



R.M.K. ENGINEERING COLLEGE
RSM Nagar, Kavaraipettai – 601 206



Department of Electrical and Electronics Engineering

List of courses offered during 2019-20 (Odd Semester)

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1	3	Theory	MA8353 – Transforms and Partial Differential Equations
2	3	Theory	EE8351 - Digital Logic Circuits
3	3	Theory	EE8391 – Electromagnetic Theory
4	3	Theory	EE8301 – Electrical Machines-1
5	3	Theory	EC8353– Electron Devices and Circuits
6	3	Theory	ME8792 - Power Plant Engineering
7	3	Practical	EC8311- Electronics Laboratory
8	3	Practical	EE8311- Electrical Machines Laboratory – I
9	5	Theory	EE8501 – Power System Analysis
10	5	Theory	EE8551- Microprocessor And Microcontroller
11	5	Theory	EE 8591 – Digital Signal Processing
12	5	Theory	EE8552– Power Electronics
13	5	Theory	CS 8392 – Object Oriented Programming
14	5	Theory	OAN551- Sensors and Transducers
15	5	Practical	EE8511- Control and Instrumentation Laboratory
16	5	Practical	HS8581 - Professional Communication
17	5	Practical	CS8383- Object Oriented Programming Laboratory
18	7	Theory	EE6701 – High voltage engineering
19	7	Theory	EE6702 – Protection and Switchgear
20	7	Theory	EE6703– Special Electrical Machines
21	7	Theory	MG6851- Principles Of Management
22	7	Theory	EI6703 – Fiber Optics & Laser Instruments
23	7	Theory	EE 6008 –Microcontroller Based System Design
24	7	Practical	EE6711 - Power System Simulation Lab
25	7	Practical	EE6712- Comprehension Laboratory Lab

Course outcomes- 2019-2020 (odd semester)

Third Semester.

Course Code: MA8353	
Course Name: Transforms And Partial Differential Equations	
CO	Course outcome(CO) - Statements
CO – 1	Apply the solutions of partial differential equations
CO – 2	Utilize the Fourier series problems in current flow, sound waves
CO – 3	Find one dimensional wave equation and heat equations
CO – 4	Inference of Fourier transforms is in continuous time signals
CO – 5	Apply the Z transforms in discrete time signals
CO – 6	Summarize the physical problems of engineering.

Course Code:EE8351	
Course Name: Digital Logic Circuits	
CO	Course outcome(CO) - Statements
CO – 1	To study various number systems and simplify the logical expressions using Boolean functions
CO – 2	To study combinational circuits
CO – 3	To design various synchronous and asynchronous circuits.
CO – 4	To introduce asynchronous sequential circuits and PLDs
CO – 5	To introduce digital simulation for development of application oriented logic circuits.

Course Code: EC8353	
Course Name: Electron Devices And Circuits	
CO	Course outcome(CO) - Statements
CO – 1	Explain the structure, characteristics and biasing of various PN junction diodes and its applications.
CO – 2	Explain the structure, characteristics and biasing of various types of transistors, thyristors and IGBT.
CO – 3	Analyze the BJT amplifier circuits using small signal and high frequency model.
CO – 4	Analyze the FET amplifier circuits using small signal and high frequency model.

CO – 5	Explain the differential amplifier and types of power amplifier and derive its efficiency.
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Course Code: EE8301	
Course Name: Electrical Machines - 1	
CO	Course Outcome(CO) - Statement
CO – 1	To familiarize with Magnetic-circuit analysis and introduce magnetic materials
CO – 2	To understand Constructional details, the principle of operation, prediction of performance, the methods of testing the transformers and three phase transformer connections
CO – 3	To understand the Working principles of electrical machines using the concepts of electromechanical energy conversion principles and derive expressions for generated voltage and torque developed in all Electrical Machines.
CO – 4	To understand the Working principles of DC machines as Generator types, determination of their no-load/load characteristics, starting and methods of speed control of motors.
CO – 5	To study Various losses taking place in D.C. Motor and to study the different testing methods to arrive at their performance

Course Code:EE8391	
Course Name: Electromagnetic Theory	
CO	Course outcome(CO) - Statements
CO – 1	Interpret the coordinate systems used in electromagnetic theory
CO – 2	Explain the Electric and Magnetic field intensity for continuous charge distributions
CO – 3	Develop the expression for capacitance and inductance in the continuous charge distributions
CO – 4	Build the boundary conditions for electric and magnetic field intensity
CO – 5	Illustrate the generation of EMF in static and dynamic conditions
CO - 6	Identify the properties of electromagnetic wave propagation from Maxwell's equation.
CO – 6	To develop the ability to model and analyze electrical apparatus and their application to power system

