R.M.K. Engineering College

RSM Nagar, Kavaraipettai – 601 206

Department of Electronics and Instrumentation Engineering

Course Outcomes – ODD Semester 2021-22

S.No	Semester	Theory/Practical	Course Code / Course Name
1	3	Theory	20MA301-Transforms and Partial Differential Equations
2	3	Theory	20EI301-Instrument Transducers
3	3	Theory	20EI302-Electrical and Electronic Measurements
4	3	Theory	20EI303-Electrical Machines
5	3	Theory	20EC302-Electronic Circuits
6	3	Theory	20CS302-Object Oriented Programming
7	3	Practical	20EI311-Devices and Machines lab
8	3	Practical	20EI312-Mini project
9	3	Practical	20CS311-Object Oriented Programming Laboratory
10	3	Practical	20CS313-Aptitude & Coding Skills -I
11	5	Theory	EI8551- Analytical Instruments
12	5	Theory	EI8552- Industrial Instrumentation - II
13	5	Theory	EI8553- Process Control
14	5	Theory	EE8551- Microprocessors and Microcontrollers
15	5	Theory	EE8591- Digital Signal Processing
16	5	Theory	OCE551- Air Pollution and Control Engineering
17	5	Practical	EI8561- Industrial Instrumentation Laboratory
18	5	Practical	EE8681- Microprocessors and Microcontrollers Laboratory
19	7	Theory	EI8751- Industrial Data Networks
20	7	Theory	EE8691- Embedded Systems
21	7	Theory	EC8093- Digital Image Processing
22	7	Theory	EI8075-Fibre Optics and Laser Instrumentation
23	7	Theory	GE8077-Total Quality Management
24	7	Theory	OCS752 -Introduction To C Programming
25	7	Practical	EI8761-Industrial Automation Laboratory
26	7	Practical	EI8762-Instrumentation System Design Laboratory

THIRD SEMESTER

20MA301- Transforms and Partial Differential Equations

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Employ the Fourier series concept in Engineering Problems
CO2	Identify the solution of Fourier transform in continuous time signals.
CO3	Elucidate the difference equation using Z-transform.
CO4	Compute the solutions of the partial differential equation.
CO5	Utilize the Fourier series for heat and wave equations.

20EI301-Instrument Transducers

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Understand the physical quantities for measurement
CO2	Compare the mathematical model of Zero, First and Second order transducer.
CO3	Explain the construction and operation of variable resistance transducer..
CO4	Describe the knowledge of inductance transducer.
CO5	Illustrate the knowledge of capacitance transducers.
CO6	Differentiate the construction and operation of other transducers and sensors.

20EI302 - Electrical and Electronic Measurement

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Compare various measuring instruments and extension of range of instruments.
CO2	Construct the wattmeter and energy meter to measure power and energy.
CO3	Design DC and AC bridges for the measurement of R, L, C and Frequency measurement.
CO4	Classify the kind of instrument suitable for typical electronic measurements.
CO5	Compare various signal generators and waveform analyzers.
CO6	Minimize the errors occurring in the instrument.

20EC302 - Electronic Circuits

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Analyze biasing of BJT and BJT amplifiers
CO2	Analyze biasing of MOSFET and MOSFET amplifiers.
CO3	Compute the frequency response of amplifiers.
CO4	Acquire the knowledge of feedback amplifiers.
CO5	Acquire the knowledge of oscillators.
CO6	Illustrate the operation of power amplifiers.

CS302-Object Oriented Programming

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Develop Java programs using OOP principles
CO2	Develop Java programs using the concepts of inheritance and interfaces
CO3	Build Java applications using exceptions and I/O streams
CO4	Develop Java applications with threads and generics classes
CO5	Develop interactive Java programs using swings
CO6	Develop an application based upon the concepts of Java.

20EI303- Electrical Machines

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Identify the starting and control techniques of DC Machine.
CO2	Solve the performance calculation of Transformer
CO3	Compare the starting and control techniques of 3 phase induction motor
CO4	Explain the performance characteristic of Synchronous Machines
CO5	Interpret the performance characteristic of Special motors
CO6	Design Electrical Machines for Industrial Drive Applications

20CS311-- Object Oriented Programming Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Develop and implement Java programs for simple applications that make use of classes, packages and interfaces.
CO2	Develop and implement Java programs with array list
CO3	Develop and implement Java programs with exception handling and multithreading.
CO4	Design applications using file processing and generic programming
CO5	Design applications using event handling.
CO6	

20EI311-Devices and Machines lab

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Differentiate the usage of various electronic equipment and simulation tools for design and analysis of electronic circuits.
CO2	Demonstrate the hands-on experience in studying the characteristics of semiconductor devices.
CO3	Analyze various electronic circuits such as voltage regulators, transistor amplifiers and oscillators.
CO4	Interpret the various speed control techniques of DC machines.
CO5	Compute the equivalent circuit parameters of single-phase transformer under short circuit test and No-load test
CO6	Illustrate the characteristics of transformer and Induction motor under load test

