3.1.3 Program level Course- PO/PSOs matrix of ALL courses including first year courses

Programme:B.E. Instrumentation and Control Engineering

Course OutComes for the Academic Year : 2020-21

Title:COMMUNICATIVE ENGLISH,Subject Code:HS8151 NBA Code for the Subject :C101 ,Semester : 1 [20-21ODD]Target :65 Credits:4	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C101.1	To enable the learners develop their basic communication skills in English based on LSRW skills
C101.2	To inculcate the habit of reading and writing leading to effective and efficient communication
C101.3	Read articles of general kind in magazines and news papers
C101.4	Participate effectively in informal conversations; introduce themselves and their friends and express opinion in English
C101.5	Comprehend conversations and short talks delivered in English
C101.6	Write short essays of general kind and personal letters and e-mails in English

Title:ENGINEERING MATHEMATICS - I,Subject Code:MA8151 NBA Code for the Subject :C102 ,Semester : 1 [20-21ODD]Target :60 Credits:4	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C102.1	Understand the limit, continuity and derivative of the functions. Solve various functions and its maxima /minima using differentiation rules.
C102.2	Apply the total and partial derivatives in Taylor series expansion of functions and the extremum of functions.
C102.3	Evaluate the integrals both by using Riemann sums and by using the Fundamental theorem of Calculus. Evaluate integrals using various techniques of integration.
C102.4	Understand the concepts of double integration and determine the area using integration. Also understands the concepts of the change of order of integration and Change of variables in integrals.
C102.5	Understand the concepts of Triple integration and determine the volume using integration.
C102.6	Solve the linear equations of second and higher order with constant, and variable coefficients, simultaneous first order differential equations. Apply the method of variation of parameters and undertermined coefficients in solving the differential equation.

Title:ENGINEERING PHYSICS,Subject Code:PH8151 NBA Code for the Subject :C103 ,Semester : 1 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C103.1	The students will gain knowledge on the basics of properties of matter and its applications

C103.2	The students will acquire the knowledge in optical devices and their applications in fibre optics
C103.3	The students will have adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchanger
C103.4	The student will get knowledge on advanced physics concepts of quantum theory and its applications in tunnelling microscope
C103.5	The students will understand the basics of crystals,their structures and different crystal growth techniques
C103.6	The students will acquire knowledge on the concepts waves and oscillatory motion

Title:ENGINEERING CHEMISTRY,Subject Code:CY8151 NBA Code for the Subject :C104 ,Semester : 1 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C104.1	Familiarise the students with boiler feed water, its requirements, related problems and water treatment techniques for industrial applications.
C104.2	Discuss the basics and principles of adsorption for industrial applications.
C104.3	Develop an understanding of the basic concepts of phase rule, its application to one/two component systems and appreciate the purpose and significances of alloys.
C104.4	Explain the different types of fuels, their synthesis and analysis.
C104.5	Analysis of combustion process and its calculations.
C104.6	Summarise the knowledge on various energy sources and kinds of batteries.

Title:PROBLEM SOLVING AND PYTHON PROGRAMMING,Subject Code:GE8151 NBA Code for the Subject :C105 ,Semester : 1 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C105.1	Develop Algorithmic solutions to simple Computational Problems
C105.2	Read,write,execute by handful of simple python programs
C105.3	Structure Simple python programs for solving problems
C105.4	Decompose a python programs into functions
C105.5	Represent Compound data using Python lists,tuples and Dictionaries
C105.6	Read & Write Data from /to Files in python programs

Title:ENGINEERING GRAPHICS,Subject Code:GE8152 NBA Code for the Subject :C106.4 ,Semester : 1 [20-21ODD]Target :65 Credits:4	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**

C106.4.1	Student will able to develop the graphic skills for communication of concepts, curves,ideas and design of engineering products.
C106.4.2	Student will able to develop the creative knowledge about the free hand sketching of basic geometrical constructions and multiple views.
C106.4.3	Student will able to represent the application of orthographic projections for lines and plane surfaces.
C106.4.4	Student will able to create the projection solids, section and development of surfaces.
C106.4.5	Student will able to learn the optimum path for the benefit of society by using isometric and perspective sections of simple solids
C106.4.6	Students will able to learn the standards of technical drawings.

Title:PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY,Subject Code:GE8161 NBA Code for the Subject :C107 ,Semester : 1 [20-21ODD]Target :65 Credits:2

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C107.1	Write, test, and debug simple Python programs.
C107.2	Implement Python programs with conditional statements.
C107.3	Implement Python programs with iterative statements.
C107.4	Develop Python programs step-wise by defining functions and calling them.
C107.5	Use Python lists, tuples, dictionaries for representing compound data.
C107.6	Read and write data from/to files in Python.

Title:PHYSICS AND CHEMISTRY LABORATORY,Subject Code:BS8161 NBA Code for the Subject :CBS8161 ,Semester : 1 [20-21ODD]Target :65 Credits:2

At the end of this course, Student will be able to

CO-Code	Course outcome Description
CBS8161.1	-
CBS8161.2	-
CBS8161.3	-
CBS8161.4	Analyze the various water quality parameters like hardness,alkalinity and dissolved oxygen content in the water sample.
CBS8161.5	Acquire practical skills by using instruments Conductivity meter, pH meter and Potentiometer.
CBS8161.6	Find the molecular weight of a polymer by viscometer.

Title:TECHNICAL ENGLISH,Subject Code:HS8251 NBA Code for the Subject :C110 ,Semester : 2 [20-21EVEN]Target :60 Credits:4

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C110.1	To enable the learners to develop their basic communication

	skills in English based on LSRW skills
C110.2	To inculcate the habit of reading and writing leading to effective and efficient communication
C110.3	To inculcate the habit of reading and writing leading to effective and efficient communication
C110.4	To inculcate the habit of reading and writing leading to effective and efficient communication
C110.5	Speak appropriately and effectively in varied formal and informal contexts
C110.6	Write reports and winning job applications

Title:ENGINEERING MATHEMATICS - II,Subject Code:MA8251 NBA Code for the Subject :C110 ,Semester : 2 [20-21EVEN]Target :60 Credits:4	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C110.1	Eigen values and eigenvectors,diagonalization of a matrix,symmetric matrices,positive definite matrices and similar matrices.
C110.2	Gradient,divergence and curl of a vector point function and related identities.
C110.3	Evaluation of line,surface and volume integrals using Guass,Stokes and Green¿s theorems and their verification.
C110.4	Analytic functions,Conformal mapping and Complex integration.
C110.5	Solve contour integration and Cauchy Residue theorem.
C110.6	Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.

Title:PHYSICS FOR ELECTRONICS ENGINEERING,Subject Code:PH8253 NBA Code for the Subject :C111 ,Semester : 2 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C111.1	To gain knowledge on classical and quantum electron theories, and energy band structuues
C111.2	To acquire knowledge on basics of semiconductor physics and its applications in various devices,
C111.3	To get knowledge on magnetic and dielectric properties of materials
C111.4	To get knowledge on magnetic and dielectric properties of materials
C111.5	To understand the basics of quantum structures and their applications in spintronics and carbon electronics
C111.6	To understand the basics of quantum structures and their applications in spintronics and carbon electronics

Title:CIRCUIT THEORY,Subject Code:EE8251 NBA Code for the Subject :C113 ,Semester : 2 [20-21EVEN]Target :65 Credits:3
At the end of this course, Student will be able to

CO-Code	Course outcome Description
C113.1	APPLY KVL AND KCL TO SIMPLE CIRCUITS AND SOLVE COMPLEX CIRCUITS USING MESH AND NODAL ANALYSIS
C113.2	UNDERSTAND THE CONCEPT OF NETWORK REDUCTION TECHNIQUE USING SERIES AND PARELLEL COMBINATION AND STAR DELTA CONVERSION
C113.3	APPLY NETWORK THEOREM TO SOLVE SIMPLE AND COMPLEX LINEAR CIRCUITS
C113.4	DEVELOPE THE TRANSIENT RESPONSE OF RLC CIRCUITS USING LAPLACE TRANSFORM
C113.5	ILLUSTRATE THE CONCEPTS IN SINGLE AND THREE PHASE CIRCUITS AND FORMULATE THE EXPRESSIONS FOR V,I&PF FOR ALL THE LOADS
C113.6	SOLVE THE SERIES AND PARELLEL REASONANT CIRCUIT.ANALYZE THE PERFORMANCE OF SINGLE & DOUBLE TUNED CIRCUITS

Title:BASIC CIVIL AND MECHANICAL ENGINEERING,Subject Code:BE8252 NBA Code for the Subject :C114 ,Semester : 2 [20-21EVEN]Target :65 Credits:4

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C114.1	Student will be able to appreciate the Civil and Mechanical Engineering components of Projects.
C114.2	Student will be able to explain the usage of construction material and proper selection of construction materials.
C114.3	Student will be able to measure distances and area by surveying
C114.4	Student will be able to identify the components used in power plant cycle.
C114.5	Student will be able to demonstrate working principles of petrol and diesel engine.
C114.6	Student will be able to elaborate the components of refrigeration and Air conditioning cycle.