CO	Course outcome(CO) - Statements
CO – 1	Explain the layout, construction and working of the components inside a thermal power plant
CO – 2	Explain the layout, construction and working of the components inside a Diesel, Gas and Combined cycle power plants
CO – 3	Explain the layout, construction and working of the components inside nuclear power plants.
CO – 4	Explain the layout, construction and working of the components inside Renewable energy power plants
CO – 5	Explain the applications of power plants while extend their knowledge to power plant economics and environmental hazards and estimate the costs of electrical energy

Laboratory

EC8311	Electronics Laboratory
CO	Course outcome(CO) - Statements
CO – 1	Explain the characteristics of semiconductor devices
CO – 2	Analyze astable and monostable multivibrators
CO – 3	Develop differential amplifiers using FET
CO – 4	Infer frequency and phase measurements using CRO
CO – 5	Construct RC, LC phase shift oscillators
CO – 6	Experiment with passive filters

Course code : EE8311	
Course Name: Electrical Machines Laboratory - I	
CO	Course outcome(CO) – Statements
CO – 1	Ability to understand and analyze DC Generator
CO – 2	Ability to understand and analyze DC Motor
CO – 3	Ability to understand and analyse Transformers.

Fifth Semester

Course Code: EE8501	
Course Name: Power System Analysis	
CO	Course Outcome (CO) - Statement
CO – 1	Ability to model the power system under steady state operating condition
CO – 2	Ability to understand and apply iterative techniques for power flow analysis
CO – 3	Ability to model and carry out balanced short circuit studies on power system
CO – 4	Ability to model and carry out unbalanced short circuit studies on power system
CO – 5	Ability to model and analyze stability problems in power system

Course Code: EE8551	
Course Name: Power Electronics	
CO	Course outcome(CO) - Statements
CO – 1	Summarize the fundamental concepts of power switching devices.
CO – 2	Analyze single phase power converter circuits and their application.
CO – 3	Analyze three phase power converter circuits and their application.
CO – 4	Analyze switching regulator circuits and their application.
CO – 5	Analyze various harmonic reduction techniques.
CO - 6	Develop skills to simulate converter circuits using simulation software.

Course Code: EE8551	
Course Name: Microprocessors and Microcontrollers	
CO	Course outcome(CO) - Statements
CO – 1	Explain the architecture and functionalities of 8085 Microprocessor.
CO – 2	Analyze Assembly level programming in real time applications using 8085.
CO – 3	Explain the architecture and functionalities of 8051 Microcontroller.

CO – 4	Configure the external peripherals interfacing with the 8085 microprocessor and 8051 microcontroller.
CO – 5	Develop skill in simple applications programming with 8051.
CO - 6	Compare the programming concepts of 8085 and 8051

Course Code: OAN551	
Course Name: Sensors & Transducers	
CO – 1	To understand the concepts of measurement technology
CO – 2	Expertise in various calibration techniques and signal types for sensors.
CO – 3	To learn the various sensors used to measure various physical parameters.
CO – 4	To learn the fundamentals of signal conditioning, data acquisition and communication systems used in mechatronics system development.
CO – 5	Study the basic principles of various smart sensors.
CO – 6	Implement the DAQ systems with different sensors for real time applications

Course Code:EE8591	
Course Name: Digital Signal Processing	
CO	Course outcome(CO) - Statements
CO – 1	Signals and systems & their mathematical representation
CO – 2	Discrete time systems.
CO – 3	Transformation techniques & their computation
CO – 4	Filters and their design for digital implementation.
CO – 5	Programmability digital signal processor & quantization effects

Course Code: CS8392	
Course Name: Object Oriented Programming	
CO	Course outcome(CO) - Statements
CO – 1	Develop Java programs using OOP principles
CO – 2	Develop Java programs using the concepts of inheritance and interfaces
CO – 3	Build Java applications using exceptions and I/O Streams
CO – 4	Develop Java applications with threads and generic classes
CO – 5	Develop interactive Java programs using swings

CO – 6	Develop an application based upon concepts of Java.
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Laboratory

Course Code:EE8511	
Course Name: Control and Instrumentation Laboratory	
CO	Course outcome(CO) - Statements
CO – 1	Ability to understand control theory and apply them to electrical engineering problems.
CO – 2	Ability to analyze the various types of converters
CO – 3	Ability to design compensators
CO – 4	Ability to understand the basic concepts of bridge networks
CO – 5	Ability to the basics of signal conditioning circuits
CO – 6	Ability to study the simulation packages.

