



M.I.E.T. ENGINEERING COLLEGE

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai)
UG - CSE, EEE & MECH Programs Accredited by NBA, New Delhi
Accredited with 'A+' grade by NAAC
An ISO 9001:2015 Certified Institution
Recognized by UGC under section 2(f) & 12(B) of UGC Act, 1956
Trichy – Pudukkottai Road, Tiruchirappalli – 620 007. Phone:0431-2660 303
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Outcome Based Education



M.I.E.T. ENGINEERING COLLEGE

(AUTONOMOUS)

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)
Accredited by NBA (CIVIL, CSE, ECE, EEE & MECH)
Accredited with 'A+' grade by NAAC
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(Recognized by UGC under section 2(f) & 12(B) of UGC Act, 1956)
TRICHY - PUDUKKOTTAI MAIN ROAD, TRICHY - 620 007



Criterion 6 - Governance, Leadership and Management

6.5.2. The institution reviews its teaching and learning process, structures and methodologies of operations and learnings outcomes at periodic intervals through IQAC setup as per norms and recorded the incremental improvement in various activities.

OUTCOME BASED EDUCATION

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PROGRAMME OUTCOMES

PO1	Ability to apply knowledge of solving Mathematical problems, applied science and engineering.
PO2	Ability to propose and conduct practical experiments as well as to assert and recognize data in Civil Engineering.
PO3	Ability to design a structure, element or process to meet desired needs within economic, environmental, social, political, ethical, health and safety and sustainability.
PO4	Capability to task with multidisciplinary teams.
PO5	Capability to identify, makes, clarifies and simplify Civil Engineering crisis.
PO6	Ability to take up professional and ethical responsibility.
PO7	Capability to be in contact professionally and effectively.
PO8	Capability to realize the impacts of engineering solutions in global, economic, environmental and societal circumstances.
PO9	Ability to engage in continuous long-term learning.
PO10	Capabilities of accepting current issues and develop continuously.
PO11	Capability to employ the talent, technique and contemporary Engineering tools.
PO12	Capability to apply the Engineering and management principles to one's individual work and to supervise the projects as a member and team leader.



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PROGRAMME SPECIFIC OUTCOMES – CIVIL ENGINEERING

PSO 1	Enhancing the employability skills by making the students capable of qualifying National level competitive examinations.
PSO 2	Competency in professional areas like water supply and sanitation, Design, Measurement and Quality Control, Geo techniques and transportation.
PSO 3	Analyze, Design, Construct, Maintain and Operate infrastructural projects

PROGRAMME SPECIFIC OUTCOMES –COMPUTER SCIENCE AND ENGINEERING

PSO 1	Ability to apply programming and interpersonal skills to implement various algorithms for complex engineering problems.
PSO 2	Ability to design effective solutions for real time problems of both industry and society using cutting edge technologies.

PROGRAMME SPECIFIC OUTCOMES – ELECTRICAL AND ELECTRONICS ENGINEERING

PSO 1	Apply fundamental knowledge to identify, formulate, design and investigate various problems of Electrical and Electronics circuits, power electronics and power systems.
PSO 2	Graduants are able to apply their technical and professional skills in multidisciplinary environments.


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**PROGRAMME SPECIFIC OUTCOMES – ELECTRONICS AND
COMMUNICATION ENGINEERING**

PSO 1	To understand concepts of Electronics, Computer & Communication, Communication Systems, Signal Processing, VLSI and embedded systems design have a sustainable passion to achieve successful career by fulfill societal needs.
PSO 2	To solve electronics and communication engineering problems using latest hardware and software tools, along with analytical skills to arrive cost effective and appropriate solutions.

PROGRAMME SPECIFIC OUTCOMES – MECHANICAL ENGINEERING

PSO 1	Ability to apply the concepts of Mechanical Engineering fields to design mechanical systems and processes.
PSO 2	Ability to demonstrate professional and entrepreneurial skills to meet the industrial requirements.


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SCIENCE AND HUMANITIES



A handwritten signature in green ink, appearing to read 'A. S. S.', is positioned above the printed name of the principal.

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REGULATION – 2017

SEMESTER - I

S.No	COURSE OUTCOME	BT LEVEL
C101/ HS8151/ COMMUNICATIVE ENGLISH		
C101.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using communicative strategies.	K1
C101.2	Write coherently and flawlessly using a wide diction.	K2
C101.3	Read different genres of texts adopting various reading strategies.	K2
C101.4	Comprehend different spoken discourses in different accents.	K2
C101.5	Communicate in group and to larger audience appropriately.	K1
C101.6	Enable to understand process descriptions and present it in the relevant field.	K2
C102/ MA8151/ENGINEERING MATHEMATICS		
C102.1	Find the eigen values and eigen vectors to diagonalise and reduce a matrix to quadratic form.	K2
C102.2	Check the converges, diverges of infinite series	K2
C102.3	Find the solutions of algebraic equations solved by iterative methods gets close to the required solution.	K2
C102.4	Obtain the evaluate and envelopes of a given curves by means of radius and centre of curvature	K2
C102.5	Calculate the maxima and minima value functions of two variables	K2
C102.6	Find the area of plain curves and volume of solid using double and triple integrals	K2
C103/ PH8151/ENGINEERING PHYSICS		
C103.1	Discuss various crystal structures and different crystal growth techniques	K1
C103.2	Demonstrate the properties of elasticity and heat transfer through objects	K1
C103.3	Explain black body radiation, properties of matter waves and Schrodinger wave equations	K1
C103.4	Illustrate the acoustic requirements, production and application of ultrasonics.	K2
C103.5	Examine the characteristics of laser and optical fiber	K1
C103.6	Improve the property of the materials for the application of commercial devices	K2


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C104/ CY8151/ENGINEERING CHEMISTRY		
C104.1	Classify polymers and their utility in the industries and describe the techniques of polymerization and properties of polymers	K2
C104.2	Relate various thermodynamic functions such as enthalpy, entropy, free energy and their importance and equilibrium constant and its significance	K1
C104.3	Explain the photophysical processes such as fluorescence and phosphorescence and various components of UV and IR	K2
C104.4	Illustrate the phase transitions of one component and two component systems and the types of alloys and their applications in industries	K1
C104.5	Outline the synthesis, characteristics and the applications of nano	K2
C104.6	Knowing the various applications related to photophysical laws	K2
C105 / GE8151/ PROBLEM SOLVING AND PYTHON PROGRAMMING		
C105.1	Demonstrate algorithm, flowchart for various programs	K2
C105.2	Do simple programs using python programming basics	K2
C105.3	Illustrate programs by using arrays and string functions	K2
C105.4	Develop simple programs using functions and pointers	K2
C105.5	Design mini projects with structures.	K3
C105.6	Develop applications using python Programming Language	K3
C106 / GE8152/ ENGINEERING GRAPHICS		
C106.1	Construct engineering curves	K2
C106.2	Sketch all the views of engineering objects in free hand.	K2
C106.3	Draw the projection of points, lines and planes.	K3
C106.4	Draw the projection of solids in any orientation.	K2
C106.5	Develop the section and lateral surfaces of sectioned solids	K2
C106.6	Sketch the solids in perspective and isometric approaches	K2
C107 / GE8161/ PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY		
C107.1	Demonstrate algorithm, flowchart for various programs	K3
C107.2	Do simple programs using python programming basics	K2
C107.3	Illustrate programs by using arrays and string functions	K2
C107.4	Develop simple programs using functions and pointers	K2
C107.5	Design mini projects with structures.	K3
C107.6	Develop applications using python Programming Language	K2


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C108 / BS8161/ PHYSICS AND CHEMISTRY LABORATORY		
C108.1	The student will be able to analyze the physical principle involved in the various instruments, also relate the principle to new application.	K2
C108.2	The various experiments in the areas of elasticity, optics, mechanics and thermal physics will nurture the students in all branches of Engineering.	K3
C108.3	The students will be able to think innovatively and also improve the creative skills that are essential for engineering.	K2
SEMESTER – II		
C109 / HS8251/ TECHNICAL ENGLISH		
C109.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using communicative strategies.	K1
C109.2	Write coherently and flawlessly using a wide diction.	K1
C109.3	Read different genres of texts adopting various reading strategies.	K2
C109.4	Comprehend different spoken discourses in different accents.	K2
C109.5	Communicate in group and to larger audience appropriately.	K1
C109.6	Enable to understand process descriptions and present it in the relevant	K2
C110 / MA8251/ ENGINEERING MATHEMATICS II		
C110.1	Apply the vector concepts of vector calculus in engineering disciplines	K3
C110.2	Apply the knowledge of mathematics in solving higher order differential equations with constant coefficients.	K3
C110.3	To have the basic knowledge of differential equation in typical mechanical fields.	K2
C110.4	Understand and apply the knowledge of Laplace transform in solving	K2
C110.5	Understand the standard techniques of complex variable theory and use them to solve core engineering problems.	K2
C110.6	Evaluate real integrals by applying concept of complex integration.	K2
C111 / PH8253/PHYSICS FOR ELECTRONICS ENGINEERING		
C111.1	Gain knowledge on classical and quantum electron theories, and energy band structures,	K2
C111.2	Acquire knowledge on basics of semiconductor physics and its applications in various devices,	K2
C111.3	Get knowledge on magnetic and dielectric properties of materials,	K2
C111.4	Have the necessary understanding on the functioning of optical materials for optoelectronics,	K2
C111.5	Understand the basics of quantum structures and their applications in spintronics and carbon electronics.	K2
C112/ BE8254/BASIC ELECTRICAL AND INSTRUMENTATION ENGINEERING		
C112.1	Fundamentals of semiconductor and basic theorems used in Electrical	K1


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	circuits	
C112.2	Design amplifier circuits under CB, CE, CC Configurations.	K2
C112.3	Design the Adders – Flip-Flops – Registers and Counters with logic gates.	K2
C112.4	Discuss the Principles of Amplitude and Frequency Modulations and various blocks Communication Systems	K2
C112.5	Demonstrate the working of Television systems, FAX machines and micro wave systems.	K2
C113 /EC8251/CIRCUIT ANALYSIS		
C113.1	Develop the capacity to analyze electrical circuits, apply the circuit theorems in real time	K3
C113.2	Design and understand and evaluate the AC and DC circuits.	K2
C113.3	Practical implications of the fundamentals of Ohm's law, Kirchhoff's current and voltage laws	K3
C113.4	Accurate measurement of voltage, current, power and impedance of any circuit	K2
C113.5	DC analysis, Transient analysis and Frequency analysis of a given circuit depending on types of elements	K2
C113.6	Practical implementation of the fundamental electrical theorems and modeling of simple electrical systems	K3
C114/ EC8252/ELECTRONIC DEVICES		
C114.1	Describe the principle and characteristics of semiconductor diode	K1
C114.2	Analyze various transistor configurations	K2
C114.3	Construct large signal modeling and small signal modeling of a transistor	K2
C114.4	Describe the principle of operation and characteristics of special Semiconductor diodes	K2
C114.5	Discuss the operation of various semiconductor photo devices and power electronic devices	K2
C114.6	Implement real time applications using electronic devices	K3
C115/ EC8261/CIRCUITS AND DEVICES LABORATORY		
C115.1	Identify the basic devices and its configurations	K2
C115.2	Analyze the resistive circuits with different sources	K2
C115.3	Obtain the resonance for different configurations of RLC	K2
C115.4	Explain the response of RLC circuit with different inputs	K2
C115.5	Understand the operation of basic solid state devices	K2
C115.6	Plot the response of wave shaping circuits	K2


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C116 / GE8261/ ENGINEERING PRACTICES LABORATORY		
C116.1	Gets exposure regarding Joining operations in engineering materials.	K3
C116.2	Carry out the basic machining operations in engineering materials.	K2
C116.3	Carry out basic home electrical works and appliances	K3
C116.4	Measure the electrical quantities	K2
C116.5	Understand basic electronic components.	K2
C116.6	Integrate the components and gates using soldering practices.	K2