Title:ENVIRONMENTAL SCIENCE AND ENGINEERING,Subject Code:GE8291 NBA Code for the Subject :C114 ,Semester : 2 [20-21EVEN]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C114.1	Infer the importance of environment and explain the concept, types, structure and functions of ecosystem.
C114.2	Recall the various functions, different values, measurement, levels, threats and the need for conservation of biodiversity.
C114.3	Explain the different types of pollution and propose the suitable methods to prevent the same to enhance the environment.
C114.4	Discuss the different types of natural resources, characteristics, optimum usage and its importance of conservation of natural resources.
C114.5	List the various social issues, environmental protection acts,

	different disasters and possible solutions to protect the environment for sustainable development.
C114.6	Describe the effects of population explosion, trend of population in various countries and explain the role of IT in environment and human health.

Title:ELECTRIC CIRCUITS LABORATORY,Subject Code:EE8261 NBA Code for the Subject :C116 ,Semester : 2 [20-21EVEN]Target :65 Credits:2	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C116.1	Explain practically the concept of circuit laws, thevenins theorem
C116.2	Acquire the knowledge of Norton, Superposition and Maximum power transfer theorem in electrical network
C116.3	Use basic laboratory equipment such as multimeter, power supply, signal generators and oscilloscope and its techniques to measure electrical quantities
C116.4	Understand the concept of transients, frequency response of RLC circuit, Resonance circuit and 3 phase circuits
C116.5	Become proficient with computer skills for the analysis and design of circuits using PSPICE/MULTISIM
C116.6	Acquire team work skills for working effectively in groups

Title:TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS,Subject Code:MA8353 NBA Code for the Subject :C201 ,Semester : 3 [20-21ODD]Target :65 Credits:4	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C201.1	The fundamental concepts of partial differential equations and the various solution procedures for solving the first order non-linear partial differential equations.
C201.2	Analytical methods for solving higher order partial differential equations.
C201.3	Understand the Dirichlet's conditions, the basic concepts in Fourier series, analyze their properties such as parsevals identity and its problems.
C201.4	The application of Fourier series for solving the initial boundary value problems in one Dimensional wave and heat equations and boundary value problems in elliptic equations.
C201.5	Understand ,Apply,Evaluate and analyse the concepts of Fourier transform and mathematical concepts which are applied in various field of Engineering.
C201.6	The mathematical techniques of Z-transform applied in various topics in engineering discipline.

Title:DIGITAL LOGIC CIRCUITS,Subject Code:EE8351 NBA Code for the Subject :C202 ,Semester : 3 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C202.1	Describe the various types of number systems, binary codes and examine the digital logic families

C202.2	Use K map for simplification and implementation of combinational logic circuit.
C202.3	Explain the synchronous sequential logic circuits and produce a state transition diagram from a description of sequential logic function.
C202.4	Demonstrate the synchronous sequential circuits and describe the operation of programmable logic devices
C202.5	Describe the VHDL programming language for logic circuits
C202.6	Produce VHDL coding for combinational logic and sequential circuits

Title:ELECTRON DEVICES AND CIRCUITS,Subject Code:EC8353 NBA Code for the Subject :C203 ,Semester : 3 [20-21ODD]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C203.1	explain the operation & characteristics of PN junction diode, operation with it sclassification
C203.2	draw & explain the structure, operation & characteristics of BJT, JFET, MOSFET & UJT
C203.3	differentiate CB, CE, CC amplifiers
C203.4	discuss multistage and differential amplifier
C203.5	describe about negative and positive feedback
C203.6	explain about the oscillator and its types

Title:ELECTRICAL MEASUREMENTS,Subject Code:EI8351 NBA Code for the Subject :C204 ,Semester : 3 [20-21ODD]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C204.1	Examine current and voltage using various types of instruments
C204.2	Examine power and energy using wattmeter and energy meter
C204.3	Determine unknown potential drop using potentiometer
C204.4	Distinguish the operation of current and potential transformers.
C204.5	Understand the concept of various resistance measuring methods.
C204.6	Calculate the value of unknown impedance and capacitance using bridges.

Title:TRANSDUCERS ENGINEERING,Subject Code:EI8352 NBA Code for the Subject :C205 ,Semester : 3 [20-21ODD]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C205.1	Derive the model and Infer knowledge on the characteristics of transducers

C205.2	Explain about variable resistance transducers and their characteristics.
C205.3	Understand about variable inductance transducers and its real time applications
C205.4	Explain about variable capacitance transducers
C205.5	Outline the applications of other transducer and it needs
C205.6	Calculate the value of unknown impedance and capacitance using bridges.

Title:OBJECT ORIENTED PROGRAMMING,Subject Code:CS8392 NBA Code for the Subject :C206 ,Semester : 3 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C206.1	Learn the Architecture of Java Environment and understand the role of JVM and JRE.
C206.2	understand Object Oriented Programming concepts and basic characteristics of Java
C206.3	know the principles of inheritance and interfaces
C206.4	define exceptions and use I/O streams
C206.5	develop a java application with threads and generics classes
C206.6	design and build simple Graphical User Interfaces

Title:OBJECT ORIENTED PROGRAMMING LAB,Subject Code:CS8383 NBA Code for the Subject :C207 ,Semester : 3 [20-21ODD]Target :80 Credits:2	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C207.1	To build software development skills using java programming for real-world applications.
C207.2	Learn Features of Object oriented programming by developing programs using Classes,Packages and Interfaces.
C207.3	Design and implement java programs using Exceptions,Arrays.
C207.4	Develop java applications using multithreading,Generic Programming
C207.5	Design and implement java programs using I/O Streams.
C207.6	Learn to develop GUI programming and event handling using swing and awt classes

Title:MEASUREMENTS AND TRANSDUCERS LABORATORY,Subject Code:EI8361 NBA Code for the Subject :C207 ,Semester : 3 [20-21ODD]Target :65 Credits:2	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C207.1	Investigate the characteristics of strain gauge, load cell and potentiometer
C207.2	Analyze Hall Effect transducer, LVDT and Photoelectric tachometer

C207.3	Implement LDR, thermistor, RTD and thermocouple.
C207.4	Investigate the Wheatstone, Schering, Anderson and Kelvin¿s bridge and measurement of angular displacement
C207.5	Examine various single-phase energy meter and wattmeter
C207.6	Investigate the calibration of Ammeter and Voltmeter.

Title:Numerical Methods,Subject Code:MA8491 NBA Code for the Subject :C209 ,Semester : 4 [20-21EVEN]Target :60 Credits:4	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C209.1	solve algebraic and transcendental equations by various methods. Simultaneous linear equations using direct and indirect methods. Compute Eigen values of a matrix by power method.
C209.2	Interpret the data using interpolation by various methods and cubic spline approximation.
C209.3	Compute the numerical differentiation using various methods and integration using trapezoidal and simpson's rule to solve single and double integration.
C209.4	Solving first order and second order differential equations using various types of single step methods.
C209.5	Solving first order and second order differential equations using various types of multi step methods.
C209.6	Applying finite difference method for solving two point linear boundary value problems. Solving one dimentional heat flow equation and wave equation by explicit and implicit methods to Solve two dimensional heat equations.

Title:Electrical Machines,Subject Code:EI8451 NBA Code for the Subject :C210 ,Semester : 4 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C210.1	Acquire knowledge to solve problems associated with DC and AC Machines
C210.2	Test and control different machines based on the familiarity of basic concepts and working principle.
C210.3	Choose appropriate machines for a given application while carrying out projects. Ability to choose appropriate machines for a given application while carrying out projects.
C210.4	Apply the knowledge gained to choose appropriate machines for specific application useful for the society
C210.5	Know about the latest developments related to machines and to learn their concepts even after the completion of the course
C210.6	acquire knowledge of Special Electrical Machines

Title:Industrial Instrumentation - I,Subject Code:EI8452 NBA Code for the Subject :C211 ,Semester : 4 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**

C211.1	Ability to understand the construction and working of instruments used for measurement of force, torque, speed, acceleration, vibration, density, viscosity, humidity, moisture, temperature.
C211.2	Ability to select instruments according to the application.
C211.3	Ability to understand the concept of calibration of instruments and gain knowledge about temperature measurement devices.
C211.4	Ability to design signal conditioning circuits and compensation schemes for temperature measuring instruments.
C211.5	Ability to understand the working of instruments used for measurement of pressure.
C211.6	Ability to measure fiber optic sensor to measure temperature.