FIFTH SEMESTER

EI8551- Analytical Instruments

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Ability to understand the fundamental principles of selective analytical instruments used in medical diagnosis, quality assurance & control and research studies.
CO2	Ability to assess and suggest a suitable analytical method for a specific purpose, and evaluate sensitivity, important sources of interferences and errors, and also suggest alternative analytical methods for quality assurance.
CO3	Ability to critically evaluate the strengths and limitations of the various instrumental methods.
CO4	Ability to develop critical thinking for interpreting analytical data.
CO5	Ability to understand the working principle, types and applications of NMR.
CO6	Ability to understand the working principle, types and applications of Mass spectroscopy

EI8552- Industrial Instrumentation - II

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Demonstrate variable head type flow meters
CO2	Illustrate quantity meters, air flow meters and mass flow meters
CO3	Explain electrical type flow meters
CO4	Identify techniques for level measurement
CO5	Explain various types of transmitters
CO6	Analyze a suitable instrumentation system for various industries

EI8553- Process Control

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Ability to understand technical terms and nomenclature associated with Process control domain.
CO2	Ability to build models using first principles approach as well as analyze models.
CO3	Ability to understand final control elements
CO4	Ability to Design, tune and implement PID Controllers to achieve desired performance for various processes

CO5	Ability to Analyze Systems and design & implement control Schemes for various Processes.
CO6	Ability to Identify, formulate and solve problems in the Process Control Domain

EE8551- Microprocessors and Microcontrollers

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Outline the functional blocks of 8085 microprocessor
CO2	Develop an assembly language program for 8085 microprocessor
CO3	Explain the architecture of 8051 microcontroller
CO4	Interpret the interrupt structure of 8085 and 8051
CO5	Illustrate how the different peripherals are interfaced with Microprocessor and microcontroller
CO6	Develop a program for automated system using 8051

EE8591- Digital Signal Processing

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Classify the different types of signals and systems
CO2	Apply z-transform and inverse Z transform in discrete systems
CO3	Explain the sampling process of continuous time signal.
CO4	Apply Radix-2 (DIT) and (DIF) FFT Algorithm using Discrete Fourier Transform
CO5	Compare (IIR) filters and (FIR) filters.
CO6	Explain various architectures of Digital signal processors

OCE551- Air Pollution and Control Engineering

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Understand the atmospheric process and pollutant transport mechanism
CO2	Apply modelling techniques and to determine the fate of air pollutant with respect to time and space
CO3	Prevent and control air pollution by suitable air pollution control measures
CO4	Control and Monitoring of gaseous contaminants in air pollution
CO5	Prevent, control and measure of Indoor air quality management

EI8561- Industrial Instrumentation Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Ability to experimentally measure industrial process parameters such as flow and level,
CO2	Ability to experimentally measure industrial process parameters such as temperature and pressure
CO3	Ability to experimentally measure industrial process parameters such as viscosity.
CO4	Ability to measure and analyze pH, conductivity
CO5	Ability to measure and analyze UV absorbance and transmittance.
CO6	Ability to measure and analyze physiological parameters such as BP, ECG and pulse rate.

EE8681- Microprocessors and Microcontrollers Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Ability to understand and apply computing platform and software for engineering problems.
CO2	Ability to programming logics for code conversion
CO3	Ability to acquire knowledge on A/D and D/A.
CO4	Ability to understand basics of serial communication.
CO5	Ability to understand and impart knowledge in DC and AC motor interfacing.
CO6	Ability to understand basics of software simulators.

SEVENTH SEMESTER

EI8751-Industrial Data Networks

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Explain the basic concepts of data networks and communication.
CO2	Explain and relate the functions of networking and internetworking devices and choose the appropriate one depending on application.
CO3	Compare the characteristics of various communication buses like Fieldbus, and Profibus and select the appropriate one depending on application.
CO4	Explain the various communication protocols available like HART, MODBUS in data communication and select the appropriate one depending on application.
CO5	Explain the various Industrial Ethernets.
CO6	Explain the basic concepts of wireless communication.

EE8691- Embedded Systems

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Discuss the essentials of function and Blocks of Embedded system
CO2	Explain the different communication network strategies of embedded systems
CO3	Demonstrate the different phases of embedded product development life cycle (EDLC)
CO4	Analyze the issues, modeling and computational models in Embedded design
CO5	Explain the basic concepts and compare the features of real time operating systems (RTOS)
CO6	Utilize the concepts of Embedded Systems in real time applications

EC8093- Digital Image Processing

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D-transforms.
CO2	Operate on images using the techniques of smoothing, sharpening and enhancement.
CO3	Understand the restoration concepts and filtering techniques.
CO4	Learn the basics of segmentation features extraction.
CO5	Learn the basics of compression methods for color models.