Course Code:HS8581	
Course Name: Professional Communication	
CO	Course outcome(CO) - Statements
CO – 1	Enhance the Employability and Career Skills of students
CO – 2	Orient the students towards grooming as a professional
CO – 3	Make them Employability Graduates
CO – 4	Develop their confidence and help them attend interviews successfully.

Course Code:CS8383	
Course Name: Object Oriented Programming Lab	
CO	Course outcome(CO) - Statements
CO – 1	To build software development skills using java programming for real-world applications.
CO – 2	To understand and apply the concepts of classes, packages, interfaces, array list, exception handling and file processing.
CO – 3	To develop applications using generic programming and event handling.

Seventh Semester

Course code : EE6701	
Course Name: High voltage engineering	
CO	Course outcome(CO) - Statements
C401.1	Describe the causes of power systems over voltages
C401.2	Summarize the impact of over voltages on dielectrics
C401.3	Explain the breakdown mechanism of dielectrics
C401.4	Classify protection devices to prevent Flashovers
C401.5	Discuss the testing of power system apparatus
C401.6	Summarize the methods of HV measurements

Course code : EE6702	
Course Name: Protection and Switchgear	
CO	Course outcome(CO) - Statements
C402.1	Identify the faults in Power system
C402.2	Interpret the working of relays and their characteristics
C402.3	Explain the types of Apparatus protection
C402.4	Analyze the arcing phenomenon and interruption
C402.5	Explain the different Circuit Breakers
C402.6	Classify the testing of Circuit Breakers

Course code : EE6703 Course Name: Special Electrical Machines	
CO	Course outcome(CO) - Statements
C403.1	Explain the performance characteristics of synchronous reluctance motors.
C403.2	Classify the excitation modes of stepping motor
C403.3	Construct the power converter circuits for Switched reluctance motor
C403.4	Analyze the magnetic characteristics of brushless D.C motor
C403.5	Compare the control methods of permanent magnet synchronous motor
C403.6	Analyze the logical sequence operation of special machines by using Software program.

Course code: MG6851	
Course Name: Principles of Management	
CO	Course outcome(CO) - Statements
C404.1	Define the concept of management
C404.2	Identify current trends and issues in management
C404.3	Explain the importance of planning and objective setting
C404.4	Identify the authority and responsibility among people
C404.5	Apply leadership and motivation theories
C404.6	Examine qualitative and quantitative information to control methods

Course code : EI6703	
Course Name: Fiber Optics & Laser Instruments	
CO	Course outcome(CO) - Statements
C405.1	Compare types of Optical fibers
C405.2	Identify optical sources and Detectors
C405.3	Relate the industrial applications of optical fibers
C405.4	Summarize the LASER types
C405.5	Relate the industrial applications of LASER
C405.6	Infer holography and medical applications of LASER

Course code : EE6008	
Course Name: Microcontroller Based System Design	
CO	Course outcome(CO) - Statements
C405.1	Impart knowledge about Architecture of PIC microcontroller
C405.2	Interrupts and timers
C405.3	Peripheral devices for data communication and transfer
C405.4	Functional blocks of ARM processor
C405.5	Architecture of ARM processors
C405.6	Design and programming of microcontroller based system design-case studies and exercises

Laboratory

Course code : EE6711	
Course Name: Power System Simulation lab	
CO	Course outcome(CO) - Statements
C407.1	Model the Transmission line of power system
C407.2	Develop Bus Impedance and Admittance matrices for a network
C407.3	Analysis of Load flow by numerical methods
C407.4	Determine the fault current for the N bus system
C407.5	Examine the stability level of Single and Multi machine system
C407.6	Analyze the load frequency dynamics of multi area system

Course code : EE6712	
Course Name: Comprehension Laboratory	
CO	Course outcome(CO) - Statements
C408.1	Explain Engineering fundamentals
C408.2	Apply mathematics to engineering problem
C408.3	Apply Engineering fundamentals to complex circuits
C408.4	Take part in discussion as a leader in diverse teams
C408.5	Extend knowledge on communication and presentation skills
C408.6	Develop managerial skills to establish start ups