Title:Linear Integrated Circuitsand Applications,Subject Code:EE8451 NBA Code for the Subject :C213 ,Semester : 4 [20-21EVEN]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C213.1	Explain the fundamentals, classification, procedures for the realization of monolithic ICs and discuss the fabrication of diodes, capacitance, resistance, FETs
C213.2	Describe the characteristics of operational amplifier and explain the basic applications of OP-Amp
C213.3	Explain the concepts of amplifiers, filters, comparators, Multivibrators, waveform generators, peak detectors, S/H circuit, A/D and D/A converters using OP-Amp
C213.4	Describe the internal functional blocks, characteristics and applications of timer, voltage controlled oscillator, phase lock loop and analog multiplier ICs
C213.5	Discuss the internal functional blocks, working principle and applications of voltage regulators and SMPS
C213.6	Describe the internal functional blocks, characteristics and application of power amplifier and function generator IC

Title:Control Systems,Subject Code:IC8451 NBA Code for the Subject :C213 ,Semester : 4 [20-21EVEN]Target :65 Credits:4

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C213.1	Derive the transfer function of electrical and mechanical systems using various reduction techniques
C213.2	Analyze the response of the control system by investigating steady state error and time domain specifications
C213.3	Construct the root locus to find the stability of the system and explain the effects of different types of controller
C213.4	Construct the frequency response of the system using various plots and correlate the time and frequency domain specifications and effect of compensation
C213.5	Design the different types of compensatorS using frequency response plots to stabilize the control system

C213.6	Explain the state variable representation of physical systems with the effects of state feedback

Title:CommunicationEngineering,Subject Code:EC8395 NBA Code for the Subject :C314 ,Semester : 4 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C314.1	DESIGN AND ANALYZE ANALOG TRANSMISSION SYSTEMS
C314.2	DESIGN AND ANALYZE PULSE TRANSMISSION SYSTEMS
C314.3	DESIGN AND ANALYZE DIGITAL TRANSMISSION SYSTEMS FOR HIGH BIT RATE TRANSMISSION
C314.4	ANALYZE CODING TECHNIQUES TO MINIMIZE THE TRANSMISSION ERRORS
C314.5	ANALYZE THE SPREAD SPECTRUM TECHNIQUE FOR SECURED TRANSMISSION
C314.6	ANALYZE TECHNIQUES FOR MULTI USER COMMUNICATION

Title:Devices and Machines Laboratory,Subject Code:EI8461 NBA Code for the Subject :C215 ,Semester : 4 [20-21EVEN]Target :65 Credits:2	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C215.1	Gain knowledge on the proper usage of various electronic equipment and simulation tools for design and analysis of electronic circuits.
C215.2	Get hands-on experience in studying the characteristics of semiconductor devices.
C215.3	Ability to analyze various electronic circuits such as voltage regulators, transistor amplifiers and oscillators.
C215.4	Ability to make use of basic concepts to obtain the no load and load characteristics of D.C machines.
C215.5	Analyze and draw conclusion from the characteristics obtained by conducting experiments on machines.
C215.6	Ability to carry out the Experiments in batches to motivate the Team work.

Title:Linear and DigitalIntegrated Circuits Laboratory,Subject Code:EE8461 NBA Code for the Subject :C216 ,Semester : 4 [20-21EVEN]Target :65 Credits:2	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C216.1	demonstrate the working practice in experiment test hence to learn design, testing & characteristics of circuit behavior with digital & analog
C216.2	to infer about the operation of linear and digital electronic circuit
C216.3	analyse the behavior of linear & digital electronic circuit for different input conditions
C216.4	characterize the applications of basic analog IC's and their importance in engineering

C216.5	investigation of functions of VCO & PLL IC's
C216.6	design & implementation of the synchronous & asynchronous counter

Title:Analytical Instruments,Subject Code:EI8551 NBA Code for the Subject :C301 ,Semester : 5 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C301.1	Infer various techniques and methods of analysis which occur in the various regions of the spectrum
C301.2	Classify the various chromatography techniques
C301.3	Estimate the various methods of analysis of industrial gases
C301.4	Compute the air pollution monitoring techniques
C301.5	Estimate the importance of chemical process using liquids or solutions
C301.6	Describe about the nuclear magnetic resonance and mass spectrometry techniques

Title:Industrial Instrumentation - II,Subject Code:EI8552 NBA Code for the Subject :C302 ,Semester : 5 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C302.1	Define the various techniques and methods of flow meter
C302.2	Describe the various methods of quantity meters
C302.3	Examine the concept of area flow meters and mass flow meters
C302.4	Explain the concept of electrical flow meters
C302.5	Classify the various techniques of level measurements
C302.6	Describe the different types of transmitters

Title:Process Control,Subject Code:EI8553 NBA Code for the Subject :C303 ,Semester : 5 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C303.1	Derive the Mathematical model of first order level, flow, pressure, temperature process.
C303.2	Outline various final control elements and modelling of pneumatic actuators.
C303.3	Illustrate the effect of various control actions.
C303.4	Classify the evaluation criteria and tuning techniques of controllers.
C303.5	Elaborate the model based control schemes.
C303.6	Explain the concept of multi loop control techniques.

Title:Microprocessors and Microcontrollers,Subject Code:EE8551 NBA Code for the Subject :C305 ,Semester : 5 [20-21ODD]Target :65 Credits:3

At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C305.1	Understand the architecture, addressing modes, Instruction set of 8086 microprocessor for programming the microprocessor and also understand the operations of stacks, interrupt service routines
C305.2	Create ALP programs in assembly language using 8085
C305.3	Understand techniques for interfacing I/O devices to the microprocessor including several specific standard I/O devices
C305.4	Understand the architecture, interrupt structure, Timer, counter of 8051 microcontroller
C305.5	Create a microcontroller based minimal system for a particular application
C305.6	Design microcontroller based system design

Title:Unit Operation and Control,Subject Code:EI8093 NBA Code for the Subject :C305 ,Semester : 5 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C305.1	Study the unit operations involved for transportation, mixing and separation of solids.
C305.2	Study the unit operations involved for transportation, mixing and separation of fluids
C305.3	Understand the basic operations involved with heat exchangers, Distillation and chemical reactions
C305.4	Gain knowledge about the operations of evaporators and crystallizers, drying and cooling towers
C305.5	Gain knowledge on the operation of dryers, distillation column, refrigerators and chemical reactors.
C305.6	Apply concept of unit operations to Thermal Power plant, Steel Industry, Paper and Pulp Industry, Leather Industry

Title:AIR POLLUTION AND CONTROL ENGINEERING\,Subject Code:OCE551 NBA Code for the Subject :C306 ,Semester : 5 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C306.1	Outline the basic concepts of air quality management
C306.2	Examine the characteristics of air pollutants and their effects
C306.3	Identify, formulate and solve meteorological effects
C306.4	ability to design stacks and particulate air pollution control devices to meet applicable standards. ability to design stacks and particulate air pollution control devices to meet applicable standards
C306.5	Ability to select control equipment
C306.6	Ability to ensure quality, control and preventive measures.

Title:Microprocessors and Microcontrollers Laboratory,Subject Code:EE8681 NBA Code for the Subject :C307 ,Semester : 5 [20-21ODD]Target :65 Credits:2	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C307.1	Understand the architecture, addressing modes, Instruction set of 8086 microprocessor for programming the microprocessor and also understand the operations of stacks, interrupt service routines
C307.2	Create ALP programs in assembly language using 8085
C307.3	Understand techniques for interfacing I/O devices to the microprocessor including several specific standard I/O devices
C307.4	Understand the architecture, interrupt structure, Timer, counter of 8051 microcontroller
C307.5	Create a microcontroller based minimal system for a particular application
C307.6	Design microcontroller based system design

Title:Industrial Instrumentation Laboratory,Subject Code:EI8561 NBA Code for the Subject :C307 ,Semester : 5 [20-21ODD]Target :80 Credits:2	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C307.1	Experimentally verify the process in flow
C307.2	Compute various parameters like level, pressure, temperature
C307.3	Apply the speed, torque, vibration, moisture and viscosity measurement
C307.4	Experiment and control of spectrometer
C307.5	Measure the pH, conductivity of solutions
C307.6	Analyze the ECG and pulse measurement

Title:Data Structures ,Subject Code:CS8391 NBA Code for the Subject :C203 ,Semester : 6 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C203.1	Explain ADT, linked list implementations, operations and its applications
C203.2	Apply Stack and Queue ADT operations to problem solutions
C203.3	Apply different types of tree data structure(Binary, AVL, B,B+) and traversals to solve various problems
C203.4	Implement graph data structures and its traversals
C203.5	Discuss the topological sort, graph connectivity and applications of graphs
C203.6	Implement Sorting and Searching algorithms, Hash Function and Open addressing

Title:Advanced Control System,Subject Code:IC8651 NBA Code for

the Subject :C309 ,Semester : 6 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C309.1	construct the model of linear and non linear systems using state variable analysis
C309.2	Design and compute the state feedback control and state observer
C309.3	Examine sample data analysis
C309.4	Analyze the stability of the systems using different techniques.
C309.5	Construct phase trajectories for non- linear systems using the phase plane analysis and describing function analysis.
C309.6	Discuss the design of optimal controller.

Title:Logic and Distributed Control System ,Subject Code:EI8651 NBA Code for the Subject :C310 ,Semester : 6 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C310.1	Know about the Programmable Logic Controller (PLC) and SCADA
C310.2	Explain about the basics of ladder logic programming
C310.3	Explain about the PLC programming using other languages
C310.4	Identify the architecture and local control unit of Distributed Control System (DCS).
C310.5	Gives the basic knowledge in the interfaces used in DCS.
C310.6	Know about the importance and applications of PLC and DCS used in automation industries.