S.No	CO-PO MAPPING											
	HS8151- COMMUNICATIVE ENGLISH											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101.1	2	-	-	-	-	2	2	-	2	3	-	2
C101.2	-	-	-	-	-	2	2	-	2	3	-	2
C101.3	-	2	-	2	2	2	2	-	2	3	-	2
C101.4	2	-	-	-	-	2	2	-	2	3	-	2
C101.5	2	-	-	-	-	2	2	-	2	3	-	2
C101.6	2	-	-	-	3	2	2	-	2	3	-	2
MA8151- ENGINEERING MATHEMATICS - I												
C102.1	3	2	2	-	-	2	-	-	-	3	-	2
C102.2	2	3	2	-	-	-	-	-	-	-	-	-
C102.3	3	2	2	-	-	-	-	-	-	2	-	-
C102.4	3	2	3	2	2	-	-	2	-	2	-	-
C102.5	3	3	2	2	-	2	-	-	-	-	-	2
C102.6	3	2	2	2	2	2	-	2	-	-	2	2
PH8151- ENGINEERING PHYSICS												
C103.1	3	2	2	3	2	2	-	-	-	-	-	3
C103.2	3	3	3	2	-	2	-	-	-	-	-	3
C103.3	3	2	-	-	-	-	-	-	-	-	-	3
C103.4	3	3	3	3	2	2	-	-	-	-	-	2


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C103.5	3	2	3	3	2	3	2	-	-	-	-	2
C103.6	3	2	3	3	2	3	2	-	-	-	-	2
CY8151- ENGINEERING CHEMISTRY												
C104.1	2	2	2	2	2	-	3	-	2	-	2	3
C104.2	2	2	2	2	2	-	-	-	2	-	2	2
C104.3	2	2	2	2	2	-	2	-	2	-	2	2
C104.4	2	2	2	2	2	-	2	-	2	-	2	2
C104.5	2	2	2	2	2	-	2	2	2	-	2	2
C104.6	2	2	2	2	2	-	2	2	2	-	2	2
GE8151- PROBLEM SOLVING AND PYTHON PROGRAMMING												
C105.1	3	2	-	-	-	-	-	-	-	-	-	-
C105.2	3	2	2	-	-	-	-	-	-	-	-	-
C105.3	3	2	2	-	-	-	-	-	-	-	-	-
C105.4	3	2	2	2	2	-	-	-	-	-	-	-
C105.5	3	2	2	2	2	2	-	2	-	-	-	-
C105.6	3	2	2	2	2	2	-	2	-	-	-	-
GE8152- ENGINEERING GRAPHICS												
C106.1	3	3	3	2	2	-	-	-	-	2	3	2
C106.2	3	3	3	2	2	-	-	-	-	3	2	2
C106.3	3	3	3	2	2	-	-	-	-	2	2	2
C106.4	3	3	3	2	3	-	-	-	-	2	2	2
C106.5	3	3	3	2	2	-	-	-	-	3	2	2
C106.6	3	3	3	2	3	-	-	-	-	2	2	2
GE8161- PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY												
C107.1	3	-	-	-	-	-	-	-	-	-	-	-
C107.2	3	3	3	2	-	-	-	-	-	-	-	-
C107.3	3	3	3	2	-	-	-	-	-	-	-	-
C107.4	3	2	3	2	-	-	-	-	-	-	-	-
C107.5	3	2	3	2	-	-	-	-	-	-	-	-


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C107.6	3	2	3	2	-	-	-	-	-	-	-	-
BS8161- PHYSICS AND CHEMISTRY LABORATORY												
C108.1	3	2	3	-	-	-	-	-	3	2	2	2
C108.2	3	2	2	-	-	-	-	-	3	2	2	3
C108.3	3	3	2	-	-	-	-	-	3	2	2	3
C108.4	3	2	2	-	-	-	-	-	3	2	2	2
C108.5	3	3	2	-	-	-	-	-	3	2	2	3
C108.6	3	2	2	-	-	-	-	-	3	2	2	2
HS8251- TECHNICAL ENGLISH												
C109.1	2	2	-	-	-	2	2	-	2	3	-	2
C109.2	2	3	-	-	-	2	2	-	2	3	-	2
C109.3	2	2	-	-	-	2	2	-	2	3	-	2
C109.4	2	2	-	-	-	2	2	-	2	3	-	2
C109.5	2	3	-	-	-	2	2	-	2	3	-	2
C109.6	2	3	-	-	-	2	2	-	2	3	-	2
MA8251- ENGINEERING MATHEMATICS – II												
C110.1	3	3	3	3	2	2	-	-	-	2	-	-
C110.2	3	2	2	-	-	2	-	-	-	-	-	-
C110.3	3	3	3	-	-	2	-	2	-	2	-	2
C110.4	3	2	2	-	2	-	-	-	-	-	-	-
C110.5	3	3	3	2	2	-	-	-	-	2	2	-
C110.6	2	2	3	2	2	2	-	-	-	2	-	2
PH8253- PHYSICS FOR ELECTRONICS ENGINEERING												
C111.1	2	2	-	-	-	-	-	-	-	-	-	-
C111.2	3	2	3	-	-	2	2	-	-	3	-	2
C111.3	3	3	3	3	-	2	2	-	-	3	-	2
C111.4	3	3	3	3	-	2	2	-	-	3	-	2
C111.5	3	2	2	-	2	2	2	-	2	3	-	3
C111.6	3	2	2	-	2	3	2	-	2	3	-	3


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BE8254- BASIC ELECTRICAL AND INSTRUMENTATION												
ENGINEERING												
C112.1	2	2	2	-	2	-	-	-	-	-	2	2
C112.2	2	2	2	-	2	-	-	-	-	-	2	2
C112.3	2	2	2	2	2	2	-	-	-	-	2	2
C112.4	2	2	2	-	2	2	-	-	-	-	2	2
C112.5	2	2	2	-	2	2	2	-	2	-	2	2
C112.6	2	2	2	2	2	2	2	-	2	-	2	2
EC8251- CIRCUIT ANALYSIS												
C113.1	3	2	2	-	2	-	-	-	-	-	-	2
C113.2	3	2	2	-	2	-	-	-	-	-	-	2
C113.3	3	2	2	-	2	-	-	-	-	-	-	2
C113.4	3	2	2	-	2	-	-	-	-	-	-	2
C113.5	3	2	2	-	2	-	-	-	-	-	-	2
C113.6	3	2	2	-	2	-	-	-	-	-	-	2
EC8252- ELECTRONIC DEVICES												
C114.1	3	3	3	2	2	2	-	2	2	2	3	2
C114.2	3	3	3	2	2	-	-	-	-	3	2	2
C114.3	3	3	3	2	2	-	-	-	-	2	2	2
C114.4	3	3	3	2	3	-	2	-	-	2	2	2
C114.5	3	3	3	2	2	-	-	-	-	3	2	2
C114.6	3	3	3	2	3	-	-	2	-	2	2	2
EC8261- CIRCUITS AND DEVICES LABORATORY												
C115.1	2	-	2	2	3	-	2	2	3	2	3	2
C115.2	2	-	2	3	3	-	2	2	2	2	3	2
C115.3	2	-	2	2	2	-	2	2	2	2	3	2
C115.4	2	-	2	2	3	-	2	2	3	2	3	2
C115.5	2	-	2	3	3	-	2	2	2	2	3	2
C115.6	2	-	2	2	2	-	2	2	2	2	3	2


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GE8261- ENGINEERING PRACTICES LABORATORY												
C116.1	3	-	-	-	-	-	-	-	-	-	-	-
C116.2	3	3	3	-	-	-	-	2	-	-	-	-
C116.3	3	3	3	-	-	-	-	2	-	-	-	-
C116.4	3	2	3	-	-	-	-	2	-	-	-	-
C116.5	3	2	3	-	-	-	-	2	-	-	-	-
C116.6	3	2	3	2	-	-	-	2	-	-	-	-
C116.6	3	3	3	2	-	-	-	2	-	2	-	2


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S.No	COURSE OUTCOME	BT LEVEL
SEMESTER-III		
C301- MA8353 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS		
C301.1	To introduce the basic concepts of PDE for solving standard partial differential equations.	K2
C301.2	To introduce Fourier series analysis which is central to many applications in engineering apart from its use in solving boundary value problems	K3
C301.3	To acquaint the student with Fourier series techniques in solving heat flow problems used in various situations.	K3
C301.4	To acquaint the student with Fourier transform techniques used in wide variety of Situations.	K2
C301.5	To introduce the effective mathematical tools for the solutions of partial differential Equations that model several physical processes and to develop Z transform techniques for discrete time systems.	K3
C301.6	After successful completion of the course, the students will have ability to solve, analyze and obtain solutions for the transforms and differential related applications in Civil Engineering	K3
C302-CE8301 STRENGTH OF MATERIALS I		
C302.1	Understand the concepts of stress and strain, principal stresses and principal planes.	K2
C302.2	Determine Shear force and bending moment in beams and understand concept of theory of simple bending.	K3
C302.3	Calculate the deflection of beams by different methods and selection of method for determining slope or deflection.	K3
C302.4	Apply basic equation of torsion in design of circular shafts and helical springs.	K3
C302.5	Analyze the pin jointed plane and space trusses	K3
C302.6	After successful completion of the course, the students will have adequate knowledge on materials strength and its behavior under external loading.	K3
C303-CE8302 FLUID MECHANICS		
C303.1	Get a basic knowledge of fluids in static, kinematic and dynamic equilibrium.	K1
C303.2	Understand and solve the problems related to equation of motion.	K3
C303.3	Gain knowledge about dimensional and model analysis.	K2
C303.4	Learn types of flow and losses of flow in pipes.	K2
C303.5	Understand and solve the boundary layer problems.	K3
C303.6	After successful completion of the course, the students will have	K2


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	adequate knowledge on property of fluid and behavior fluid under external loading.	
C304 - CE8351 SURVEYING		
C304.1	The use of various surveying instruments and mapping	K2
C304.2	Measuring Horizontal angle and vertical angle using different instruments	K3
C304.3	Methods of Leveling and setting Levels with different instruments	K2
C304.4	Concepts of astronomical surveying and methods to determine time, longitude, latitude and azimuth	K3
C304.5	Concept and principle of modern surveying.	K2
C304.6	After successful completion of the course, the students will have adequate knowledge and understanding on various techniques available in basic surveying and they will be aware of modern surveying techniques available.	K2
C305 - CE8391 CONSTRUCTION MATERIALS		
C305.1	Compare the properties of most common and advanced building materials.	K2
C305.2	Understand the typical and potential applications of lime, cement and aggregates	K2
C305.3	Know the production of concrete and also the method of placing and making of concrete Elements.	K2
C305.4	Understand the applications of timbers and other materials	K2
C305.5	Understand the importance of modern material for construction.	K2
C305.6	After successful completion of the course, the students will have adequate knowledge and understanding on the materials used in the construction industry and will have an idea on creating innovative building materials for the well-being of the society.	K2
C306-CE8392 ENGINEERING GEOLOGY		
C306.1	Will be able to understand the importance of geological knowledge such as earth, Earthquake, volcanism and the action of various geological agencies.	K2
C306.2	Will get basics knowledge on properties of minerals.	K1
C306.3	Gain knowledge about types of rocks, their distribution and uses.	K2
C306.4	Will understand the methods of study on geological structure.	K2
C306.5	Will understand the application of geological investigation in projects such as dams, tunnels, bridges, roads, airport and harbor	K2
C306.6	After successful completion of the course, the students will have understood the importance of knowing the geology of a particular location before starting a construction activity.	K2
C307 - CE8311 CONSTRUCTION MATERIALS LABORATORY		
C307.1	Conduct Quality Control tests on Fine Aggregates	K3
C307.2	Conduct Quality Control tests on Coarse Aggregates	K3
C307.3	Conduct Quality Control tests on fresh concrete	K3
C307.4	Determine the strength properties of hardened concrete	K3


