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<<Course Outcomes – EVEN Semester 2020-21>>

S.No	Semester	Theory/Practical	Course Code / Course Name
1.	4	Theory	MA8491- Numerical Methods
2.	4	Theory	EI8451- Electrical Machines
3.	4	Theory	EI8452- Industrial Instrumentation - I
4.	4	Theory	EE8451- Linear Integrated Circuits and Applications
5.	4	Theory	IC8451- Control Systems
6.	4	Theory	EC8395- Communication Engineering
7.	4	Practical	EI8461- Devices and Machines Laboratory
8.	4	Practical	EE8461- Linear and Digital Integrated Circuits Laboratory
9.	6	Theory	EI8651-Logic and Distributed Control System
10.	6	Theory	EI8691-Computer Control of Processes
11.	6	Theory	CS8391-Data Structures
12.	6	Theory	EI8692-Electronic Instrumentation
13.	6	Theory	EI8074-Computer Networks
14.	6	Theory	EE8071-Applied Soft Computing
15.	6	Practical	CS8381-Data Structures Laboratory
16.	6	Practical	EI8661-Process Control Laboratory
17.	6	Practical	HS8581-Professional Communication
18.	8	Theory	EI8073-Biomedical Instrumentation
19.	8	Theory	EI8079-Robotics and Automation
20.	8	Practical	EI8811-Project Work

FOURTH SEMESTER

MA8491- Numerical Methods

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Apply the concepts of algebraic and transcendental equations
CO2	Evaluate the eigenvalues of a matrix numerically
CO3	Construct an approximate interpolating polynomials for equal and unequal intervals.
CO4	Apply the numerical techniques of differentiation and integration for engineering problems.
CO5	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.
CO6	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.

EI8451- Electrical Machines

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the working principles of DC machines as Generator and Motor, types, determination of their no-load/load characteristics, starting and methods of speed control of motors.
CO2	Acquire the basic knowledge of construction, working and operation of transformer
CO3	Analyse the construction and working of Synchronous machines
CO4	Understand the construction working starting and speed control of three phase induction motor
CO5	Understand the principle of operation of Single Induction machines

EI8452- Industrial Instrumentation – I

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Introduce the measurement techniques of force, torque and speed
CO2	Introduce the measurement techniques of acceleration, Vibration and density
CO3	Introduce the measurement techniques of Viscosity, Humidity and moisture.
CO4	Introduce the temperature measurement techniques
CO5	Introduce the pressure measurement techniques

EE8451- Linear Integrated Circuits and Applications

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Outline the fabrication process of IC
CO2	Illustrate the ideal and non ideal characteristics of op-amp
CO3	Explain various applications of op-amp.
CO4	Design the different types of oscillators and ADC,DAC
CO5	Illustrate various application ICs
CO6	Explain the working of special function ICs.

IC8451- Control Systems

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Analyze electromechanical systems by mathematical modeling.
CO2	Illustrate the time response of first and second order systems using standard test signals
CO3	Examine the frequency-domain response of closed loop system
CO4	Identify a compensator system satisfying requirements
CO5	Develop system equations in state-variable form (state variable models)
CO6	Analyze a control theory applications to AC motors

EC8395- Communication Engineering

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Identify and Understand analog communication techniques
CO2	Discuss about pulse modulation techniques.
CO3	Identify and Understand digital communication techniques
CO4	Understand the various source coding techniques and apply the suitable error control codes
CO5	Understand about spread spectrum techniques.
CO6	Understand about Multiple access techniques.

EI8461- Devices and Machines Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Gain knowledge on the proper usage of various electronic equipment and simulation tools for design and analysis of electronic circuits.
CO2	Get hands-on experience in studying the characteristics of semiconductor devices.
CO3	Ability to analyze various electronic circuits such as voltage regulators, transistor amplifiers and oscillators.
CO4	Ability to make use of basic concepts to obtain the no load and load characteristics of D.C machines.
CO5	Analyze and draw conclusion from the characteristics obtained by conducting experiments on machines.
CO6	Ability to carry out the Experiments in batches to motivate the Team work.