Title:Thermal Power Plant Instrumentation ,Subject Code:EI8092 NBA Code for the Subject :C312 ,Semester : 6 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C312.1	Describe an overview on power generation through various methods.
C312.2	Identify various measurements and controls used in power plant.
C312.3	Understand basic furnace control techniques
C312.4	Know basic boiler control techniques.
C312.5	Discriminate advanced boiler control techniques.
C312.6	Summarize the turbine control techniques.

Title:MEMS and Nano Science ,Subject Code:EE8072 NBA Code for the Subject :C313-E11 ,Semester : 6 [20-21EVEN]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-	**Course outcome Description**

Code	
C313-E11.1	Know about the intrinsic characteristics of MEMS and Microsystems.
C313-E11.2	Understand the operation of actuators at micro level.
C313-E11.3	Describe about the various micromachining methods like surface micromachining, bulk micromachining.
C313-E11.4	Understand about the importance of polymer and optical MEMS.
C313-E11.5	Explain about the nano scale engineering.
C313-E11.6	State about patterning and preparation methods at nano scale.

Title:Applied Soft Computing,Subject Code:EE8071 NBA Code for the Subject :C314 ,Semester : 6 [20-21EVEN]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C314.1	Associate the concepts of architectures in neural networks.
C314.2	Illustrate the concepts of neural networks for control
C314.3	Distinguish the adaptive fuzzy system and neuro-fuzzy systems.
C314.4	Infer a comprehensive knowledge on fuzzy logic control and their applications
C314.5	Explain the concept of genetic algorithms
C314.6	Applying tabu search and ant colony search techniques for solving optimisation problems.

Title:Data Structures Laboratory ,Subject Code:CS8381 NBA Code for the Subject :C206 ,Semester : 6 [20-21EVEN]Target :65 Credits:2

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C206.1	Implement the linear data structures like list and stack using arrays and linked list Implement the linear data structures like list and stack using arrays and linked list
C206.2	Implement the applications of linear data structures
C206.3	Implement the non-linear data structures tree and its traversals and applications
C206.4	Implement the non-linear data structures graph and its traversals
C206.5	Implement Sorting and Searching algorithms
C206.6	Implement various Hash Functions

Title:Professional Communication ,Subject Code:HS8581 NBA Code for the Subject :C308 ,Semester : 6 [20-21EVEN]Target :65 Credits:1

At the end of this course, Student will be able to

CO-Code	Course outcome Description

C308.1	To enhance the learners speaking skill through various activities like group discussion, telephonic conversation, presentation skill etc.,
C308.2	To develop listening and speaking skills through communicative functions
C308.3	Enhance the Employability and Career Skills of student
C308.4	Orient the students towards grooming as a professional
C308.5	Make them Employability Graduates
C308.6	Develop their confidence and help them attend interviews successfully

Title:Process Control Laboratory ,Subject Code:EI8661 NBA Code for the Subject :C317 ,Semester : 6 [20-21EVEN]Target :80 Credits:2	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C317.1	Simulate lumped / distributed parameter system and identify the model using non parametric identification methods.
C317.2	Analyze process control engineering problems and control valve characteristics.
C317.3	Apply the tuning techniques on PID controllers for solving various practical problems and to face implementation issues.
C317.4	Experiment and control of closed loop AC and DC drives.
C317.5	Experimentally verify the process control concepts on the selected process control loops like level, pressure, temperature and flow.
C317.6	Apply the complex control techniques like cascade, feed forward on three tank and four tank system and model predictive control schemes.

Title:ELECTRONICS INSTRUMENTATION,Subject Code:EI8692 NBA Code for the Subject :C310 ,Semester : 7 [20-21ODD]Target :65 Credits:3	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C310.1	Outlines the varies electronics instruments and their applications.
C310.2	Explains about the cathode ray oscilloscopes, their applications and different types of signal analyzers.
C310.3	Illustrates about virtual instrumentation, its applications
C310.4	Describe the telemetry, modulation techniques and multiplexing.
C310.5	Demonstrate the LabVIEW programming.
C310.6	Experiment to do interfaces with real time processes with aid of NI components.

Title:INSTRUMENTATION IN PETROCHEMICAL INDUSTRIES,Subject Code:EI8091 NBA Code for the Subject :C402 ,Semester : 7 [20-21ODD]Target :65 Credits:3
At the end of this course, Student will be able to

CO-Code	Course outcome Description
C402.1	introduce the students the method of oil recovery
C402.2	make the students understand the process behavior of some of the important unit operations in petrochemical industry through mathematical model
C402.3	familirize the students to apply knowledge to select the appropriate control strategy for the selective process
C402.4	provide information about the most important derivatives obtained from petroleum products
C402.5	help the students in understanding selection and maintenance of instruments in petrochemical industry
C402.6	introduce the steps involved in oil gas production process

Title:DIGITAL IMAGE PROCESSING,Subject Code:EC8093 NBA Code for the Subject :C403 ,Semester : 7 [20-21ODD]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C403.1	Understand the basics and fundamentals of digital image processing
C403.2	Understand and apply the techniques used in image enhancement
C403.3	Understand and apply the techniques used in image restoration
C403.4	Understand the basics of segmentation and feature extraction techniques
C403.5	understand the basics of compression and recognition methods
C403.6	Apply the knowledge gained in segmentation methods

Title:INDUSTRIAL DATA NETWORKS,Subject Code:EI8751 NBA Code for the Subject :C403 ,Semester : 7 [20-21ODD]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C403.1	Infer knowledge on the basic concepts of data networks.
C403.2	Define the basics concepts of internetworking and serial communications.
C403.3	Describe the uses of HART and Field buses in process industries.
C403.4	Recognize the importance of MODBUS, PROFIBUS and other communication protocol.
C403.5	Identify the importance and applications of foundation fieldbus
C403.6	Exhibit the concept of industrial Ethernet and wireless communication techniques.

Title:FIBRE OPTICS AND LASER INSTRUMENTATION,Subject Code:EI8075 NBA Code for the Subject :C404-E31 ,Semester : 7 [20-21ODD]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C404-E31.1	Understand the principle, transmission, dispersion and attenuation characteristics of optical fibers
C404-E31.2	Acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics
C404-E31.3	Apply the gained knowledge on optical fibers for its use as communication medium.
C404-E31.4	Gained knowledge optical fibre as a sensor which have important applications in production, manufacturing industrial and biomedical applications.
C404-E31.5	Understand laser theory and laser generation system.
C404-E31.6	Students will gain ability to apply laser theory for the selection of lasers for a specific Industrial and medical application.

Title:iNtroduction To C ProgramminG,Subject Code:OCS752 NBA Code for the Subject :COEOCS752 ,Semester : 7 [20-21ODD]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
COEOCS752.1	Understand the usage of datatypes and purpose of variables in programming
COEOCS752.2	Design, implement,test and debug simple programs using basic constructs that use calculations ,selection,looping
COEOCS752.3	Design, implement,test and debug simple programs using arrays
COEOCS752.4	Design, implement,test and debug simple programs using strings
COEOCS752.5	Design, implement,test and debug simple programs using functions to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.
COEOCS752.6	Design, implement,test and debug simple programs using structure

Title:Industrial Automation LAB,Subject Code:EI8761 NBA Code for the Subject :C407 ,Semester : 7 [20-21ODD]Target :65 Credits:2

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C407.1	Ability to understand and Programming of PLC, SCADA and DCS
C407.2	To impart practical skills in interfacing the various field devices with PLC
C407.3	Ability to working with industrial automation system
C407.4	Be able to design and implement control schemes in PLC
C407.5	Ability to interface field devices with PLC & DCS

C407.6	design and implement control schemes in DCS

Title:Instrumentation System Design Laboratory,Subject Code:EI8762 NBA Code for the Subject :C408 ,Semester : 7 [20-21ODD]Target :65 Credits:2

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C408.1	Design of instrumentation amplifiers and various filters
C408.2	Design of converters and compensation systems
C408.3	Analyze signal conditioning circuits and flowmeters.
C408.4	Design of controllers and control valves for various applications
C408.5	Design of data acquisition system and transmitter
C408.6	Inspect, installation procedures and safety regulations used in industries.

Title:Fundamentals of Nano Science,Subject Code:GE8073 NBA Code for the Subject :C410-E64 ,Semester : 8 [20-21EVEN]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C410-E64.1	To learn about the basis of nano material science and its properties
C410-E64.2	To discuss about the various preparation methods of nano materials
C410-E64.3	Infer various nano materials and its method of synthesis
C410-E64.4	Develop knowledge about various characterization techniques of nano materials
C410-E64.5	To identify the various applications of nanotechnology in computing
C410-E64.6	To identify the various applications of nanotechnology in biomedical

Title:PROFESSIONAL ETHICS IN ENGINEERING,Subject Code:GE8076 NBA Code for the Subject :C411E51 ,Semester : 8 [20-21EVEN]Target :65 Credits:3

At the end of this course, Student will be able to

CO-Code	Course outcome Description
C411E51.1	Understanding the human values and ethics in the human excellence and behaviour in the organisation
C411E51.2	helps to understand the characteristics of morals and engineer's conduct of behaviour and practice in the workplace
C411E51.3	Engineering as an experimental process to understand the various ethical implications
C411E51.4	responsibility of engineers to ensure the safety, health and welfare of the public
C411E51.5	the importance of ethics in dealing with the global issues, computer ethics and weapons development

C411E51.6	moral guidelines of practising human, employee, professional rights in organisations.