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C307.5	Perform Quality Control tests on Bricks, blocks and tiles	K3
C307.6	After successful completion of the laboratory course, the students will have understood the various kinds of material testing prevailing in the construction and manufacturing industries.	K3
C308-CE8361 SURVEYING LABORATORY		
C308.1	Gain practical knowledge on handling basic survey instruments	K3
C308.2	Gain practical knowledge on handling Theodolite, Tacheometry	K3
C308.3	Gain practical knowledge on handling Total Station and GPS	K3
C308.4	Gain adequate knowledge to carryout Triangulation and Astronomical surveying	K3
C308.5	Gain adequate knowledge on general field marking for various engineering projects and Location of site	K3
C308.6	After successful completion of the laboratory course, the students will have understood the usage of various surveying equipment and their applications in current practice.	K3
C309 - HS8381- INTERPERSONAL SKILLS/LISTENING AND SPEAKING		
C309.1	Listen and respond appropriately.	K2
C309.2	Participate in group discussions	K3
C309.3	Make effective presentations	K3
C309.4	Participate confidently and appropriately in conversations both formal and informal	K2
C309.5	Improve general and academic listening skills	K2
C309.6	After successful completion of the laboratory course, the students will have ability to communicate with confidence.	K2
SEMESTER-IV		
C401 - MA8491 NUMERICAL METHODS		
C401.1	Understand the basic concepts and techniques of solving algebraic and transcendental equations	K2
C401.2	Appreciate the numerical techniques of interpolation and error approximations in various intervals in real life situations.	K2
C401.3	Apply the numerical techniques of differentiation and integration for engineering problems.	K3
C401.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations	K3
C401.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications	K3
C401.6	After successful completion of the laboratory course, the students will have adequate knowledge on applying these mathematical formulations in civil engineering applications	K3

C402 - CE8401 CONSTRUCTION TECHNIQUES AND PRACTICES		
C402.1	Know the different construction techniques and structural systems	K2
C402.2	Understand various techniques and practices on masonry construction, flooring, and roofing.	K2
C402.3	Plan the requirements for substructure construction.	K2
C402.4	Know the methods and techniques involved in the construction of various types of super structures	K2
C402.5	Select, maintain and operate hand and power tools and equipment used in the building construction sites.	K2
C402.6	After successful completion of the course, the students will have understood the different construction techniques practices being followed in the construction industry.	K2
C403 - CE8402 STRENGTH OF MATERIALS II		
C403.1	Determine the strain energy and compute the deflection of determinate beams, frames and trusses using energy principles.	K3
C403.2	Analyze propped cantilever, fixed beams and continuous beams using theorem of three moment equation for external loadings and support settlements.	K3
C403.3	Find the load carrying capacity of columns and stresses induced in columns and cylinders	K3
C403.4	Determine principal stresses and planes for an element in three dimensional state of stress and study various theories of failure	K3
C403.5	Determine the stresses due to Unsymmetrical bending of beams, locate the shear center, and find the stresses in curved beams.	K3
C403.6	After successful completion of the course, the students will have adequate knowledge and understanding on the behavior of different types of structural elements used in the day to day life.	K2
C404 - CE 8403 APPLIED HYDRAULIC ENGINEERING		
C404.1	Apply their knowledge of fluid mechanics in addressing problems in open channels.	K3
C404.2	Able to identify an effective section for flow in different cross sections.	K2
C404.3	To solve problems in uniform, gradually and rapidly varied flows in steady state conditions.	K3
C404.4	Understand the principles, working and application of turbines.	K2
C404.5	Understand the principles, working and application of pumps.	K2
C404.6	After successful completion of the course, the students will have understanding on properties of fluid flow and machines propelled by the fluid flow	K2
C405 - CE8404 CONCRETE TECHNOLOGY		
C405.1	The various requirements of cement, aggregates and water for making concrete	K2
C405.2	The effect of admixtures on properties of concrete	K2

C405.3	The concept and procedure of mix design as per IS method	K2
C405.4	The properties of concrete at fresh and hardened state	K2
C405.5	The importance and application of special concretes.	K2
C405.6	After successful completion of the course, the students will have understanding on properties of concrete and its applications.	K2
C406 - CE8491 SOIL MECHANICS		
C406.1	Classify the soil and assess the engineering properties and index properties	K2
C406.2	Understand the stress concepts in soils	K2
C406.3	Understand and identify the settlement in soils	K2
C406.4	Determine the shear strength of soil	K2
C406.5	Analyze both finite and infinite slopes	K3
C406.6	After successful completion of the course, the students will have understanding on basic properties of soil, its strength and its resistance to the external force.	K1
C407 - CE8481 STRENGTH OF MATERIALS LABORATORY		
C407.1	Acquire required knowledge in the area of testing steel rod	K3
C407.2	Acquire required knowledge in the area of testing wood	K3
C407.3	Acquire required knowledge in the area of testing metal	K3
C407.4	Acquire required knowledge in the area of testing components of structural elements	K3
C407.5	Learn deflection and compression test	K3
C407.6	After successful completion of the laboratory course, the students will have adequate knowledge on testing of wood and metals and will have idea on various testing methodologies available.	K3
C408 - CE8461 HYDRAULIC ENGINEERING LABORATORY		
C408.1	The students will be able to study the Characteristics of pumps	K3
C408.2	The students will be able to study the Characteristics of turbine	K3
C408.3	The students will be able to measure flow in pipes and determine frictional losses.	K3
C408.4	The students will be able to develop characteristics of pumps and turbines	K3
C408.5	The students will be able to verify the principles studied in theory by performing the experiments in lab.	K3
C408.6	After successful completion of the laboratory course, the students will have adequate knowledge on various hydraulic equipment used in the industry.	
C409 - HS8461 ADVANCED READING AND WRITING		
C409.1	Write different types of essays	K2
C409.2	Write winning job applications.	K2
C409.3	Read and evaluate texts critically.	K2
C409.4	Display critical thinking in various professional contexts.	K2

C409.5	Ability to write manuscripts and testimonials	K2
C409.6	After successful completion of the laboratory course, the students will have ability to read and write like a professional.	K2
SEMESTER-V		
C501- CE8501 DESIGN OF REINFORCED CEMENT CONCRETE ELEMENTS		
C501.1	Understand the various design methodologies for the design of RC elements.	K3
C501.2	Know the analysis and design of flanged beams by limit state method and sign of beams for shear, bond and torsion.	K3
C501.3	Design the various types of slabs and staircase by limit state method.	K3
C501.4	Design columns for axial, uniaxial and biaxial eccentric loadings.	K3
C501.5	Design of footing by limit state method.	K3
C501.6	After successful completion of the course, the students will have adequate knowledge on design of beam, column and footing by Limit State Method.	K3
C502-CE8502 STRUCTURAL ANALYSIS I		
C502.1	Analyze continuous beams, pin-jointed indeterminate plane frames and rigid plane frames by strain energy method	K3
C502.2	Analyse the continuous beams and rigid frames by slope deflection method.	K3
C502.3	Understand the concept of moment distribution and analysis of continuous beams and rigid frames with and without sway.	K3
C502.4	Analyse the indeterminate pin jointed plane frames continuous beams and rigid frames using matrix flexibility method.	K3
C502.5	Understand the concept of matrix stiffness method and analysis of continuous beams, pin jointed trusses and rigid plane frames.	K3
C502.6	After successful completion of the course, the students will have adequate knowledge on analysis of different structural elements.	K3
C503 - EN8491 WATER SUPPLY ENGINEERING		
C503.1	An insight into the structure of drinking water supply systems, including water transport, treatment and distribution	K2
C503.2	The knowledge in various unit operations and processes in water treatment	K2
C503.3	An ability to design the various functional units in water treatment	K3
C503.4	An understanding of water quality criteria and standards, and their relation to public health	K2
C503.5	The ability to design and evaluate water supply project alternatives on basis of chosen	K3
C503.6	After successful completion of the course, the students will have ability to design various treatment plants and other water supply projects in their future.	K2


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C504-CE8591 FOUNDATION ENGINEERING		
C504.1	Understand the site investigation, methods and sampling.	K2
C504.2	Get knowledge on bearing capacity and testing methods.	K2
C504.3	Design shallow footings.	K3
C504.4	Determine the load carrying capacity, settlement of pile foundation.	K3
C504.5	Determine the earth pressure on retaining walls and analysis for stability.	K3
C504.6	After successful completion of the course, the students will have acquired knowledge site testing, and will be able to design various types of foundations for structures.	K2
C505 -GI8013 ADVANCED SURVEYING		
C505.1	Know the astronomical surveying	K2
C505.2	Do the photogrammetric surveying and interpretation	K2
C505.3	Solve the field problems with Total station	K3
C505.4	Know the GPS surveying and the data processing	K2
C505.5	Understand the route surveys and tunnel alignments	K2
C505.6	After successful completion of the course, the students will have acquired knowledge about handling advanced surveying equipment like Total Station.	K2
C506 - ORO551 RENEWABLE ENERGY SOURCES		
C506.1	Understanding the physics of solar radiation.	K2
C506.2	Ability to classify the solar energy collectors and methodologies of storing solar energy.	K2
C506.3	Knowledge in applying solar energy in a useful way.	K2
C506.4	Knowledge in wind energy and biomass with its economic aspects.	K2
C506.5	Knowledge in capturing and applying other forms of energy sources like wind, biogas and geothermal energies.	K2
C506.6	After successful completion of the course, the students will have acquired knowledge about possible ways of utilization or harvesting of passive and active form of renewable energy for the day to day life.	K2
C507 - CE8511 SOIL MECHANICS LABORATORY		
C507.1	Classifying soil based on index properties of soils (coarse and fine).	K3
C507.2	Classifying soil based on consistency limit of fine grained soils	K3
C507.3	Interpreting the shear strength of all types of soils by conducting lab tests	K3
C507.4	Interpreting the shear strength of all types of soils by conducting lab tests	K3
C507.5	Understanding the engineering properties of soils by conducting field tests	K3
C507.6	After successful completion of the laboratory course, the students will be able to do various in-situ and ex-situ soil testing.	K3
C508 - CE8512 WATER AND WASTE WATER ANALYSIS LABORATORY		
C508.1	Quantify the pollutant concentration in water and wastewater	K3
C508.2	Suggest the type of treatment required and amount of dosage required	K3


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	for the treatment	
C508.3	Examine the conditions for the growth of micro-organisms	K3
C508.4	Suggest the type of treatment required to reduce e-coli in water	K3
C508.5	Compare the analysis of treated water among different treatments	K3
C508.6	After successful completion of the laboratory course, the students will have acquired knowledge on conducting different water treatment ways.	K3
C509 - CE8513 SURVEY CAMP		
C509.1	To use all surveying equipment, prepare LS &CS	K3
C509.2	To prepare contour maps by triangulation method	K3
C509.3	To prepare maps and grids by Trilateration method	K3
C509.4	To prepare contour maps by rectangulation method	K3
C509.5	To carryout surveying works related to land and civil engineering projects	K3
C509.6	After successful completion of the survey camp, the students will have the ability to handle land surveying equipment and acquired adequate knowledge on different types of surveying.	K3
SEMESTER-VI		
C601 - CE8601 DESIGN OF STEEL STRUCTURAL ELEMENTS		
C601.1	Understand the concepts of various design philosophies	K3
C601.2	Design common bolted and welded connections for steel structures	K3
C601.3	Design tension members and understand the effect of shear lag.	K3
C601.4	Understand the design concept of axially loaded columns and column base connections.	K3
C601.5	Understand specific problems related to the design of laterally restrained and unrestrained steel beams.	K3
C601.6	After successful completion of the course the student will acquire knowledge on design of steel structures and able to understand advanced researches in this field.	K3
C602 - CE8602 STRUCTURAL ANALYSIS II		
C602.1	Draw influence lines for statically determinate structures and calculate critical stress resultants.	K3
C602.2	Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams.	K3
C602.3	Analyse of three hinged, two hinged and fixed arches.	K3
C602.4	Analyse the suspension bridges with stiffening girders	K3
C602.5	Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames.	K3
C602.6	After successful completion of the course the student will be capable of analyzing various types of structural problems.	K3
C603 - CE8603 IRRIGATION ENGINEERING		
C603.1	Have knowledge and skills on crop water requirements.	K2
C603.2	Understand the methods and management of irrigation	K2


