital Electronics Lab	0	0	2	1

Course Outcomes: On successful completion of the course the students shall be able to:

1) Implement Boolean expressions using logic gates.
2) Demonstrate the operations of various combinational logic circuits.
3) Apply implementation techniques for sequential logic circuits.

Course Code	Course Name	L	T	P	C
ECE 253	Signals and Systems with MATLAB	0	0	2	1

Course Outcomes: On successful completion of the course the students shall be able to:

1) Familiarize the MATLAB environment, enter commands, perform calculations, visualize matrix data and customize plots.
2) Generating different types of signals.
3) Performing various operations on Signals and Systems
4) Visualizing the spectral Analysis of signals using FT and LT

Course Code	Course Name	L	T	P	C
EEE 219	Network Theory	3	0	0	3

Course Outcomes: On successful completion of the course the students shall be able to:

1) Explain various network reduction techniques.
2) State various network theorems.
3) Explain Superposition theorem, Thevenin's theorem and Maximum power transfer theorem.
4) Discuss the behavior of RL and RC circuits for DC and AC excitation.
5) Discuss the parameters of two port network and relation between voltage, current and power relations in poly phase circuits.

Course Code	Course Name	L	T	P	C
PPS 107	Design Thinking and Team Building	0	0	2	1

Course Outcomes: On successful completion of the course the students shall be able to:

1) Demonstrate problem solving capabilities under various circumstances
2) Develop out of the box thinking, brainstorming to resolve problems
3) Understand different techniques of problem solving
4) Demonstrate strong abilities of working in teams in a professional manner
5) Understand the basics of Root Cause Analysis
6) Demonstrate the basic principles of Design Thinking in action

COURSE OUTCOMES OF ALL THE COURSES OFFERED IN EEE V SEMESTER

Course Code	Course Name	L	T	P	C
EEE 205	Control Systems	3	1	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) Describe the transfer function for a variety of Electrical, Mechanical, Electromechanical systems using Block diagram algebra and Signal Flow graphs
2) Summarize the time domain specifications for various test input signals and stability conditions based on zeros and poles of transfer function.
3) Explain the system stability criterion in frequency domain using Bode plots and Nyquist plots.
4) Identify the need of compensation and representation of State variable model.

Course Code	Course Name	L	T	P	C
EEE 209	Electrical and Electronic Measurements and Instrumentation	4	0	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) Discuss various errors and measuring quantities
2) Explain the working and characteristics of Electromechanical Instruments
3) Explain the working of Analog, Digital Instruments and Instrument Transformers.
4) Discuss various types of Transducers, Function Generator, Wave analyzer and Bridges

Course Code	Course Name	L	T	P	C
EEE 257	Electrical and Electronic Measurements and Instrumentation Lab	0	0	2	1

Course Outcomes: On successful completion of the course the students shall be able to:

1) Identify Signals generated from various types of sensors and transducers.
2) Analyze data using NI Lab-VIEW.
3) Apply various signal analysis operations.
4) Interpret real time data for various analog circuits
5) Calculate the unknown parameters using bridge circuits.

Course Code	Course Name	L	T	P	C
EEE 258	Electrical Machines Lab-II	0	0	2	1

Course Outcomes: On successful completion of the course the students shall be able to:

1) Determine the equivalent circuit parameters and performance characteristics of Transformer and Induction motor by conducting open circuit and short circuit tests.
2) Estimate the performance characteristics of Transformer and Induction motor by conducting load test.
3) Implement Scott connection of transformer and predict performance of transformer by conducting Sumpner's test.
4) Execute parallel operation of Transformers.
5) Demonstrate synchronization of alternators to bus bars.

Course Code	Course Name	L	T	P	C
EEE 310	Electrical Power Generation (DE)	3	0	0	3

Course Outcomes: On successful completion of the course the students shall be able to:

1) Describe the working of hydroelectric, Thermal, Nuclear, Wind, Solar power plants.
2) Summarize the economic aspects of power system operation and its effects.
3) Explain the importance of power factor improvement.
4) Classify various substations and identify the substation equipment's.

Course Code	Course Name	L	T	P	C
EEE 210	Electrical Machines-II	4	0	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) Discuss equivalent circuit and phasor diagram of transformers.
2) Explain the performance characteristics of single phase transformer.
3) Discuss equivalent circuit and phasor diagram of Induction Motor.
4) Explain the performance characteristics of three phase Induction motor.

Course Code	Course Name	L	T	P	C
EEE 263	Computer Aided Design for Electric Machine Winding	0	0	2	1

Course Outcomes: On successful completion of the course the students shall be able to:

1) Discuss the terminology and types of DC Machine armature windings.
2) Develop armature winding diagram for DC Machine.
3) Discuss the terminology and types of AC Machine armature windings.
4) Develop armature winding diagram for AC Machine.

COURSE OUTCOMES OF ALL THE COURSES OFFERED IN EEE VII SEMESTER

Course Code	Course Name	L	T	P	C
EEE 223	SMART GRID TECHNOLOGY	3	0	0	3

Course Outcomes: On successful completion of the course the students shall be able to:

1) Relate the concepts of traditional grid to Smart Grid.
2) Discuss the aspects of communication and information technologies in Smart grid and smart Metering.
3) Discuss the components of modern substation and Distribution management system
4) Distinguish different types of Energy storage Technologies in Smart Grid.

Course Code	Course Name	L	T	P	C
EEE 318	Distributed Generation and Micro-grid	3	0	0	3

Course Outcomes: On successful completion of the course the students shall be able to:

1) Explain the functioning of various energy sources for distributed power generation
2) Explain the impact of grid integration and control aspects of DGs
3) Describe the technical impacts of DGs in power systems
4) Discuss about micro-grid taking into consideration the planning and operational issues of the DGs to be connected in the system.

Course Code	Course Name	L	T	P	C
EEE 215	Power System Analysis	4	0	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) To development the impedance diagram (p.u) and formation of Y bus
2) To study the different load flow methods.
3) To study the concept of the Z bus building algorithm.
4) To study short circuit calculation for symmetrical faults and to study the effect of unsymmetrical faults and their effects.
5) To study the rotor angle stability of power systems.

Course Code	Course Name	L	T	P	C
EEE 218	Switchgear and Protection	4	0	0	4

Course Outcomes: On successful completion of the course the students shall be able to:

1) Describe the importance of protection in power system.
2) Explain the operation of fuses and switches in power system protection.
3) Describe various types of circuit breakers and their mechanism of operation.
4) Discuss the principles of protective relaying in conventional and modern relays.
5) Recognize various protection schemes.

Course Code	Course Name	L	T	P	C
EEE 262	POWER SYSTEM SIMULATION LAB	0	0	2	1

Course Outcomes: On successful completion of the course the students shall be able to:

1) Develop a program in MATLAB/ Mi-Power to assess the Y_{Bus}, and Z_{Bus} of the given power system network.
2) Solve the power flow problem for the given power system network by using the Mi-Power software package.
3) Demonstrate the fault analysis for the given power system network by using Mi-Power software package.
4) Demonstrate the stability analysis for the given power system network by using Mi-Power software package.
5) Determine the economic load dispatch for the given power system.

Course Code	Course Name	L	T	P	C
EEE 304	Electrical Drives	3	0	0	3

Course Outcomes: On successful completion of the course the students shall be able to:

1) Explain the dynamics of Electric Drives and multi-quadrant operation
2) Select the suitable power converter in control of d.c drive systems.
3) Discuss the performance of an induction motor drives
4) Explain the concept of controlling synchronous motor drive
5) Choose the suitable Electric Drives for various industrial applications