Title:Project Work ,Subject Code:IC8811 NBA Code for the Subject :C413 ,Semester : 8 [20-21EVEN]Target :65 Credits:10	
At the end of this course, Student will be able to	
CO-Code	**Course outcome Description**
C413.1	Experiment a specific problem right from its identification, formulation and obtaining successful solution for the same using various engineering techniques.
C413.2	Choose any challenging practical problems and find solution by formulating proper methodology.
C413.3	Prepare project reports and to face reviews and viva voce examination.
C413.4	Integrate and work in a team.
C413.5	Summarize the project and prepare the publication of papers and journals to expose to the technical world.
C413.6	Discriminate various instruments and able to control systems in automation and in emerging trends of instrumentation.

Programme: B.E. Instrumentation and Control Engineering

Academic Year:2020-21

Subject Code :HS8151 NBA Code : C101 Title :COMMUNICATIVE ENGLISH Semester :1

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C101.1	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C101.2	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C101.3	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C101.4	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C101.5	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C101.6	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-

Subject Code :MA8151 NBA Code : C102 Title :ENGINEERING MATHEMATICS - I Semester :1

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C102.1	3	2	1	1	-	-	-	-	1	-	-	2	-	-	-
C102.2	3	3	2	2	-	-	-	-	1	-	-	2	-	-	-
C102.3	3	2	1	1	-	-	-	-	1	-	-	2	-	-	-
C102.4	3	3	2	2	-	-	-	-	1	-	-	2	-	-	-
C102.5	3	2	2	2	-	-	-	-	1	-	-	2	-	-	-
C102.6	3	3	2	2	-	-	-	-	1	-	-	2	-	-	-

Subject Code :PH8151 NBA Code : C103 Title :ENGINEERING PHYSICS Semester :1

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C103.1	3	3	3	3	1	-	-	-	-	2	-	3	2	1	-
C103.2	3	3	-	-	3	-	-	3	-	-	-	-	2	1	-
C103.3	-	3	3	3	3	-	-	3	-	-	-	-	2	1	-
C103.4	-	-	-	-	2	-	3	-	-	1	-	-	2	1	-
C103.5	-	3	3	3	1	-	-	-	-	-	-	2	2	1	-
C103.6	3	-	-	-	1	-	-	3	-	-	-	-	2	1	-

Subject Code :CY8151 NBA Code : C104 Title :ENGINEERING CHEMISTRY Semester :1

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C104.1	3	2	1	1	-	1	2	-	1	1	1	1	-	-	-
C104.2	3	2	1	1	-	1	2	-	1	1	1	1	-	-	-
C104.3	3	2	1	1	-	1	2	-	1	1	1	1	-	-	-
C104.4	3	2	1	1	-	1	2	-	1	1	1	1	-	-	-
C104.5	3	2	1	1	-	1	2	-	1	1	1	1	-	-	-
C104.6	3	2	1	1	-	1	2	-	1	1	1	1	-	-	-

Subject Code :GE8151 NBA Code : C105 Title :PROBLEM SOLVING AND PYTHON PROGRAMMING Semester :1

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C105.1	3	3	3	3	1	-	-	-	2	2	1	2	3	3	2
C105.2	3	3	3	2	1	-	-	-	1	1	1	2	3	3	1
C105.3	3	3	3	2	1	-	-	-	2	1	1	2	3	3	1

C105.4	3	3	3	3	1	-	-	-	2	1	1	2	2	2	1
C105.5	3	3	3	2	1	-	-	-	3	1	-	2	2	2	-
C105.6	3	3	3	2	1	-	-	-	2	1	-	1	1	2	-

Subject Code :GE8152 NBA Code : C106.4 Title :ENGINEERING GRAPHICS Semester :1

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C106.4.1	3	2	3	2	1	2	1	2	1	2	2	1	1	2	2
C106.4.2	3	2	3	2	2	3	2	2	1	2	2	2	3	3	2
C106.4.3	3	2	2	2	1	1	1	1	2	2	1	2	2	2	2
C106.4.4	3	3	2	2	3	2	2	1	3	1	1	2	2	2	2
C106.4.5	3	2	2	2	2	1	1	2	3	2	2	1	2	2	2
C106.4.6	3	2	2	2	3	1	1	1	3	2	1	2	3	2	2

Subject Code :GE8161 NBA Code : C107 Title :PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY Semester :1

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C107.1	3	3	3	2	1	-	-	-	2	1	2	3	3	2	2
C107.2	3	3	3	2	1	-	-	-	2	1	2	3	3	2	2
C107.3	3	3	3	2	1	-	-	-	2	1	3	3	3	2	1
C107.4	3	3	3	2	1	-	-	-	2	1	1	3	3	2	1
C107.5	3	3	3	2	1	-	-	-	2	1	1	3	3	2	1
C107.6	3	3	3	2	1	-	-	-	2	1	1	3	3	2	1

Subject Code :HS8251 NBA Code : C110 Title :TECHNICAL ENGLISH Semester :2

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C110.1	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C110.2	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C110.3	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C110.4	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C110.5	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-
C110.6	-	-	-	-	-	-	-	-	3	3	2	3	1	2	-

Subject Code :MA8251 NBA Code : C110 Title :ENGINEERING MATHEMATICS - II Semester :2

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C110.2	3	2	2	1	1	-	-	-	1	-	-	2	-	-	-
C110.3	3	2	2	2	1	-	-	-	1	-	-	2	-	-	-
C110.4	3	2	1	1	1	-	-	-	1	-	-	2	-	-	-
C110.5	3	2	1	1	1	-	-	-	1	-	-	2	-	-	-
C110.6	3	2	2	2	1	-	-	-	1	-	-	2	-	-	-
C110.1	3	-	-	1	1	-	-	-	1	-	-	2	-	-	-

Subject Code :PH8253 NBA Code : C111 Title :PHYSICS FOR ELECTRONICS ENGINEERING Semester :2

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C111.2	3	2	2	1	-	-	-	-	-	-	-	1	1	2	-
C111.3	3	2	2	1	-	-	-	-	-	-	-	1	1	2	-
C111.4	3	2	2	1	-	-	-	-	-	-	-	1	1	2	-
C111.5	3	2	2	1	-	-	-	-	-	-	-	1	1	2	-
C111.6	3	2	2	1	-	-	-	-	-	-	-	1	1	2	-
C111.1	3	2	2	1	-	-	-	-	-	-	-	1	1	2	-

Subject Code :EE8251 NBA Code : C113 Title :CIRCUIT THEORY Semester :2

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
113.1	3	3	3	1	-	-	-	3	3	3	-	2	2	1	-
113.3	3	3	3	1	-	-	-	2	3	3	-	2	2	1	-
113.4	3	3	3	1	-	-	-	2	3	3	-	2	2	1	-
113.5	3	3	3	1	-	-	-	2	3	3	-	2	2	1	-
113.6	3	3	3	1	-	-	-	2	3	3	-	2	2	1	-
113.2	3	3	3	1	-	-	-	2	3	3	-	2	2	1	-

Subject Code :BE8252 NBA Code : C114 Title :BASIC CIVIL AND MECHANICAL ENGINEERING Semester :2

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C 114.1	2	1	3	1	2	3	3	2	3	2	3	2	1	3	-
C 114.2	2	2	1	2	1	1	1	1	1	2	3	2	1	2	-
C 114.3	2	2	2	1	1	1	2	2	2	2	2	1	1	1	-
C 114.4	2	1	1	1	2	1	3	2	2	1	2	1	3	2	-
C 114.5	2	2	1	2	2	3	1	2	2	2	1	1	1	2	-
C 114.6	1	1	1	1	2	1	1	1	1	1	1	1	1	1	-

Subject Code :GE8291 NBA Code : C114 Title :ENVIRONMENTAL SCIENCE AND ENGINEERING Semester :2

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C114.1	2	-	-	-	-	1	3	2	1	2	-	2	2	2	-
C114.2	2	-	-	-	-	1	3	2	1	2	-	2	2	2	-
C114.3	2	-	-	-	-	1	3	2	1	2	-	2	2	2	-
C114.4	2	-	-	-	-	1	3	2	1	2	-	2	2	2	-
C114.5	2	-	-	-	-	1	3	2	1	2	-	2	2	2	-
C114.6	2	-	-	-	-	1	3	2	1	2	-	2	2	2	-

Subject Code :EE8261 NBA Code : C116 Title :ELECTRIC CIRCUITS LABORATORY Semester :2