EE8461- Linear and Digital Integrated Circuits Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Ability to understand and implement Boolean Functions.
CO2	Ability to understand the importance of code conversion
CO3	Ability to Design and implement 4-bit shift registers.
CO4	Ability to acquire knowledge on Application of Op-Amp
CO5	Ability to Design and implement counters using specific counter IC

SIXTH SEMESTER

EI8651-Logic and Distributed Control System

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand all the important components of PLC and SCADA, I/O modules and field devices of an industrial automation system.
CO2	Develop PLC program in using ladder diagram for industrial sequential applications.
CO3	Develop PLC program in using other languages for industrial sequential applications.
CO4	Understand all the important components of DCS and Smart field devices of an industrial automation system.
CO5	Explain the most appropriate automation technologies for a given application.
CO6	Outline the recent developments in industrial automation.

EI8691-Computer Control of Processes

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Ability to analyze the discrete time systems
CO2	Ability to build models from input-output data
CO3	Ability to design a digital controller
CO4	Ability to design multi-loop controller and multivariable controller for multi-variable systems.
CO5	Illustrate the multi-loop regulatory control techniques
CO6	Explain the different types of multivariable regulatory controllers

CS8391-Data Structures

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Implement abstract data types using arrays and linked list.
CO2	Apply the different linear data structures like stack and queue to various computing problems.
CO3	Implement different types of trees and apply them to problem solutions.
CO4	Discuss graph structure and understand various operations on graphs and their applicability.
CO5	Analyze the various sorting and searching algorithms.
CO6	Understand the hashing technique and hash functions.

EI8692-Electronic Instrumentation

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Demonstrate various electronic instruments for measurement of voltage
CO2	Illustrate various types of cathode ray oscilloscopes and their applications
CO3	Summarize different types of signal analysers
CO4	Explain different types of waveform generators
CO5	Examine a measurement system using VI programming techniques
CO6	Apply different types of modulation and multiplexing techniques in telemetry

EI8074-Computer Networks

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Ability to identify the components required to build different types of Networks

CO2	Analyze the required functionality at each layer for given application
CO3	Analyze the solution for each functionality at each layer
CO4	Trace the flow of information from one node to another node in the network
CO5	Analyze the congestion control and Avoidance
CO6	Understand the tradition application and web service

EE8071-Applied Soft Computing

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understanding and apply basic science ,circuit theory,Electromagnetic field theory control theory and Apply them to electrical engineering problem
CO2	Understand and apply computing platform and software for engineering problems

CS8381-Data Structures Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Write functions to implement linear and non-linear data structure operations
CO2	Suggest appropriate linear / non-linear data structure operations for solving a givenproblem
CO3	Appropriately use the linear / non-linear data structure operations for a given problem
CO4	Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval

EI8661-Process Control Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Ability to understand and analyze process control engineering problems.
CO2	Be able to build dynamic models using input – output data of a process
CO3	Ability to working with real time control loops(flow/level/temperature/pressure)
CO4	Get exposed to simulation tools such as MATLAB/LABVIEW/ASPEN
CO5	Ability to learn and implement simple adaptive and model based control schemes

HS8581-Professional Communication

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Make effective presentations
CO2	Participate confidently in Group Discussions
CO3	Attend job interviews and be successful in them
CO4	Develop adequate Soft Skills required for the workplace
CO5	Enhance the Employability and Career Skills

EIGHTH SEMESTER

EI8073-Biomedical Instrumentation

COs	Course Outcome: The students, after the completion of the course, are expected to
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CO1	Understand the philosophy of the heart, lung, blood circulation and respiration system.
CO2	Understanding to provide latest ideas on devices of non-electrical devices
CO3	Ability to gain knowledge on various sensing and measurement devices of electrical origin.
CO4	Ability to understand the analysis systems of various organ types
CO5	Ability to bring out the important and modern methods of imaging techniques and their analysis
CO6	Ability to explain the medical assistance/techniques, robotic and therapeutic equipments

EI8079-Robotics and Automation

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the evolution of robot technology and mathematically represent different types of robot
CO2	Get exposed to the case studies and design of robot machine interface.
CO3	Familiarize various control schemes of Robotics control

EI8811- Project Work

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Demonstrate a sound technical knowledge of their selected project topic
CO2	Identify the problem, formulation and solution
CO3	Design engineering solutions to complex problems utilizing a systems approach
CO4	Develop an engineering project
CO5	Demonstrate the knowledge, skills and attitudes of a professional engineer
CO6	Improve the managerial skills to meet the industry