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C603.3	Gain knowledge on types of Impounding structures	K2
C603.4	Understand methods of irrigation including canal irrigation.	K2
C603.5	Get knowledge on water management on optimization of water use.	K2
C603.6	After successful completion of the course the student will have the ability to understand knowledge on design of various irrigation structures.	K2
C604 - CE8604 HIGHWAY ENGINEERING		
C604.1	Get knowledge on planning and aligning of highway	K2
C604.2	Geometric design of highways	K3
C604.3	Design flexible and rigid pavements.	K3
C604.4	Gain knowledge on Highway construction materials, properties, testing methods	K3
C604.5	Understand the concept of pavement management system, evaluation of distress and maintenance of pavements.	K3
C604.6	After successful completion of this course, the students will be able understand better on types of pavements and its construction methods and management methods.	K2
C605 - EN8592 WASTEWATER ENGINEERING		
C605.1	An ability to estimate sewage generation and design sewer system including sewage pumping stations	K2
C605.2	The required understanding on the characteristics and composition of sewage, self-purification of streams	K2
C605.3	An ability to perform basic design of the unit operations and processes that are used in sewage treatment	K3
C605.4	Understand the standard methods for disposal of sewage	K2
C605.5	Gain knowledge on sludge treatment and disposal	K2
C605.6	After successful completion of the course students will be able to design sewer systems and gain knowledge on solid waste management, the need of the hour.	K2
C606 - CE8004 URBAN PLANNING AND DEVELOPMENT		
C606.1	Describe basic issues in urban planning	K2
C606.2	Formulate plans for urban and rural development and	K2
C606.3	Plan and analyse socio economic aspects of urban and rural planning	K3
C606.4	Design of urban development projects	K3
C606.5	Manage urban development projects.	K2
C606.6	After successful completion of this course, students will have understanding on urban and rural planning strategies for our country.	K2
C607 - CE8612 IRRIGATION AND ENVIRONMENTAL ENGINEERING DRAWING		
C607.1	Acquire knowledge on design of tank and its components	K2
C607.2	Gain knowledge on Design of Earth dam – Profile of Gravity Dam	K3
C607.3	Acquire knowledge about cross drainage works	K2


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C607.4	Acquire knowledge about canal regulation structures	K2
C607.5	Design water supply and sewage treatment structures	K3
C607.6	After successful completion of the students will be able to design and draw various units of Municipal water treatment plants and sewage treatment plants.	K3
C608 - CE8611 HIGHWAY ENGINEERING LABORATORY		
C608.1	Student knows the techniques to characterize various pavement materials through relevant tests.	K3
C608.2	Understanding the test on aggregates	K3
C608.3	Gain knowledge on test on bitumen	K3
C608.4	Know about tests on bituminous mixes	K3
C608.5	Practice to utilize skid resistance tester/ benkel man beam	K3
C608.6	After successful completion of the laboratory course the students acquire knowledge on various bitumen tests	K3
C609 - HS8581 PROFESSIONAL COMMUNICATION		
C609.1	Make effective presentations	K3
C609.2	Participate confidently in Group Discussions.	K3
C609.3	Attend job interviews and be successful in them.	K3
C609.4	Develop adequate Soft Skills required for the workplace	K3
C609.5	Develop work culture while studying	K3
C609.6	After successful completion of the course the student will be in a state to get easily adapted to the industry/corporate environment.	K2
SEMESTER-VII		
C701 - CE8701 ESTIMATION, COSTING AND VALUATION ENGINEERING		
C701.1	Estimate the quantities for buildings	K3
C701.2	Rate Analysis for all Building works, canals, and Roads and Cost Estimate	K3
C701.3	Understand types of specifications, principles for report preparation, tender notices types	K3
C701.4	Gain knowledge on types of contracts	K3
C701.5	Evaluate valuation for building and land.	K3
C701.6	After successful completion of the course the student will be able to do cost estimation for various projects.	K3
C702 - CE8702 RAILWAYS, AIRPORTS, DOCKS AND HARBOUR ENGINEERING		
C702.1	Understand the methods of route alignment and design elements in Railway Planning and Constructions.	K3
C702.2	Understand the Construction techniques and Maintenance of Track laying and Railway stations.	K2
C702.3	Gain an insight on the planning and site selection of Airport Planning and design.	K2
C702.4	Analyze and design the elements for orientation of runways and passenger facility systems.	K3
C702.5	Understand the various features in Harbours and Ports, their construction, coastal protection works and coastal Regulations to be	K2


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	adopted	
C702.6	After successful completion of the course the students gain knowledge on planning design of airport, harbour and docks	KK3
C 703 -EN8591 MUNICIPAL SOLID WASTE MANAGEMENT		
C703.1	Understanding of the nature and characteristics of municipal solid wastes and the regulatory requirements regarding municipal solid waste management.	K2
C703.2	Reduction, reuse and recycling of waste.	K2
C703.3	Ability to plan and design systems for storage, collection, transport, processing and disposal of municipal solid waste.	K2
C703.4	Knowledge on the issues on solid waste management from an integrated and holistic perspective, as well as in the local and international context.	K2
C703.5	Design and operation of sanitary landfill	K3
C703.6	After successful completion of the course the student would have acquired knowledge on solid waste management and will be able to find new solutions to the waste disposal.	K2
C704 -OEN751 GREEN BUILDING DESIGN		
C704.1	Understand about Embodied Energy in Building Materials	K2
C704.2	Understand about Recycling and biomass resources.	K2
C704.3	Acquire knowledge on providing comforts in building	K2
C704.4	Acquire knowledge on utility of solar energy in buildings	K2
C704.5	Understand about Urban Environment and Green Buildings	K2
C704.6	After successful completion of the course the student will be able to design green buildings in their future endeavor.	K2
C705 CE8703 STRUCTURAL DESIGN AND DRAWING		
C705.1	Design and draw reinforced concrete Cantilever and Counterfort Retaining Walls	K3
C705.2	Design and draw flat slab as per code provisions	K3
C705.3	Design and draw reinforced concrete and steel bridges	K3
C705.4	Design and draw reinforced concrete and steel water tanks	K3
C705.5	Design and detail the various steel trusses and gantry girders	K3
C705.6	After successful completion of the course the student will be capable to design and detail the RCC and steel structures	K3
C706 CE8711 CREATIVE AND INNOVATIVE PROJECT		
C706.1	Acquire knowledge on current social problems	K3
C706.2	Ability to analyse the research articles	K3
C706.3	Develop skills in project writing	K3
C706.4	Develop skills in project presentation	K3
C706.5	Finding a research gap in the field	K3
C706.6	On Completion of the mini project students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.	K3


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C707 CE8712 INDUSTRIAL TRAINING		
C707.1	To train the students in field work so as to have a first-hand knowledge of practical problems in carrying out engineering tasks.	K3
C707.2	To develop skills in facing and solving the field problems.	K3
C707.3	The student will be able to understand the intricacies of implementation textbook knowledge into practice	K3
C707.4	The student will be able to understand the concepts of developments and implementation of new techniques	K3
C707.5	To train them to present in the viva voce examination	K3
C707.6	On Completion of the industrial training the students will be aware how the text book knowledge is been applied in industry or in corporate society.	K3
SEMESTER-VIII		
C801 - GE8076 PROFESSIONAL ETHICS IN ENGINEERING		
C801.1	Gain insight on human values	K2
C801.2	Acquire knowledge on engineering ethics	K2
C801.3	Get familiar with Codes of Ethics	K2
C801.4	Acquire knowledge on Professional Rights, Employee Rights . Intellectual Property Rights (IPR)	K2
C801.5	Overcome unawareness on global issues due to ethical misuses	K2
C801.6	Upon completion of the course, the student should be able to apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities and rights in the society.	K2
C802 - CE8020 MAINTENANCE, REPAIR AND REHABILITATION OF STRUCTURES		
C802.1	Understand the importance of maintenance and assessment method of distressed structures.	K2
C802.2	Understand the strength and durability properties, their effects due to climate and temperature.	K2
C802.3	Understand recent development in concrete	K2
C802.4	Understand the techniques for repair and protection methods	K2
C802.5	Understand repair, rehabilitation and retrofitting of structures and demolition methods	K2
C802.6	After successful completion of the course the student will be having adequate knowledge on repair and rehabilitation techniques available for concrete building, this will help them to research on possible ways of repair, rehabilitation and strengthening techniques.	K2
C803 CE8811 PROJECT WORK		
C803.1	To develop the ability to solve a specific problem right from its identification	K3
C803.2	To develop ability to criticize and prepare review about the literatures.	K3
C803.3	To encourage students to find a research gap and complete their project in a successful way	K3
C803.4	To train the students in preparing project reports.	K3


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C803.5	To train the students to face reviews and viva voce examination.	K3
C803.6	On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.	K3



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S.No	CO-PO MAPPING													
C301- MA8353 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C301.1	3	-	-	-	-	-	-	-	-	-	-	2	2	3
C301.2	-	2	-	-	-	-	-	-	-	-	-	-	3	2
C301.3	-	-	-	-	-	-	-	-	-	-	-	2	2	3
C301.4	-	2	-	-	-	-	-	-	-	-	-	-	2	3
C301.5	2	-	-	-	-	-	-	-	-	2	-	-	2	3
C301.6	2	2	-	-	-	-	-	-	-	-	3	-	2	3
C302-CE8301 STRENGTH OF MATERIALS I														
C302.1	2	1	2	1	-	2	2	2	3	3	3	3	2	3
C302.2	2	-	2	2	2	1	-	2	3	3	2	2	3	2
C302.3	2	2	2	2	2	2	-	2	2	3	2	2	2	2
C302.4	2	-	2	-	2	1	-	2	2	2	2	2	2	2
C302.5	2	2	2	1	2	2	-	2	3	3	2	2	2	2
C302.6	2	1	2	1	2	2	-	2	3	3	2	2	2	3
C303-CE8302 FLUID MECHANICS														
C303.1	3	-	-	-	-	-	2	-	-	-	-	2	2	2
C303.2	-	3	2	-	-	-	-	-	-	-	-	2	3	2
C303.3	-	3	2	-	-	2	-	-	-	-	-	-	2	3
C303.4	3	-	-	2	3	-	-	-	-	-	-	-	2	3
C303.5	-	-	-	-	3	-	-	-	2	-	-	3	2	3
C303.6	-	-	-	-	-	3	-	-	2	-	2	-	2	2
C304 - CE8351 SURVEYING														
C304.1	2	3	2	2	2	2	-	-	2	-	-	2	2	2
C304.2	3	2	3	2	2	2	-	-	2	-	-	3	3	2
C304.3	2	3	2	2	2	3	-	-	2	-	-	2	2	3
C304.4	3	3	3	2	2	2	-	-	2	-	-	3	2	3


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C304.5	2	3	2	2	2	3	-	-	2	-	-	2	2	2
C304.6	3	2	2	2	2	3	-	-	2	-	-	3	2	3
C305 - CE8391 CONSTRUCTION MATERIALS														
C305.1	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C305.2	3	2	-	2	-	-	-	-	-	-	-	-	2	2
C305.3	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C305.4	3	2	2	-	-	-	-	-	-	-	-	-	2	2
C305.5	3	2	2	2	-	-	-	-	-	-	-	-	2	2
C305.6	3	2	2	2	-	-	-	-	-	-	-	-	2	2
C306-CE8392 ENGINEERING GEOLOGY														
C306.1	3	1	-	-	-	-	-	-	2	-	-	2	2	2
C306.2	3	3	-	-	-	-	-	-	2	-	-	1	3	2
C306.3	3	3	-	-	-	-	-	-	2	-	-	-	2	2
C306.4	2	1	1	-	-	-	-	-	2	-	-	-	2	3
C306.5	3	1	-	-	-	-	-	-	2	-	-	2	2	2
C306.6	3	3	-	-	-	-	-	-	2	-	-	1	2	3
C307 - CE8311 CONSTRUCTION MATERIALS LABORATORY														
C307.1	3	-	2	-	-	-	-	-	-	-	2	2	2	2
C307.2	3	-	2	-	-	-	-	-	2	-	2	2	3	2
C307.3	3	2	2	2	-	-	2	-	2	-	2	2	2	2
C307.4	3	2	2	2	-	-	2	-	2	-	2	2	2	3
C307.5	3	-	2	2	-	-	2	-	2	-	2	2	2	2
C307.6	3	-	2	2	-	2	2	-	2	-	2	2	2	3
C308-CE8361 SURVEYING LABORATORY														
C308.1	-	-	-	-	3	-	-	-	-	3	-	2	2	2
C308.2	-	-	-	-	3	-	-	-	-	3	-	2	2	2
C308.3	-	-	-	-	3	-	-	-	-	3	-	2	2	3
C308.4	-	-	-	-	3	-	-	-	-	3	-	2	2	3


PRINCIPAL
 M.I.E.T. ENGINEERING COLLEGE
 GUNDUR, TIRUCHIRAPALLI - 620 007.