CO6	Learn the recognition methods.

EI8075-Fibre Optics and Laser Instrumentation

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Classify the types of optical fibers and discuss the various losses and dispersion involved in optical fibers and discuss about various optical sources, optical detectors, optical connectors and splices.
CO2	Illustrate the various applications of lasers in industries.
CO3	Explain the characteristics and types of lasers.
CO4	Develop a thorough knowledge about applications of lasers in industries and material processing.
CO5	Explain the concept of holography using lasers.
CO6	Interpret the applications of lasers in medical field.

GE8077-Total Quality Management

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Understand the quality philosophies and customer focused managerial system
CO2	Summarize the quality management principles
CO3	Apply six sigma concept in manufacturing and service sector
CO4	Determine the tools and techniques for quality improvement.
CO5	Analyze standards and auditing system on implementation of TQM.
CO6	Analyze standards for the operation of EMS.

OCS752 -INTRODUCTION TO C PROGRAMMING

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Develop algorithmic solutions to simple computational problems using basic constructs
CO2	Develop simple applications in C using Control Constructs
CO3	Design and implement applications using arrays
CO4	Represent data using string and string operations
CO5	Decompose a C program into functions and pointers

CO6	Represent and write program using structure and union

EI8761-Industrial Automation Laboratory

COs	**Course Outcome: The students, after the completion of the course, are expected to ….**
CO1	Understanding programming of PLC
CO2	Understanding programming of SCADA
CO3	Understanding programming of DCS
CO4	Working with Industrial automation system
CO5	Design and implement control schemes in PLC and DCS
CO6	Interface with PLC and DCS

EI8762-Instrumentation System Design Laboratory

COs	**Course Outcome: The students, after the completion of the course, are expected to ….**
CO1	Design of signal conditioning systems
CO2	Design of Instrumentation systems
CO3	Design controller
CO4	Design control valve and Transmitter
CO5	Design and draw piping diagram for Industrial application projects
CO6	Design of Multi channel data acquisition and transmitter

COURSE OUTCOMES – EVEN SEMESTER 2021-22

S.No	Semester	Theory/Practical	Course Code / Course Name
1.	4	Theory	20MA403-Numerical Methods
2.	4	Theory	20EI401-Digital Principles and System Design
3.	4	Theory	20EI402-Industrial Instrumentation
4.	4	Theory	20EI403-Control System Design
5.	4	Theory	20EE304-Linear Integrated Circuits
6.	4	Theory	20GE301-Universal Human Values II- Understanding Harmony
7.	4	Practical	20EI411-Linear and Digital Integrated Circuits Lab
8.	4	Practical	20EI412-Measurements and Transducers Lab
9.	4	Practical	20EC312-Foundation Lab on Internet of Things
10.	4	Practical	20CS414-Aptitude & Coding Skills-II
11.	6	Theory	EI8651-Logic and Distributed Control System
12.	6	Theory	EI8691-Computer Control of Processes
13.	6	Theory	CS8391-Data Structures
14.	6	Theory	EI8692-Electronic Instrumentation
15.	6	Theory	EI8077-Power Electronics and Drives
16.	6	Theory	EI8072-Advanced Instrumentation Systems
17.	6	Practical	CS8381-Data Structures Laboratory
18.	6	Practical	EI8661-Process Control Laboratory
19.	6	Practical	HS8581-Professional Communication
20.	8	Theory	MG8591-Principles of Management
21.	8	Theory	EI8078-Project Management and Finance
22.	8	Practical	EI8811-Project Work

FOURTH SEMESTER

20MA403-Numerical Methods

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Compute the solutions of algebraic, transcendental and the system of equations
CO2	Implement the numerical techniques of interpolation in equal and unequal intervals
CO3	Apply the numerical techniques of differentiation and integration for engineering problems
CO4	Employ the various techniques and methods for solving first and second order ordinary differential equations
CO5	Solve the partial differential equations with initial and boundary conditions by using certain techniques with engineering applications

20EI401-Digital Principles and System Design

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Design Digital Circuits using simplified Boolean functions
CO2	Analyze and Design Combinational Circuits
CO3	Analyze and Design Synchronous Sequential Circuits
CO4	Analyze and Design Asynchronous Sequential Circuits
CO5	Implement designs using Programmable Logic Devices
CO6	Write HDL code for Combinational and Sequential Circuits

20EI402-Industrial Instrumentation

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Differentiate the construction and working of various temperature measurement devices.
CO2	Explain the construction and working of instruments used for the measurement of Pressure.
CO3	Describe the construction and working of instruments used for the measurement of level and humidity.
CO4	Study the different flow measurement techniques used in process industries.
CO5	Describe the construction and working of instruments used for the measurement of speed, density and viscosity.
CO6	Identify a suitable measuring instrument for an application.