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C116.1	3	2	2	2	-	-	-	1	2	1	1	2	2	2	-
C116.2	3	2	2	2	-	-	-	1	2	1	1	2	2	2	-
C116.3	3	2	2	2	-	-	-	1	2	1	1	2	2	2	-
C116.4	3	2	2	2	-	-	-	1	2	1	1	2	2	2	-
C116.5	3	2	2	2	-	-	-	1	2	1	1	2	2	2	-
C116.6	3	2	2	2	-	-	-	1	2	1	1	2	2	2	-

Subject Code :MA8353 NBA Code : C201 Title :TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS Semester :3

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C201.1	2	-	-	-	-	-	-	-	-	1	-	1	-	-	-
C201.2	2	-	-	-	-	-	-	-	-	1	-	1	-	-	-
C201.3	2	2	-	-	-	-	-	-	-	1	1	1	-	-	-
C201.4	2	2	-	-	1	-	-	-	-	1	1	1	-	-	-
C201.5	2	2	-	-	1	-	-	-	-	1	1	1	-	-	-
C201.6	2	2	-	-	1	-	-	-	-	1	1	1	-	-	-

Subject Code :EE8351 NBA Code : C202 Title :DIGITAL LOGIC CIRCUITS Semester :3

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C202.2	3	3	2	3	2	-	1	-	-	-	-	-	2	1	1
C202.3	3	3	2	3	2	-	-	-	-	-	1	-	2	1	1
C202.4	3	3	2	3	2	-	-	-	-	1	-	-	2	1	1
C202.5	3	3	2	3	2	-	-	-	1	-	-	-	2	1	1
C202.6	3	3	2	3	2	-	-	1	-	-	-	1	2	1	1
C202.1	3	3	2	3	2	1	-	-	-	-	-	-	2	1	1

Subject Code :EC8353 NBA Code : C203 Title :ELECTRON DEVICES AND CIRCUITS Semester :3

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
203.2	3	2	2	1	-	-	-	-	1	2	1	2	2	2	-
203.3	3	2	2	1	-	-	-	-	1	2	1	2	2	2	-
203.4	3	2	2	1	-	-	-	-	1	2	1	2	2	2	-
203.5	3	2	2	1	-	-	-	-	1	2	1	2	2	2	-
203.6	3	2	2	1	-	-	-	-	1	2	1	2	2	2	-
203.1	3	2	2	1	-	-	-	-	1	2	1	2	2	2	-

Subject Code :CS8391 NBA Code : C203 Title :Data Structures Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C203.1	2	2	2	2	-	1	1	1	1	-	1	-	3	3	-
C203.2	2	2	2	2	-	1	1	1	1	-	1	-	3	3	-
C203.3	2	2	2	2	-	1	1	1	1	-	1	-	3	3	-
C203.4	2	2	2	2	-	1	1	1	1	-	1	-	3	3	-
C203.5	2	2	2	2	-	1	1	1	1	-	1	-	3	3	-
C203.6	2	2	2	2	-	1	1	1	1	-	1	-	3	3	-

Subject Code :EI8351 NBA Code : C204 Title :ELECTRICAL MEASUREMENTS Semester :3

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C204.1	2	2	2	2	2	1	-	-	-	-	1	1	1	2	2
C204.2	2	2	2	2	2	1	1	-	-	-	1	1	1	2	2
C204.4	2	2	2	2	2	1	-	-	-	-	1	1	1	2	2
C204.5	2	2	2	2	2	1	-	1	1	-	1	1	1	2	2
C204.6	2	2	2	2	2	1	-	-	-	1	1	1	1	2	2
C204.3	2	2	2	2	2	1	-	-	-	-	1	1	1	2	2

Subject Code :EI8352 NBA Code : C205 Title :TRANSDUCERS ENGINEERING Semester :3

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
c205.2	2	2	2	-	1	1	-	-	-	-	3	3	3	2	2
c205.3	2	2	2	1	1	-	-	-	1	-	3	3	3	2	2
c205.4	2	2	2	1	-	-	1	-	-	-	3	3	3	2	2
c205.5	2	2	2	1	1	-	-	1	-	-	3	3	3	2	2
c205.6	2	2	2	1	1	-	-	-	-	-	3	3	3	2	2

Subject Code :CS8392 NBA Code : C206 Title :OBJECT ORIENTED PROGRAMMING Semester :3

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C206.2	3	2	3	-	3	-	-	-	-	-	-	-	3	2	-
C206.3	3	2	3	-	3	-	-	-	-	-	-	-	3	2	-
C206.4	3	2	3	-	3	-	-	-	-	-	-	-	3	2	-

C206.5	3	2	3	-	3	-	-	-	-	-	-	-	3	2	-
C206.6	3	2	3	-	3	-	-	-	-	-	-	-	3	2	-
C206.1	3	2	3	-	3	-	-	-	-	-	-	-	3	2	-

Subject Code :CS8381 NBA Code : C206 Title :Data Structures Laboratory Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C206.2	2	2	2	2	2	1	1	1	2	2	1	-	3	3	-
C206.3	2	2	2	2	2	1	1	1	2	2	1	-	3	3	-
C206.1	2	2	2	2	2	1	1	1	2	2	1	-	3	3	-
C206.4	2	2	2	2	2	1	1	1	2	2	1	-	3	3	-
C206.5	2	2	2	2	2	1	1	1	2	2	1	-	3	3	-
C206.6	2	2	2	2	2	1	1	1	2	2	1	-	3	3	-

Subject Code :CS8383 NBA Code : C207 Title :OBJECT ORIENTED PROGRAMMING LAB Semester :3

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C207.1	3	3	3	3	3	-	-	3	3	3	3	3	3	2	-
C207.2	3	3	3	3	3	-	-	3	3	3	3	3	3	2	-
C207.3	3	3	3	3	3	-	-	3	3	3	3	3	3	2	-
C207.4	3	3	3	3	3	-	-	3	3	3	3	3	3	2	-
C207.5	3	3	3	3	3	-	-	3	3	3	3	3	3	2	-
C207.6	3	3	3	3	3	-	-	3	3	3	3	3	3	2	-

Subject Code :EI8361 NBA Code : C207 Title :MEASUREMENTS AND TRANSDUCERS LABORATORY Semester :3

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C207.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C207.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C207.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C207.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C207.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C207.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Subject Code :MA8491 NBA Code : C209 Title :Numerical Methods Semester :4

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C209.1	3	2	2	-	-	-	-	-	-	-	-	2	-	1	-
C209.2	3	2	2	-	-	-	-	-	-	-	-	2	-	1	-
C209.3	3	2	2	-	-	-	-	-	-	-	-	2	-	1	-
C209.4	3	2	2	-	-	-	-	-	-	-	-	2	-	1	-
C209.5	3	2	2	-	-	-	-	-	-	-	-	2	-	1	-
C209.6	3	2	2	-	-	-	-	-	-	-	-	2	-	1	-

Subject Code :EI8451 NBA Code : C210 Title :Electrical Machines Semester :4

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
210.1	2	2	2	2	-	1	1	-	-	1	1	1	-	2	2
210.2	3	2	2	2	-	1	1	-	-	1	1	1	-	2	2
210.3	3	2	2	2	-	1	1	-	-	1	1	1	-	2	2
210.4	3	2	2	2	-	1	1	-	-	1	1	1	-	2	2
210.5	3	2	2	2	-	1	1	-	-	1	1	1	-	2	2
210.6	3	2	2	2	-	1	1	-	-	1	1	1	-	2	2

Subject Code :EI8452 NBA Code : C211 Title :Industrial Instrumentation - I Semester :4

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C211.1	3	2	2	2	2	1	-	-	-	-	2	2	2	2	2
C211.2	3	2	2	2	2	-	-	1	-	-	2	2	2	2	2
C211.3	3	2	2	2	2	-	1	-	-	-	2	2	2	2	2
C211.4	3	2	2	2	2	-	-	-	-	1	2	2	2	2	2
C211.5	3	2	2	2	2	-	-	-	1	-	2	2	2	2	2
C211.6	3	2	2	2	2	-	-	-	-	-	2	2	2	2	2

Subject Code :EE8451 NBA Code : C213 Title :Linear Integrated Circuitsand Applications Semester :4

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C213.1	2	1	1	-	-	1	1	1	-	-	-	1	1	-	-
C213.2	2	1	1	-	-	1	-	-	-	-	-	1	1	-	-
C213.3	2	1	1	-	1	1	-	-	-	-	-	1	1	-	-
C213.4	2	1	1	-	-	1	-	-	-	-	-	1	1	-	-
C213.5	2	1	1	-	-	1	-	-	-	-	-	1	1	-	-
C213.6	2	1	1	-	-	1	-	-	-	-	-	1	1	-	-

Subject Code :IC8451 NBA Code : C213 Title :Control Systems Semester :4

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
213.6	3	3	3	1	-	3	2	-	2	2	1	2	1	2	-
213.1	3	3	3	1	-	2	2	1	2	2	1	2	1	2	-
213.2	3	3	3	1	-	2	2	1	2	2	1	2	1	2	-
213.3	3	3	2	1	-	2	2	1	2	2	1	2	1	2	-
213.4	3	3	3	1	-	3	2	1	2	2	1	2	1	2	-
213.5	3	3	3	1	-	3	3	1	2	2	1	2	1	2	-