C308.5	-	-	-	-	3	-	-	-	-	3	-	2	2	2
C308.6	-	-	-	-	3	-	-	-	-	3	-	2	2	2
C309 - HS8381- INTERPERSONAL SKILLS/LISTENING AND SPEAKING														
C309.1	2	2	2	-	2	-	2	-	-	-	1	-	2	3
C309.2	2	-	2	-	2	-	2	-	-	-	1	-	2	2
C309.3	-	-	2	2	2	-	-	-	-	2	1	-	2	2
C309.4	-	2	2	-	2	-	2	-	-	2	-	-	2	2
C309.5	1	2	-	-	2	1	-	-	-	2	-	-	2	2
C309.6	-	2	-	-	2	-	2	-	-	2	2	-	2	3
C401 - MA8491 NUMERICAL METHODS														
C401.1	3	3	-	2	2	-	-	-	-	-	-	1	2	3
C401.2	3	2	-	2	2	-	-	-	-	-	-	1	3	2
C401.3	3	3	-	3	2	-	-	-	-	-	-	1	3	2
C401.4	3	2	2	-	-	-	-	-	-	-	-	2	2	2
C401.5	3	2	2	-	-	-	-	-	-	-	-	2	2	2
C401.6	2	2	1	-	-	-	-	-	-	-	-	2	2	3
C402 - CE8401 CONSTRUCTION TECHNIQUES AND PRACTICES														
C402.1	2	-	-	-	-	-	-	-	-	1	1	2	2	2
C402.2	2	2	3	-	3	-	-	-	-	1	2	2	3	2
C402.3	-	-	-	-	3	-	2	-	-	1	1	2	2	2
C402.4	2	2	-	-	-	-	2	-	-	1	2	2	2	2
C402.5	2	-	3	-	-	-	2	-	-	1	2	2	2	2
C402.6	-	-	-	-	-	3	2	-	-	1	1	2	2	2
C403 - CE8402 STRENGTH OF MATERIALS II														
C403.1	3	3	2	-	-	-	1	-	-	-	-	3	2	2
C403.2	3	3	2	-	-	-	-	-	-	-	-	3	2	2
C403.3	3	3	2	-	-	-	1	-	-	-	-	3	2	2
C403.4	3	3	2	-	-	-	-	-	-	-	-	3	2	3


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C403.5	3	3	2	-	-	-	1	-	-	-	-	3	2	2
C403.6	3	3	2	-	-	-	-	-	-	-	-	3	2	2
C404 - CE 8403 APPLIED HYDRAULIC ENGINEERING														
C404.1	2	2	2	2	-	-	-	-	2	-	2	-	2	2
C404.2	2	2	2	2	-	-	-	-	2	-	2	-	2	2
C404.3	2	2	2	2	-	-	-	-	2	-	2	-	2	2
C404.4	2	2	2	-	-	-	-	-	2	-	2	-	2	2
C404.5	2	2	2	-	-	-	-	-	2	-	2	-	2	2
C404.6	2	-	-	-	-	-	-	-	-	-	-	2	2	2
C405 - CE8404 CONCRETE TECHNOLOGY														
C405.1	3	2	2	-	2	-	2	-	-		2	-	2	2
C405.2	3	-	2	-	2	-	2	-	-		2	-	2	2
C405.3	3	-	2	2	2	-		-	-	2	2	-	2	2
C405.4	3	2	2	-	2	-	2	-	-	2		-	2	2
C405.5	3	2	-	-	2	2		-	-	2		-	2	2
C405.6	3	2	-	-	2	-	2	-	-	2	2	-	2	2
C406 -CE8491 SOIL MECHANICS														
C406.1	2	2	-	2	2	-	2	-	2	-	2	2	2	2
C406.2	2	2	-	-	-	-	-	-	-	-	-	2	2	2
C406.3	2	2	-	2	-	-	-	-	2	-	-	-	2	2
C406.4	2	2	-	2	-	-	-	-	-	-	-	-	2	2
C406.5	2	2	2	2	2	-	-	-	2	-	-	-	2	2
C406.6	2	-	-	2	-	-	-	-	-	-	-	-	2	2
C407 -CE8481 STRENGTH OF MATERIALS LABORATORY														
C407.1	2	3	2	3	2	2	-	-	-	-	-	2	2	2
C407.2	2	2	2	2	2	3	-	-	-	-	-	3	2	2
C407.3	2	3	3	3	2	2	-	-	-	-	-	2	2	2
C407.4	2	2	2	2	2	3	-	-	-	-	-	3	2	3
C407.5	2	2	2	3	3	2	-	-	-	-	-	2	2	2


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C407.6	2	3	2	2	2	3	-	-	-	-	-	2	2	2
C408 - CE8461 HYDRAULIC ENGINEERING LABORATORY														
C408.1	1	-	1	2	2	-	-	2	-	2	3	-	2	2
C408.2	1	1	1	-	2	-	3	3	-	-	1	-	2	2
C408.3	1	1	-	2	2	-	-	-	3	-	1	-	2	2
C408.4	1	1	-	-	2	-	3	-	-	2	1	-	2	2
C408.5	2	-	2	2	2	-	-	-	-	-	1	-	2	2
C408.6	1	-	1	2	2	-	-	2	-	2	3	-	2	3
C409 - HS8461 ADVANCED READING AND WRITING														
C409.1	2	2	2	-	2	-	2	-	-	-	1	-	2	2
C409.2	2	-	2	-	2	-	2	-	-	-	1	-	2	2
C409.3	-	-	2	2	2	-	-	-	-	2	1	-	2	2
C409.4	-	2	2	-	2	-	2	-	-	2	-	-	2	2
C409.5	1	2	-	-	2	1	-	-	-	2	-	-	2	2
C409.6	-	2	-	-	2	-	2	-	-	2	2	-	2	2
C501- CE8501 DESIGN OF REINFORCED CEMENT CONCRETE ELEMENTS														
C501.1	3	2	-	-	-	2	-	-	-	-	-	-	2	2
C501.2	2	3	-	-	-	2	-	-	-	-	-	-	3	2
C501.3	3	2	-	-	-	2	-	-	-	-	-	-	3	2
C501.4	3	3	-	-	-	2	-	-	-	-	-	-	2	3
C501.5	3	2	-	-	-	2	-	-	-	-	-	-	3	2
C501.6	3	3	1	-	-	-	-	-	-	-	-	-	2	3
C502-CE8502 STRUCTURAL ANALYSIS I														
C502.1	3	3	-	-	2	-	-	-	-	2	-	2	2	2
C502.2	3	3	2	-	-	-	-	-	-	-	-	2	3	2
C502.3	3	3	2	-	-	-	-	-	-	-	-	2	3	3
C502.4	3	3	2	-	-	-	-	-	-	3	2	2	2	3
C502.5	3	3	-	-	-	-	-	-	-	-	-	-	3	3


PRINCIPAL
 M.I.E.T. ENGINEERING COLLEGE
 GUNDUR, TIRUCHIRAPALLI - 620 007.

C502.6	3		-	-	2	2	-	-	-	2	2	2	2	3
C503 - EN8491 WATER SUPPLY ENGINEERING														
C503.1	3	1	-	-	-	1	1	-	-	-	-	-	2	2
C503.2	3	2	2	-	-	2	-	-	-	-	-	-	2	2
C503.3	3	2	2	2	-	2	2	-	-	-	-	-	2	2
C503.4	3	1	-	-	-	1	-	-	-	-	-	-	2	2
C503.5	3	2	2	-	-	2	-	-	-	-	-	-	2	2
C503.6	3	2	2	-	-	2	2	-	-	-	-	-	2	3
C504-CE8591 FOUNDATION ENGINEERING														
C504.1	3	-	2	-	2	3	-	2	-	-	-	1	2	2
C504.2	-	2	3	-	-	2	-	-	-	2	-	2	2	3
C504.3	2	-	2	-	-	2	-	-	-	2	-	1	2	2
C504.4	-	2		-	-	2	-	-	-	2	-	1	3	2
C504.5	-	2	2	-	2		-	2	-	-	-	-	2	2
C504.6	-	2	2	2	-	-	-	2	-	-	-	1	2	3
C505 -GI8013 ADVANCED SURVEYING														
C505.1	2	3	3	2	2	-	2	-	-	-	3	-	2	2
C505.2	2	2	3	2	2	3	-	2	-	3	2	2	2	2
C505.3	2	2	2	2	2	-	-	-	2	-	2	-	2	2
C505.4	3	3	2	2	3	-	3	-	-	-	2	2	2	2
C505.5	3	3	3	2	2	-	-	-	3	-	2	-	2	2
C505.6	2	2	3	2	3	-	-	-	-	2	2	2	2	3
C506 - ORO551 RENEWABLE ENERGY SOURCES														
C506.1	3	-	2	-	-	-	-	-	-	-	-	2	2	2
C506.2	3	-	2	-	-	-	-	-	-	-	-	2	3	2
C506.3	2	-	2	-	-	-	-	-	-	-	-	2	2	2
C506.4	2	-	2	-	-	-	-	-	-	-	-	2	2	2
C506.5	3	-	2	-	-	-	-	-	-	-	-	2	2	2
C506.6	-	-	-	-	-	2	-	-	-	-	-	2	2	2


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C507 - CE8511 SOIL MECHANICS LABORATORY														
C507.1	1	-	-	-	-	-	3	-	2	3	-	-	2	2
C507.2	-	-	1	2	-	3	-	2	-	3	-	-	2	2
C507.3	-	-	-	-	3	-	3	-	-	3	2	-	2	2
C507.4	-	1	-	-	1	-	3	-	-	-	2	-	2	2
C507.5	-	-	-	2	-	3	3	1	-	-	-	1	2	2
C507.6	1	-	-	-	-	3	2		2	1	-	2	3	3
C508 - CE8512 WATER AND WASTE WATER ANALYSIS LABORATORY														
C508.1	-	-	2	-	2	-	-	-	-	1	-	3	2	2
C508.2	-	-	-	-	2	2	-	-	-	-	2	2	2	2
C508.3	2	-	2	-	-	-	-	-	-	-	3	-	2	2
C508.4	-	-	3	-	-	-	-	-	-	-	1	-	2	3
C508.5	2	-	-	-	-	-	-	-	-	-	-	2	2	2
C508.6	-	-	2	-	-	-	-	-	-	-	-	2	2	2
C509 - CE8513 SURVEY CAMP														
C509.1	3		-	-	-	-	-	-	-	-	-	1	2	2
C509.2	3	2	-	-	-	-	-	-	3	-	-	2	2	2
C509.3	2	2	-	-	-	-	-	-	3	-	-	2	2	2
C509.4	3	2	-	-	-	-	-	-	3	-	-	1	2	2
C509.5	3	1	-	-	-	-	-	-	2	-	-	1	2	2
C509.6	3	2	-	-	3	-	-	-	3	-	-	2	2	2
C601 - CE8601 DESIGN OF STEEL STRUCTURAL ELEMENTS														
C601.1	2	2	2	-	-	-	-	1	-	-	-	1	2	2
C601.2	2	2	2	-	-	-	-	1	-	-	-	1	2	2
C601.3	2	2	2	-	-	-	-	1	-	-	-	1	2	2
C601.4	2	2	2	-	-	-	-	1	-	-	-	1	2	2
C601.5	2	2	2	-	-	-	-	1	-	-	-	1	2	2
C601.6	2	2	2	-	-	-	-	1	-	-	-	1	2	2
C602 - CE8602 STRUCTURAL ANALYSIS II														


PRINCIPAL
 M.I.E.T. ENGINEERING COLLEGE
 GUNDUR, TIRUCHIRAPALLI - 620 007.