20EI403-Control System Design

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Develop various representations of system based on the first principles approach.
CO2	Determine steady state error and error coefficients for various input signals.
CO3	Construct and interpret root locus, Bode plot, polar plot and Nyquist plot and infer the time domain and frequency domain specifications from the response.
CO4	Analyze and infer the stability of systems in time and frequency domain.
CO5	Design and implement lag, lead, lag-lead compensators to meet the time and frequency domain specifications.
CO6	Determine the system equations in state variable form

20EE304-Linear Integrated Circuits

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Demonstrate the fabrication of IC's.
CO2	Analyze the performance characteristics of Op-Amp.
CO3	Design Op-Amp based circuits for engineering applications.
CO4	Classify and comprehend the working principle of data converters.
CO5	Illustrate the function of application specific IC’s such as VCO, PLL and its applications.
CO6	Classify the different voltage regulators using Op-Amp

20GE301-Universal Human Values II- Understanding Harmony

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	would become more aware of themselves, and their surroundings (family, society, nature);
CO2	would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
CO3	would have better critical ability.
CO4	Would become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
CO5	would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

20EI411-Linear and Digital Integrated Circuits Lab

COs	Course Outcome: On successful completion of this course, the student will be able to
CO1	Implement Boolean Functions.
CO2	Interpret the importance of code conversion.
CO3	Execute 4-bit shift registers.
CO4	Design and implement counters using specific counter IC.
CO5	Acquire knowledge on Application of OPAMP and Regulators.
CO6	Construct Voltage frequency converters and Regulators.

20EI412-Measurements and Transducers Lab

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Understand the concepts of measurement, error and uncertainty.
CO2	Understand the static and dynamic characteristics of measuring instruments.
CO3	Gain knowledge about the principle of operation and characteristics of different types of resistance, capacitance and inductance transducers.
CO4	Acquire knowledge of analyzing different stages of signal conditioning units.
CO5	Ability to interpret the results and draw meaningful conclusions.
CO6	Ability to work as a member of a team while carrying out experiments.

20EC312-Foundation Lab on Internet of Things

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Acquire knowledge on Internet of Things and its hardware and software components.
CO2	Demonstrate to interface I/O devices, sensors & communication modules.
CO3	Analyze by connecting and exchanging data with other devices and systems over the Internet.
CO4	Analyze to remotely monitor data and control devices.
CO5	Develop real life IoT based projects.
CO6	Integrate as a member in a group.

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

EI8077-Power Electronics and Drives

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Explain various devices and their structure, operating characteristics in the field of electronics.
CO2	Classify, analyze and design, Control rectifier, chopper and inverter.
CO3	Apply power electronic circuits for the control of popular applications.
CO4	Analyse the classification of Inverters
CO5	Apply Converter techniques in Electric Drives
CO6	Exposure to design and analyze PE circuits using simulation software

EI8072-Advanced Instrumentation Systems

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Understand the instrumentation behind flow, level, temperature and pressure measurement
CO2	Acquire basic knowledge on the various types of analyzers used in typical industries.
CO3	Understand the role of Safety instrumented system in the industry.
CO4	Explain Standards for applying Instrumentation in Hazards Locations.
CO5	Design, develop, and interpret the documents used to define instruments and control Systems for a typical project, including P&IDs, loop diagrams, specification forms.

CO6	Design, develop, and interpret the documents used to define instruments and control Systems for a typical project, including Instrument lists, logic diagrams, installation details, and location plans

MG8591-Principles of Management

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Describe the historical evolution of management theories for business organizations
CO2	Demonstrate the use of planning tools for strategic management
CO3	Identify the most appropriate organizational structure
CO4	Discuss HR strategies for planning, recruiting and training employees
CO5	Explain the theories of motivation and leadership to manage a group
CO6	Summarize the controlling methods and tools to increase productivity of the Organization

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

MG8591-Principles of Management

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Describe the historical evolution of management theories for business organizations
CO2	Demonstrate the use of planning tools for strategic management
CO3	Identify the most appropriate organizational structure
CO4	Discuss HR strategies for planning, recruiting and training employees
CO5	Explain the theories of motivation and leadership to manage a group
CO6	Summarize the controlling methods and tools to increase productivity of the Organization

EI8078-Project Management and Finance

COs	Course Outcome: The students, after the completion of the course, are expected to ….
CO1	Study the current market trends and choose projects.
CO2	Prepare project feasibility reports.
CO3	Implement the project effectively meeting government norms and conditions.
CO4	Understand the role and responsibility of the Professional Engineer.
CO5	Assess social, health, safety issues based on the reasoning received from the contextual knowledge.
CO6	Choose projects which benefit the society and organization.

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