Subject Code :EI8461 NBA Code : C215 Title :Devices and Machines Laboratory Semester :4

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
215.1	2	-	-	3	3	-	-	-	-	-	3	3	2	-	-
215.2	2	-	-	3	3	-	-	-	-	-	3	3	2	-	-
215.3	2	-	-	3	3	-	-	-	-	-	3	3	2	-	-
215.4	2	-	-	3	3	-	-	-	-	-	3	3	2	-	-
215.5	2	-	-	3	3	-	-	-	-	-	3	3	2	-	-
215.6	2	-	-	3	3	-	-	-	-	-	3	3	2	-	-

Subject Code :EE8461 NBA Code : C216 Title :Linear and DigitalIntegrated Circuits Laboratory Semester :4

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C216.1	3	2	-	-	2	1	1	-	-	-	-	1	-	-	-
C216.2	3	2	-	-	2	1	1	-	-	-	-	1	-	-	-
C216.3	3	2	-	-	2	1	1	-	-	-	-	1	-	-	-
C216.4	3	2	-	-	2	1	1	-	-	-	-	1	-	-	-
C216.5	3	2	-	-	2	1	1	-	-	-	-	1	-	-	-
C216.6	3	2	-	-	2	1	1	-	-	-	-	1	-	-	-

Subject Code :EI8551 NBA Code : C301 Title :Analytical Instruments Semester :5

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C301.1	1	2	2	1	2	1	-	-	-	-	1	2	2	2	2
C301.2	1	1	2	2	1	-	-	1	-	-	1	1	2	1	2
C301.3	2	2	2	2	2	-	-	-	-	-	1	2	2	2	2
C301.4	2	2	2	2	2	-	-	-	1	-	1	2	2	1	1
C301.5	1	2	1	2	1	-	-	1	1	1	1	2	2	2	2
C301.6	2	2	2	2	2	-	-	-	-	-	1	2	2	2	2

Subject Code :EI8552 NBA Code : C302 Title :Industrial Instrumentation - II Semester :5

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C302.1	3	2	2	2	2	1	-	-	-	-	1	1	2	2	2
C302.2	3	2	2	2	2	-	-	1	1	-	1	1	2	2	2
C302.3	3	2	2	2	2	-	-	-	1	-	1	1	2	2	2
C302.4	3	2	2	2	2	-	-	-	-	-	1	1	2	2	2
C302.5	3	2	2	2	2	-	-	-	-	-	1	1	2	2	2
C302.6	3	2	2	2	2	-	1	-	-	1	1	1	2	2	2

Subject Code :EI8553 NBA Code : C303 Title :Process Control Semester :5

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C303.1	3	3	2	2	1	-	-	-	-	-	3	3	3	3	2
C303.2	3	3	2	2	1	1	1	-	-	-	3	3	3	3	2
C303.3	3	3	2	2	1	-	-	1	-	-	3	3	3	3	2
C303.5	3	3	2	2	1	-	-	-	-	-	3	3	3	3	2
C303.6	3	3	3	2	1	-	-	-	-	-	3	3	3	3	2
C303.4	3	3	2	2	1	-	-	-	-	1	3	3	3	3	2

Subject Code :EE8551 NBA Code : C305 Title :Microprocessors and Microcontrollers Semester :5

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C305.1	3	2	2	2	1	1	-	-	-	-	2	2	2	1	-
C305.2	3	2	2	2	1	1	-	-	-	-	2	2	2	1	-
C305.3	3	2	2	2	1	1	-	-	-	-	2	2	2	1	-
C305.4	3	2	2	2	1	1	-	-	-	-	2	2	2	1	-
C305.5	3	2	2	2	1	1	-	-	-	-	2	2	2	1	-
C305.6	3	2	2	2	1	1	-	-	-	-	2	2	2	1	-

Subject Code :EI8093 NBA Code : C305 Title :Unit Operation and Control Semester :5

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C305.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C305.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C305.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C305.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C305.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C305.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Subject Code :OCE551 NBA Code : C306 Title :AIR POLLUTION AND CONTROL ENGINEERING\ Semester :5

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C306.4	1	2	1	1	-	1	2	1	2	1	1	-	1	2	1
C306.5	2	2	1	1	1	1	2	1	2	1	1	-	1	1	1

C306.6	2	2	1	1	1	1	2	1	1	1	1	-	-	-	-
C306.1	1	1	1	1	-	2	2	2	2	1	1	-	1	1	1
C306.2	1	2	1	1	-	2	2	2	2	1	1	-	1	1	2
C306.3	1	2	2	1	-	2	3	2	2	1	1	-	2	1	1

Subject Code :EE8681 NBA Code : C307 Title :Microprocessors and Microcontrollers Laboratory Semester :5

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C307.1	3	2	2	1	1	1	-	-	-	-	-	-	2	1	-
C307.2	3	2	2	1	1	1	-	-	-	-	-	1	2	1	-
C307.3	2	1	1	1	1	1	-	-	-	-	-	-	2	1	-
C307.4	3	2	2	1	1	1	-	-	-	-	-	-	2	1	-
C307.5	3	2	2	1	1	1	-	-	-	-	-	-	2	1	-
C307.6	3	2	2	1	1	1	-	-	-	-	-	1	2	1	-

Subject Code :EI8561 NBA Code : C307 Title :Industrial Instrumentation Laboratory Semester :5

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C307.1	3	3	3	2	2	1	1	-	-	-	1	1	3	2	1
C307.2	3	3	3	2	2	-	-	1	1	-	1	1	3	2	1
C307.3	3	3	3	2	2	-	-	-	-	-	1	1	3	2	1
C307.4	3	3	3	2	2	-	-	-	-	-	1	1	3	2	1
C307.5	3	3	3	2	2	-	-	-	-	-	1	1	3	2	1
C307.6	3	3	3	2	2	-	-	-	-	1	1	1	3	2	1

Subject Code :HS8581 NBA Code : C308 Title :Professional Communication Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C308.1	-	-	-	-	-	1	-	2	3	3	-	3	1	-	-
C308.2	-	-	-	-	-	1	-	2	3	3	-	3	1	-	-
C308.3	-	-	-	-	-	1	-	2	3	3	-	3	1	-	-
C308.4	-	-	-	-	-	1	-	2	3	3	-	3	1	-	-
C308.5	-	-	-	-	-	1	-	2	3	3	-	3	1	-	-
C308.6	-	-	-	-	-	1	-	2	3	3	-	3	1	-	-

Subject Code :IC8651 NBA Code : C309 Title :Advanced Control System Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C309.1	3	3	3	3	3	2	2	-	1	-	3	3	3	2	2
C309.2	3	3	3	3	3	2	2	-	1	-	3	3	3	2	2
C309.3	3	3	3	3	3	2	2	-	1	-	3	3	3	2	2
C309.4	3	3	3	3	3	2	2	-	-	1	3	3	3	2	2
C309.5	3	3	3	3	3	2	2	1	1	-	3	3	3	2	2
C309.6	3	3	3	3	3	2	2	-	1	1	3	3	3	2	2

Subject Code :EI8651 NBA Code : C310 Title :Logic and Distributed Control System Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C310.1	3	2	-	-	3	1	1	-	-	-	-	1	2	2	2
C310.2	3	2	-	-	3	1	-	1	-	-	-	1	2	2	1
C310.3	3	2	1	1	3	1	-	-	-	-	-	1	2	2	2
C310.4	3	2	1	-	3	1	-	-	-	-	-	1	2	2	2
C310.5	2	1	-	-	2	1	-	-	1	-	-	1	1	2	2

C310.6	3	2	-	1	3	1	-	-	-	1	1	1	2	2	1

Subject Code :EI8692 NBA Code : C310 Title :ELECTRONICS INSTRUMENTATION Semester :7

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C310.1	3	2	1	2	3	2	2	-	-	-	3	3	2	2	2
C310.2	3	2	1	2	3	2	2	-	-	-	3	3	2	2	2
C310.3	3	2	1	2	3	2	2	-	-	-	3	3	2	2	2
C310.4	3	2	1	2	3	2	2	-	-	-	3	3	2	2	2
C310.5	3	2	1	2	3	2	2	1	1	1	3	3	2	2	2
C310.6	3	2	1	2	3	2	2	-	-	-	3	3	2	2	2

Subject Code :EI8092 NBA Code : C312 Title :Thermal Power Plant Instrumentation Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C312.1	3	2	2	1	1	2	2	-	-	-	1	1	2	2	2
C312.2	3	2	2	1	1	2	2	-	-	-	-	1	2	2	2
C312.3	3	2	2	1	1	2	2	-	-	1	-	1	2	2	2
C312.4	3	2	2	1	1	2	2	-	-	-	-	1	2	2	2
C312.5	3	2	2	1	1	2	2	-	1	-	-	1	2	2	2
C312.6	3	2	2	1	1	2	2	1	-	-	-	1	2	2	2