C602.1	3	3	2	2	-	1	1	-	-	-	1	2	2	2
C602.2	3	3	2	2	-	1	1	-	-	-	1	2	3	2
C602.3	3	3	2	2	-	-	1	-	-	-	-	1	2	2
C602.4	3	3	2	2	-	-	-	-	-	-	-	1	2	3
C602.5	3	3	2	2	-	-	-	-	-	-	-	1	2	2
C602.6	3	3	2	2	-	2	1	-	-	-	2	2	2	3
C603 - CE8603 IRRIGATION ENGINEERING														
C603.1	2	2	3	2	2	2	-	-	2	-	-	2	2	2
C603.2	3	2	3	2	2	2	-	-	2	-	-	3	2	2
C603.3	2	3	3	2	2	2	-	-	2	-	-	2	2	2
C603.4	2	3	3	2	2	2	-	-	2	-	-	3	2	3
C603.5	3	2	3	2	2	2	-	-	2	-	-	3	2	2
C603.6	3	2	3	2	3	2	-	-	2	-	-	2	2	2
C604 - CE8604 HIGHWAY ENGINEERING														
C604.1	2	2	-	-	-	2	1	-	3	2	-	2	2	2
C604.2	-	3	2	-	3	-	-	-	2	-	-	-	2	2
C604.3	-	2	-	-	-	-	2	-	-	-	-	1	2	2
C604.4	-	2	2	-	-	-	-	-	-	2	-	2	3	3
C604.5	1	2	-	-	-	2	1	-	2	-	2	2	2	2
C604.6	-	-	-	-	-	1	2	-	2	2	-	2	2	2
C605 - EN8592 WASTEWATER ENGINEERING														
C605.1	3	2	1	-	-	3	3	-	-	-	-	3	2	2
C605.2	2	3	2	-	-	-	2	-	-	-	-	-	2	2
C605.3	2	1	-	-	-	-	-	-	-	-	-	-	2	2
C605.4	3	2	3	-	-	-	2	-	-	-	-	-	2	3
C605.5	2	-	3	-	-	3	2	-	2	-	-	3	2	2
C605.6	3	2	-	-	-	2	2	-	-	-	-	3	2	3


PRINCIPAL
 M.I.E.T. ENGINEERING COLLEGE
 GUNDUR, TIRUCHIRAPALLI - 620 007.

C606 - CE8004 URBAN PLANNING AND DEVELOPMENT														
C606.1	-	2	2	2	-	2	1	-	3	-	-	2	2	3
C606.2	-	-	-	-	-	2	-	-	-	-	-	2	3	3
C606.3	-	-	-	2	-	3	-	-	-	-	-	3	2	2
C606.4	-	-	2	3	-	-	-	-	3	-	-	3	2	3
C606.5	3	-	3	1	2	2	3	-	-	-	-	3	2	2
C606.6	3	-	3	1	2	2	2	-	-	-	-	3	2	3
C607 - CE8612 IRRIGATION AND ENVIRONMENTAL ENGINEERING DRAWING														
C607.1	3	3	3	2	-	-	-	2	-	-	3	2	2	2
C607.2	3	2	3	2	-	-	-	2	-	-	2	2	3	2
C607.3	3	2	2	2	-	-	-	2	-	-	2	2	2	2
C607.4	3	3	2	2	-	-	-	2	-	-	2	2	2	3
C607.5	3	3	3	2	-	-	-	2	-	-	2	2	2	2
C607.6	3	3	3	2	-	-	-	2	-	-	2	2	2	3
C608 - CE8611 HIGHWAY ENGINEERING LABORATORY														
C608.1	2	-	1	-	-	-	-	2	-	-	2	-	2	3
C608.2	2	1	1	-	-	-	3	1	-	-	1	-	2	2
C608.3	2	1	-	-	-	-	-	-	1	-	1	-	2	2
C608.4	2	1	-	-	-	-	3	-	-	-	1	-	2	3
C608.5	2	-	2	-	-	-	-	-	-	-	1	-	2	2
C608.6	2	-	1	-	-	-	-	2	-	-	2	-	2	3
C609 - HS8581 PROFESSIONAL COMMUNICATION														
C609.1	2	2	2	-	2	-	2	-	-	-	1	-	2	2
C609.2	2	-	2	-	2	-	2	-	-	-	1	-	3	2
C609.3	-	-	2	2	2	-	-	-	-	2	1	-	2	2
C609.4	-	2	2	-	2	-	2	-	-	2	-	-	2	3
C609.5	1	2	-	-	2	1	-	-	-	2	-	-	2	2
C609.6	-	2	-	-	2	-	2	-	-	2	2	-	2	2


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C701 - CE8701 ESTIMATION, COSTING AND VALUATION ENGINEERING														
C701.1	3	2	2	-	-	2	2	-	-	-	-	3	2	2
C701.2	3	2	2	-	-	2	2	-	-	-	-	3	3	2
C701.3	2	-	-	-	-	-	2	-	-	-	-	3	2	2
C701.4	2	-	-	-	-	-	2	-	-	-	-	3	2	2
C701.5	2	-	-	-	-	-	2	-	-	-	-	3	2	2
C701.6	3	2	2	-	-	2	2	-	-	-	-	3	2	3
C702 - CE8702 RAILWAYS, AIRPORTS, DOCKS AND HARBOUR ENGINEERING														
C702.1	2	2	2	-	-	-	2	-	2	-	-	-	2	2
C702.2	3	2	-	-	-	-	-	-	2	-	-	-	2	2
C702.3	3	2	-	-	-	-	-	-	2	-	-	-	2	2
C702.4	3	2	-	-	-	-	-	-	2	-	-	-	2	3
C702.5	2	2	-	-	-	-	-	-	2	-	-	-	2	2
C702.6	-	-	2	-	-	-	2	-	-	-	-	-	2	2
C 703 -EN8591 MUNICIPAL SOLID WASTE MANAGEMENT														
C703.1	-	-	3	-	-	2	3	-	-	-	-	3	2	2
C703.2	-	-	2	-	2	2	3	2	-	-	2	3	2	2
C703.3	3	-	2	-	2	-	3	-	2	-	2	3	2	2
C703.4	2	-	-	2	-	3	-	-	-	-	-	3	2	2
C703.5	-	-	-	-	-	-	2	-	2	-	-	-	2	2
C703.6	2	-	-	-	-	-	3	2	3	-	-	-	2	2
C704 -OEN751 GREEN BUILDING DESIGN														
C704.1	2	2	-	-	-	2	-	-	-	-	-	2	2	2
C704.2	2	2	-	-	-	2	-	-	-	-	-	2	2	2
C704.3	2	2	-	-	-	2	-	-	-	-	-	2	2	2
C704.4	2	2	-	-	-	2	-	-	-	-	-	2	2	2
C704.5	2	2	-	-	-	2	-	-	-	-	-	2	2	2
C704.6	2	2	-	-	-	2	-	-	-	-	-	2	2	2
C705 CE8703 STRUCTURAL DESIGN AND DRAWING														


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C705.1	2	-	2	-	-	-	2	-	-	-	2	-	2	2
C705.2	2	-	2	-	-	-	2	-	-	-	-	-	2	2
C705.3	2	-	-	-	-	-	2	-	-	-	-	-	2	2
C705.4	2	-	-	-	-	-	2	2	-	-	-	-	2	2
C705.5	2	-	-	-	-	2	2	-	-	-	2	-	2	2
C705.6	2	-	-	-	-	-	2	-	-	-	-	-	2	2
C706 CE8711 CREATIVE AND INNOVATIVE PROJECT														
C706.1	2	-	2	-	-	-	-	2	-	-	1	1	2	2
C706.2	2	-	2	-	-	2	-	-	-	-	-	-	2	2
C706.3	2	2	2	2		1	1	-	-	-	-	1	2	2
C706.4	3	2	2	3	1		1	-	-	-	-	1	2	3
C706.5	3		2	-	1	2	2	1	-	-	1	1	2	2
C706.6	2	1		-	-		3		2	-	-	-	2	3
C707 CE8712 INDUSTRIAL TRAINING														
C707.1	3	3	3	2	2	2	-	2	2	2	3	-	2	2
C707.2	3	2	3	2	2	-	-	-	-	3	2	2	3	3
C707.3	3	2	2	2	2	-	-	-	-	2	2	-	3	2
C707.4	3	3	2	2	3	-	2	-	-	2	2	-	2	3
C707.5	3	3	3	2	2	-	-	-	-	3	2	-	3	2
C707.6	2	2	3	2	3	-	-	2	-	2	2	-	2	3
C801 - GE8076 PROFESSIONAL ETHICS IN ENGINEERING														
C801.1	-	-	-	-	-	-	2	-	2	-	3	-	2	3
C801.2	3	-	-	-	-	-	2	-	2	2	3	-	3	2
C801.3	2	-	-	-	-	-	-	2	-	-	-	3	2	2
C801.4	3	-	-	-	-	-	-	3	2	-	-	1	2	3
C801.5	1	-	-	-	-	-	-	-	3	-	3	-	2	2
C801.6	1	-	-	-	-	-	-	-	2	3	2	1	2	3
C802 - CE8020 MAINTENANCE, REPAIR AND REHABILITATION OF STRUCTURES														
C802.1	3	2	2	-	-	1	1	-	1	-	-	-	3	3


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C802.2	3	2	3	-	-	1	1	-	1	-	-	-	3	2
C802.3	3	2	2	-	-	1	-	-	1	-	-	-	2	2
C802.4	3	2	2	-	-	1	-	-	1	-	-	-	2	3
C802.5	3	2	2	-	-	1	-	-	1	-	-	-	2	2
C802.6	3	2	2	-	-	1	-	-	1	-	-	-	2	3
C803 - CE8811 PROJECT WORK														
C803.1	1	1	-	1	-	2	1	1	-	-	-	1	2	2
C803.2	1	2	-	1	-	1	2	1	-	-	-	1	3	2
C803.3	1	1	-	1	-	1	1	1	-	-	-	1	2	2
C803.4	1	2	-	2	-	1	1	2	-	-	-	1	2	2
C803.5	2	1	-	1	-	2	1	1	-	-	-	1	2	2
C803.6	2	1	-	1	-	1	1	1	-	-	-	1	2	3


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REGULATION – 2017 – PG
M.E. STRUCTURAL ENGINEERING

S.No	COURSE OUTCOME	BT LEVEL
S101- MA5151 - ADVANCED MATHEMATICAL METHODS		
S101.1	To familiarize the students in the field of differential equations.	K3
S101.2	To enable them to solve boundary value problems associated with engineering applications using transform methods.	K3
S101.3	To expose the students to the concepts of calculus of variations.	K3
S101.4	To introduce conformal mappings and their applications to fluid flows and heat flows.	K3
S101.5	To give the students a complete picture of tensor analysis.	K3
S102 – ST5101 – ADVANCED CONCRETE STRUCTURES		
S102.1	Explain structural behaviour of flexural members and columns	K3
S102.2	Design compression members and construct interaction diagrams	K3
S102.3	Design the special elements like corbels, deep beams and grid floors	K3
S102.4	Design flat slab and spandrel beams	K3
S102.5	Predict the moment curvature behavior and design and detail concrete elements based on ductility	K3
S103 – ST5102 –DYNAMICS OF STRUCTURES		
S103.1	Do vibration analysis of system/structures with single degree of freedom and can explain the method of damping the systems	K3
S103.2	Do dynamic analysis of system/structures with Two degrees of freedom under free and forced vibration	K3
S103.3	Do dynamic analysis of system/structures with Multi degrees of freedom under free and forced vibration	K3
S103.4	Explains the responses of the dynamics	K3
S103.5	Derive a mathematical model of continuous system and do a dynamic analysis under free and forced vibration	K3


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S104 – ST5103 - THEORY OF ELASTICITY AND PLASTICITY		
S104.1	Derive and write the fundamental equations of elasticity describing the linear behavior of element and develop constitutive models based on material behavior	K3
S104.2	Demonstrate the application of plane stress and plane strain in a given situation in both cartesian and polar coordinate systems	K3
S104.3	Solve torsion problems in circular and non-circular cross-sections	K3
S104.4	Analyse beams resting on elastic foundations	K3
S104.5	Solve analytically the simple boundary value problems with elasto-plastic and strain hardening properties	K3
S105 –ST5001 – MAINTENANCE AND REHABILITATION OF STRUCTURES		
S105.1	Explain the importance of maintenance assessment of distressed structures	K2
S105.2	Apply the knowledge on Quality assurance for concrete based on Strength and Durability	K2
S105.3	Identify various repair materials and advancements in concrete	K2
S105.4	Explain the knowledge on Concrete protection methods Structural health monitoring	K2
S105.5	Select Various strengthening and repair methods for different cases	K2
S106 – ST5002 –PRE FABRICATE STRUCTURES		
S106.1	Explain the design principles involved in prefabrication	K2
S106.2	Detail the different types of connection	K3
S106.3	Design for stripping forces during manufacture	K3
S106.4	Determine the forces in shear walls	K3
S106.5	Identify the different roof trusses used in industrial buildings	K2
S201 – ST5201 – ADVANCED STEEL STRUCTURES		
S201.1	Design the steel members such as purlins, gable wind girders, base plates subjected to combined forces	K3
S201.2	Explain and design the different types of steel connections such as welded, bolted and moment resisting connections	K3
S201.3	Analyse and design the industrial structures such as trusses, portal frames subjected to seismic forces	K3
S201.4	Explain the effect of axial force and shear force on steel structures	K3

	and analyse the continuous beams, frames using plastic theory	
S201.5	Evaluate the behaviour and design of compression and flexural members	K3
S202 – ST5202 – STABILITY OF STRUCTURES		
S202.1	Explain the phenomenon of buckling of columns and calculate the buckling load on column by various approaches	K3
S202.2	Estimate the buckling load of beam – columns and frames	K3
S202.3	Explore the concepts of torsional and lateral buckling of thin walled members	K3
S202.4	Explain the phenomenon of buckling of plates	K2
S202.5	Analyze the inelastic buckling of columns and plates	K3
S203 – ST5203 - EXPERIMENTAL TECHNIQUES		
S203.1	Do the mix proportion using IS and ACI codal provisions.	K2
S203.2	Prepare the self-compacting concrete and study the flow characteristics of SCC	K2
S203.3	Identify the proper portion of mineral and chemical admixture for concrete.	K2
S203.4	Test the concrete in a non-destructive manner using rebound hammer.	K2
S203.5	Know the permeability characteristics of concrete.	K2
S204 – ST5204 - FINITE ELEMENT ANALYSIS		
S204.1	Formulate a finite element problem using basic mathematical principles	K3
S204.2	Explain the various types of elements and Select the appropriate element for modelling	K3
S204.3	Analyze a frame using truss element	K3
S204.4	Formulate and analyze two and three dimensional solid finite element problems	K3
S204.5	Analyze a shells, thick and thin plate and explain dynamic analysis in FEM	K3
S205- ST5008 – INDUSTRIAL STRUCTURES		
S205.1	Develop the concept of planning & functional requirement of industrial standards.	K2
S205.2	Analyse and design of Steel Gantry girders & Crane girders and RCC design of corbels, nibs and staircase.	K3

S205.3	Analyse & design of cooling towers, bunker, silos and pipe supporting structures.	K3
S205.4	Analyse and design of Steel transmission line towers and chimneys.	K3
S205.5	Design foundations for cooling tower, chimneys and turbo generator.	K3
S206 – ST5009 – PRE STRESSED CONCRETE		
S206.1	Identify the various methods of prestressing	K2
S206.2	Design the beams for shear, bond and torsion	K3
S206.3	Design the continuous beams	K3
S206.4	Design the water tank, piles and masts	K3
S206.5	Analyze and design the composite beams	K3
S207 – ST5211 - ADVANCED STRUCTURAL ENGINEERING LABORATORY		
S207.1	Do the mix proportion using IS and ACI codal provisions.	K3
S207.2	Prepare the self-compacting concrete and study the flow characteristics of SCC	K3
S207.3	Identify the proper portion of mineral and chemical admixture for concrete.	K3
S207.4	Test the concrete in a non-destructive manner using rebound hammer.	K3
S207.5	Know the permeability characteristics of concrete.	K3
S208 –ST5212 - PRACTICAL TRAINING - I		
S208.1	On completion of the course, the student is expected to be able to develop skills in facing the problems experiencing in the Structural Engineering field.	K3
S208.2	On completion of the course, the student is expected to be able to develop skills in solving the problems experiencing in the Structural Engineering field.	K3
S208.3	To train the Students in the field work so as to have a firsthand Knowledge of practical problems related to structural Engineering in carrying out engineering tasks.	K3
S208.4	To development skills in facing and solving the field problems.	K3
S208.5	They are trained in tracking a practical field/ industry oriented problem related to structural Engineering	K3
S301 – ST5301- EARTHQUAKE ANALYSIS AND DESIGN OF STRUCTURES		
S301.1	Explain the effects of earthquake	K2
S301.2	Explain the Earthquake resistant Masonry Structures	K2

S301.3	Explain the Earthquake resistant RCC Structures	K2
S301.4	The end of this course the students will be able to understand the causes and effect of earthquake.	K2
S301.5	They will able to design masonry and RC structures to the earthquake forces as per the recommendations of IS codes of practice.	K3
S302 – ST5014 – DESIGN OF STEEL CONCRETE COMPOSITE STRUCTURES		
S302.1	Explain composite action	K3
S302.2	Design composite elements	K3
S302.3	Design connections	K3
S302.4	Explain the concept of design of composite box girder bridges	K3
S302.5	Study and evaluate case studies	K2
S303 – ST5015 – DESIGN OF SUB STRUCTURES		
S303.1	To gain familiarity with different types of foundation.	K2
S303.2	To expose the students to the design of shallow foundations and deep foundations.	K3
S303.3	To understand the concepts of designing well, machine and special foundations.	K2
S303.4	They will be in a position to determine the load carrying capacity of each type of foundation.	K2
S303.5	On completion of this course students will be able to select appropriate foundation type based on available soil conditions.	K2
S304 –ST5211 - PRACTICAL TRAINING - II		
S304.1	On completion of the course, the student is expected to be able to develop skills in facing the problems experiencing in the Structural Engineering field.	K4
S304.2	On completion of the course, the student is expected to be able to develop skills in solving the problems experiencing in the Structural Engineering field.	K4
S304.3	To train the Students in the field work so as to have a firsthand Knowledge of practical problems related to structural Engineering in carrying out engineering tasks.	K4
S304.4	To development skills in facing and solving the field problems.	K4
S304.5	They are trained in tracking a practical field/ industry oriented problem related to structural Engineering	K4


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S305 – ST5212 – STRUCTURAL SEMINAR		
S305.1	On completion of the course, the student is expected to be able to acquire the skills of oral presentation and to acquire technical writing abilities for seminars.	K4
S305.2	To be able to acquire the skills of oral presentation and to acquire technical writing abilities for conferences.	K4
S305.3	To work on a specific technical topic in Structural Engineering and acquire the skills of written and oral presentation.	K4
S305.4	To acquire writing abilities for seminars and conferences.	K4
S305.5	The students will be trained to face an audience and to tackle any problem during group discussion in the Interviews.	K4
S306 – ST5313 - PROJECT WORK (PHASE – I)		
S306.1	To identify a specific problem for the current need of the society	K4
S306.2	To collecting information related to the same through detailed review of literature.	K4
S306.3	To develop the methodology to solve the identified problem.	K4
S306.4	To train the students in preparing project reports and to face reviews and viva-voce examination.	K4
S306.5	At the end of the course the students will have a clear idea of his/her area of work and they are in a position to carry out the remaining phase II work in a systematic way.	K4
S401- ST5411 - PRACTICAL TRAINING - III		
S401.1	On completion of the course, the student is expected to be able to develop skills in facing the problems experiencing in the Structural Engineering field.	K4
S401.2	On completion of the course, the student is expected to be able to develop skills in solving the problems experiencing in the Structural Engineering field.	K4
S401.3	To train the Students in the field work so as to have a firsthand Knowledge of practical problems related to structural Engineering in carrying out engineering tasks.	K4
S401.4	To development skills in facing and solving the field problems.	K4
S401.5	They are trained in tracking a practical field/ industry oriented problem related to structural Engineering	K4

S402 – ST5412 – Project Work (Phase – II)		
S401.1	To solve the identified problem based on the formulated methodology.	K4
S401.2	To develop skills to analyze and discuss the test results, and make conclusions.	K4
S401.3	On completion of the project work students will be in a position	K4
S401.4	To take up any challenging practical problem and find better solutions.	K4
S401.5	At the end of the course the students will have a clear idea of his/her area of work	K4



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S.NO	CO-PO MAPPING													
S101- MA5151 - ADVANCED MATHEMATICAL METHODS														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S101.1	3	-	-	-	-	-	-	-	-	-	-	2	2	2
S101.2	-	2	-	-	-	-	-	-	-	-	-	-	2	2
S101.3	-	-	-	-	-	-	-	-	-	-	-	2	2	2
S101.4	-	2	-	-	-	-	-	-	-	-	-	-	2	2
S101.5	2	-	-	-	-	-	-	-	-	2	-	-	2	2
S102 – ST5101 – ADVANCED CONCRETE STRUCTURES														
S102.1	2	1	2	1	-	2	2	2	3	3	3	3	2	2
S102.2	2	-	2	2	2	1	-	2	3	3	2	2	2	2
S102.3	2	2	2	2	2	2	-	2	2	3	2	2	2	2
S102.4	2	-	2	-	2	1	-	2	2	2	2	2	2	2
S102.5	2	2	2	1	2	2	-	2	3	3	2	2	2	2
S103 – ST5102 –DYNAMICS OF STRUCTURES														
S103.1	3	-	-	-	-	-	2	-	-	-	-	2	2	2
S103.2	-	3	2	-	-	-	-	-	-	-	-	2	2	2
S103.3	-	3	2	-	-	2	-	-	-	-	-	-	2	2
S103.4	3	-	-	2	3	-	-	-	-	-	-	-	2	2
S103.5	-	-	-	-	3	-	-	-	2	-	-	3	2	2
S104 – ST5103 - THEORY OF ELASTICITY AND PLASTICITY														
S104.1	2	3	2	2	2	2	-	-	2	-	-	2	3	2
S104.2	3	2	3	2	2	2	-	-	2	-	-	3	2	2