Subject Code :EE8072 NBA Code : C313-E11 Title :MEMS and Nano Science Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C313-E11.1	2	2	2	2	2	-	-	1	-	-	1	3	1	1	1
C313-E11.2	2	2	2	2	2	-	-	-	-	1	1	3	1	1	1
C313-E11.3	2	2	2	2	2	-	-	-	1	-	1	3	1	1	1
C313-E11.4	2	2	2	2	2	-	-	-	-	-	1	3	1	1	1
C313-E11.5	2	2	2	2	2	-	1	-	-	-	1	3	1	1	1
C313-E11.6	2	2	2	2	2	1	-	-	-	-	1	3	1	1	1

Subject Code :EC8395 NBA Code : C314 Title :CommunicationEngineering Semester :4

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C314.1	2	2	2	1	1	-	-	-	-	1	-	1	2	2	-
C314.2	2	2	2	1	1	-	-	-	-	1	-	1	2	2	-
C314.3	2	2	2	1	1	-	-	-	-	1	-	1	2	2	-
C314.4	2	2	2	1	1	-	-	-	-	1	-	1	2	2	-
C314.5	2	2	2	1	1	-	-	-	-	1	-	1	2	2	-
C314.6	2	2	2	1	1	-	-	-	-	1	-	1	2	2	-

Subject Code :EE8071 NBA Code : C314 Title :Applied Soft Computing Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C314.1	3	2	2	3	3	2	-	-	2	1	2	1	2	2	2
C314.2	1	2	2	3	3	-	-	-	2	1	1	1	1	2	2
C314.3	3	2	2	3	3	-	-	2	-	1	2	1	2	2	2
C314.4	3	2	2	3	3	-	-	2	-	1	2	1	2	2	2
C314.5	1	2	2	1	1	2	1	-	2	1	1	1	2	1	1

C314.6	3	2	2	3	3	-	1	-	2	1	2	1	2	2	2

Subject Code :EI8661 NBA Code : C317 Title :Process Control Laboratory Semester :6

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C317.1	3	3	3	2	2	2	1	-	-	1	3	3	2	2	2
C317.2	3	3	3	2	2	2	-	1	-	-	3	3	2	2	2
C317.3	3	3	3	2	2	2	-	-	1	-	3	3	2	2	2
C317.4	3	3	3	2	2	2	-	1	-	-	3	3	2	2	2
C317.5	3	3	3	2	2	2	-	-	1	-	3	3	2	2	2
C317.6	3	3	3	2	2	2	-	-	-	1	3	3	2	2	2

Subject Code :EI8091 NBA Code : C402 Title :INSTRUMENTATION IN PETROCHEMICAL INDUSTRIES Semester :7

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C402.1	2	3	3	2	3	2	-	-	-	2	2	1	2	2	2
C402.2	2	3	3	2	1	2	-	-	-	2	1	2	2	2	2
C402.3	2	3	3	1	2	2	-	2	1	2	1	2	2	1	1
C402.4	2	3	3	2	3	2	-	-	-	2	1	1	2	2	1
C402.5	2	3	3	1	3	2	-	-	1	2	2	2	2	2	1
C402.6	2	3	3	2	2	2	-	2	-	1	2	1	2	2	1

Subject Code :EC8093 NBA Code : C403 Title :DIGITAL IMAGE PROCESSING Semester :7

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C403.1	2	2	2	2	2	-	-	2	2	2	2	2	2	2	-
C403.2	2	2	2	2	2	-	-	2	2	2	2	2	2	2	-
C403.3	2	2	2	2	2	-	-	2	2	2	2	2	2	2	-
C403.4	2	2	2	2	2	-	-	2	2	2	2	2	2	2	-
C403.5	2	2	2	2	2	-	-	2	2	2	2	2	2	2	-
C403.6	2	2	2	2	2	-	-	2	2	2	2	2	2	2	-

Subject Code :EI8751 NBA Code : C403 Title :INDUSTRIAL DATA NETWORKS Semester :7

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C403.1	3	2	2	2	2	-	-	-	-	-	3	3	2	1	1
C403.2	3	2	2	2	2	-	-	-	-	-	3	3	2	1	1
C403.3	3	2	2	2	2	1	-	-	-	-	3	3	2	1	1
C403.4	3	2	2	2	2	1	1	1	-	-	3	3	2	1	1
C403.5	3	2	2	2	2	1	1	-	-	-	3	3	2	1	1
C403.6	3	2	2	2	2	-	-	-	1	1	3	3	2	1	1

Subject Code :EI8075 NBA Code : C404-E31 Title :FIBRE OPTICS AND LASER INSTRUMENTATION Semester :7

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C404-E31.2	3	3	3	3	3	-	-	-	-	-	-	-	3	2	1
C404-E31.3	3	3	3	3	3	-	-	-	-	-	-	-	3	2	1
C404-E31.4	3	3	3	3	3	-	-	-	-	-	-	-	3	2	1
C404-E31.5	3	3	3	3	3	-	-	-	-	-	-	-	3	2	1
C404-	3	3	3	3	3	-	-	-	-	-	-	-	3	2	1

E31.6															
C404-E31.1	3	3	3	3	3	-	-	-	-	-	-	-	3	2	1

Subject Code :EI8761 NBA Code : C407 Title :Industrial Automation LAB Semester :7

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C407.1	2	3	2	3	2	2	2	-	-	-	2	1	3	2	2
C407.2	2	2	3	3	2	2	2	-	-	-	2	2	3	2	2
C407.3	2	2	3	2	1	2	1	-	-	-	1	2	3	2	2
C407.4	2	3	2	2	1	2	2	-	-	-	2	2	3	2	2
C407.5	2	2	2	2	2	2	2	-	-	-	2	2	3	2	2
C407.6	2	2	2	2	2	2	1	-	-	-	1	1	3	2	2

Subject Code :EI8762 NBA Code : C408 Title :Instrumentation System Design Laboratory Semester :7

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C408.1	3	3	3	2	2	1	-	-	-	-	2	2	3	2	-
C408.2	3	3	3	2	2	1	-	-	-	-	2	2	3	2	-
C408.3	3	3	3	2	2	1	-	-	-	-	2	2	3	2	-
C408.4	3	3	3	2	2	1	-	-	-	-	2	2	3	2	-
C408.5	3	3	3	2	2	1	-	-	-	-	2	2	3	2	-
C408.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Subject Code :GE8073 NBA Code : C410-E64 Title :Fundamentals of Nano Science Semester :8

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C410-E64.1	2	2	2	2	2	-	1	-	-	-	1	3	1	1	1
C410-E64.2	2	2	2	2	2	-	-	-	-	-	1	3	1	1	1
C410-E64.3	2	2	2	2	2	-	-	1	-	-	1	3	1	1	1
C410-E64.4	2	2	2	2	2	1	-	-	-	1	1	3	1	1	1
C410-E64.5	2	2	2	2	2	-	-	-	1	-	1	3	1	1	1
C410-E64.6	2	2	2	2	2	-	-	-	-	-	1	3	1	1	1

Subject Code :GE8076 NBA Code : C411E51 Title :PROFESSIONAL ETHICS IN ENGINEERING Semester :8

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C411E51.1	2	2	1	1	1	1	-	-	-	1	1	1	-	2	-
C411E51.2	2	2	1	1	1	1	-	-	-	1	1	1	-	2	-
C411E51.3	2	2	1	1	1	1	-	-	-	1	1	1	-	2	-
C411E51.4	2	2	1	-	1	1	-	-	-	1	1	1	-	2	-
C411E51.5	2	2	1	1	1	1	-	-	-	1	1	1	-	2	-
C411E51.6	2	2	1	1	1	1	-	-	-	1	1	1	-	2	-

Subject Code :IC8811 NBA Code : C413 Title :Project Work Semester :8

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C413.1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C413.2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C413.3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

C413.4	3	3	3	3	3	3	3	3	3	3	3	3	-	3	3
C413.5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C413.6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Subject Code :BS8161 NBA Code : CBS8161 Title :PHYSICS AND CHEMISTRY LABORATORY Semester :1

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
BS8161.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BS8161.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BS8161.4	3	2	1	1	-	1	-	1	2	-	1	1	-	-	-
BS8161.5	3	2	1	1	-	1	-	1	2	-	1	1	-	-	-
BS8161.6	3	2	1	1	-	1	-	1	2	-	1	1	-	-	-
BS8161.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Subject Code :OCS752 NBA Code : COEOCS752 Title :iNtroduction To C ProgramminG Semester :7

CoCode	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
OEOCS752.1	3	3	3	3	3	-	-	-	3	-	-	3	3	3	3
OEOCS752.2	3	3	3	3	3	-	-	-	3	-	-	3	3	3	3
OEOCS752.3	3	3	3	3	3	-	-	-	3	-	-	3	3	3	3
OEOCS752.4	3	3	3	3	3	-	-	-	3	-	-	3	3	3	3
OEOCS752.5	3	3	3	3	3	-	-	-	3	-	-	3	3	3	3
OEOCS752.6	3	3	3	3	3	-	-	-	3	-	-	3	3	3	3