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S104.3	2	3	2	2	2	3	-	-	2	-	-	2	2	2
S104.4	3	3	3	2	2	2	-	-	2	-	-	3	2	2
S104.5	2	3	2	2	2	3	-	-	2	-	-	2	2	2
S105 – ST5001 – MAINTENANCE AND REHABILITATION OF STRUCTURES														
S105.1	3	2	-	-	-	-	-	-	-	-	-	-	3	2
S105.2	3	2	-	2	-	-	-	-	-	-	-	-	2	2
S105.3	3	2	-	-	-	-	-	-	-	-	-	-	2	2
S105.4	3	2	2	-	-	-	-	-	-	-	-	-	2	2
S105.5	3	2	2	2	-	-	-	-	-	-	-	-	3	2
S106 – ST5002 – PRE FABRICATE STRUCTURES														
S106.1	3	1	-	-	-	-	-	-	2	-	-	2	3	2
S106.2	3	3	-	-	-	-	-	-	2	-	-	1	2	2
S106.3	3	3	-	-	-	-	-	-	2	-	-	-	2	3
S106.4	2	1	1	-	-	-	-	-	2	-	-	-	2	2
S106.5	3	1	-	-	-	-	-	-	2	-	-	2	3	2
S201 – ST5201 – ADVANCED STEEL STRUCTURES														
S201.1	3	-	2	-	-	-	-	-	-	-	2	2	3	2
S201.2	3	-	2	-	-	-	-	-	2	-	2	2	3	2
S201.3	3	2	2	2	-	-	2	-	2	-	2	2	2	3
S201.4	3	2	2	2	-	-	2	-	2	-	2	2	3	2
S201.5	3	-	2	2	-	-	2	-	2	-	2	2	3	2
S202 – ST5202 – STABILITY OF STRUCTURES														
S202.1	-	-	-	-	3	-	-	-	-	3	-	2	3	2


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S202.2	-	-	-	-	3	-	-	-	-	3	-	2	3	2
S202.3	-	-	-	-	3	-	-	-	-	3	-	2	3	3
S202.4	-	-	-	-	3	-	-	-	-	3	-	2	3	2
S202.5	-	-	-	-	3	-	-	-	-	3	-	2	3	2
S203 – ST5203 - EXPERIMENTAL TECHNIQUES														
S203.1	3	3	-	2	2	-	-	-	-	-	-	1	3	2
S203.2	3	2	-	2	2	-	-	-	-	-	-	1	3	3
S203.3	3	3	-	3	2	-	-	-	-	-	-	1	2	3
S203.4	3	2	2	-	-	-	-	-	-	-	-	2	2	2
S203.5	3	2	2	-	-	-	-	-	-	-	-	2	2	2
S204 – ST5204 - FINITE ELEMENT ANALYSIS														
S204.1	2	-	-	-	-	-	-	-	-	1	1	2	2	2
S204.2	2	2	3		3	-	-	-	-	1	2	2	3	2
S204.3	-	-	-	-	3	-	2	-	-	1	1	2	2	3
S204.4	2	2	-	-	-	-	2	-	-	1	2	2	3	2
S204.5	2	-	3	-	-	-	2	-	-	1	2	2	2	2
S205- ST5008 – INDUSTRIAL STRUCTURES														
S205.1	3	3	2	-	-	-	1	-	-	-	-	3	3	2
S205.2	3	3	2	-	-	-	-	-	-	-	-	3	2	2
S205.3	3	3	2	-	-	-	1	-	-	-	-	3	2	3
S205.4	3	3	2	-	-	-	-	-	-	-	-	3	2	2
S205.5	3	3	2	-	-	-	1	-	-	-	-	3	3	2


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S206 – ST5009 – PRE STRESSED CONCRETE														
S206.1	2	2	2	2	-	-	-	-	2	-	2	-	2	2
S206.2	2	2	2	2	-	-	-	-	2	-	2	-	3	2
S206.3	2	2	2	2	-	-	-	-	2	-	2	-	2	3
S206.4	2	2	2	-	-	-	-	-	2	-	2	-	2	2
S206.5	2	2	2	-	-	-	-	-	2	-	2	-	2	2
S207 – ST5211 - ADVANCED STRUCTURAL ENGINEERING LABORATORY														
S207.1	3	2	2	-	2	-	2	-	-		2	-	3	2
S207.2	3	-	2	-	2	-	2	-	-		2	-	2	2
S207.3	3	-	2	2	2	-		-	-	2	2	-	3	2
S207.4	3	2	2	-	2	-	2	-	-	2		-	2	3
S207.5	3	2	-	-	2	2		-	-	2		-	3	2
S208 –ST5212 - PRACTICAL TRAINING - I														
S208.1	3	1	-	-	-	1	1	-	-	-	-	-	2	2
S208.2	3	2	2	-	-	2	-	-	-	-	-	-	2	2
S208.3	3	2	2	2	-	2	2	-	-	-	-	-	3	2
S208.4	3	2	2	-	-	2	-	-	-	-	-	-	2	3
S208.5	3	2	2	2	-	2	2	-	-	-	-	-	2	2
S301 – ST5301- EARTHQUAKE ANALYSIS AND DESIGN OF STRUCTURES														
S301.1	2	2	-	2	2	-	2	-	2	-	2	2	2	2
S301.2	2	2	-	-	-	-	-	-	-	-	-	2	2	2
S301.3	2	2	-	2	-	-	-	-	2	-	-	-	3	2
S301.4	2	2	-	2	-	-	-	-	-	-	-	-	2	3


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S301.5	2	2	2	2	2	-	-	-	2	-	-	-	2	2
S302 – ST5014 – DESIGN OF STEEL CONCRETE COMPOSITE STRUCTURES														
S302.1	2	3	2	3	2	2	-	-	-	-	-	2	2	2
S302.2	2	2	2	2	2	3	-	-	-	-	-	3	2	2
S302.3	2	3	3	3	2	2	-	-	-	-	-	2	3	2
S302.4	2	2	2	2	2	3	-	-	-	-	-	3	2	3
S302.5	2	2	2	3	3	2	-	-	-	-	-	2	2	2
S303 – ST5015 – DESIGN OF SUB STRUCTURES														
S303.1	1	-	1	2	2	-	-	2	-	2	3	-	2	2
S303.2	1	1	1	-	2	-	3	3	-	-	1	-	2	2
S303.3	1	1	-	2	2	-	-	-	3	-	1	-	3	2
S303.4	1	1	-	-	2	-	3	-	-	2	1	-	2	3
S303.5	2	-	2	2	2	-	-	-	-	-	1	-	2	2
S304 – ST5211 - PRACTICAL TRAINING - II														
S304.1	3	1	-	-	-	1	1	-	-	-	-	-	2	2
S304.2	3	2	2	-	-	2	-	-	-	-	-	-	2	2
S304.3	3	2	2	2	-	2	2	-	-	-	-	-	3	2
S304.4	3	2	2	-	-	2	-	-	-	-	-	-	2	3
S304.5	3	2	2	2	-	2	2	-	-	-	-	-	2	2
S305 – ST5212 – STRUCTURAL SEMINAR														
S305.1	3	2	-	-	-	2	-	-	-	-	-	-	2	2
S305.2	2	3	-	-	-	2	-	-	-	-	-	-	2	2
S305.3	3	2	-	-	-	2	-	-	-	-	-	-	3	2


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S305.4	3	3	-	-	-	2	-	-	-	-	-	-	2	3
S305.5	3	3	-	-	-	2	-	-	-	-	-	-	2	2
S306 – ST5313 - PROJECT WORK (PHASE – I)														
S306.1	3	3	-	-	2	-	-	-	-	2	-	2	2	2
S306.2	3	3	2	-	-	-	-	-	-	-	-	2	2	2
S306.3	3	3	-	-	2	-	-	-	-	2	-	2	3	2
S306.4	3	3	2	-	-	-	-	-	-	-	-	2	2	3
S306.5	3	3	-	-	2	-	-	-	-	2	-	2	3	2
S401- ST5411 - PRACTICAL TRAINING - III														
S401.1	3	1	-	-	-	1	1	-	-	-	-	-	2	2
S401.2	3	2	2	-	-	2	-	-	-	-	-	-	2	2
S401.3	3	2	2	2	-	2	2	-	-	-	-	-	3	2
S401.4	3	2	2	-	-	2	-	-	-	-	-	-	2	2
S401.5	3	2	2	2	-	2	2	-	-	-	-	-	3	2
S402 – ST5412 – PROJECT WORK (PHASE – II)														
S402.1	3	3	-	-	2	-	-	-	-	2	-	2	2	2
S402.2	3	3	2	-	-	-	-	-	-	-	-	2	2	2
S402.3	3	3	-	-	2	-	-	-	-	2	-	2	3	2
S402.5	3	3	-	-	2	-	-	-	-	2	-	2	2	3
S402.5	3	3	2	-	-	-	-	-	-	-	-	2	3	2


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**COMPUTER SCIENCE
AND
ENGINEERING**



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REGULATION - 2017 - UG		
S.NO	COURSE OUTCOME	BT LEVEL
SEMESTER III		
C301-MA8351/DISCRETE MATHEMATICS		
C301.1	Reformulating and applying statements from common language to formal logic	K3
C301.2	Identify the structures at various levels in combinatorial	K3
C301.3	Compare various groups and its algorithms in computer programming	K3
C301.4	Demonstrate the concept of groups & subgroups	K3
C301.5	Exposed the concepts and properties of lattices and Boolean algebra in mathematical manner	K3
C302-CS8351/DIGITAL PRINCIPLES AND SYSTEM DESIGN		
C302.1	Simplify Boolean functions using K map and tabulation method.	K3
C302.2	Design and Analyze Combinational Circuits	K4
C302.3	Design and Analyze Sequential Circuits	K4
C302.4	Implement designs using Programmable Logic Devices	K3
C302.5	Interpret HDL code for combinational and Sequential Circuits	K2
C303-CS8391/DATA STRUCTURES		
C303.1	Implement the operations of List ADT for problem solving.	K1
C303.2	Apply the different linear data structures (Stack and Queue) to problem solutions.	K3
C303.3	Implement the tree data structures for solving the given problems.	K3
C303.4	Apply the graph data structures to solve the given problems.	K3
C303.5	Implement the various sorting and searching algorithms.	K2
C303.6	Understand the hashing Techniques to solve the collision problems.	K2
C304-CS8392/OBJECT ORIENTED PROGRAMMING		
C304.1	Classify the difference between object oriented programming and procedural oriented language.	K2
C304.2	Identify the members of a class and its relationship for a particular problem.	K3
C304.3	Demonstrate the concepts of polymorphism and inheritance	K3


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C304.4	Identify how to overcome the disrupts of normal flow with the sequence of data.	K2
C304.5	Illustrate the importance of concurrency and able to apply the classes and interfaces as parameter.	K3
C304.6	Analyze platform independent application runtime environment and choose appropriate run time environment to create GUI and web application using java.	K4
C305-EC8395/COMMUNICATION ENGINEERING		
C305.1	Illustrate analog communication techniques	K2
C305.2	Explain digital communication techniques	K2
C305.3	Illustrate data and pulse communication techniques	K2
C305.4	Make use of various error control coding techniques to identify/correct errors	K2
C305.5	Outline multi-user radio communication	K2
C305.6	Illustrate different types of noise and its calculation.	K3
C306-CS8381/DATA STRUCTURES LABORATORY		
C306.1	Develop programs to implement linear Data Structures operations	K2
C306.2	Design programs to apply list, stack & queue operations	K3
C306.3	Build programs to implement non linear Data Structures operations	K2
C306.4	Apply non linear Data Structures for solving problems.	K3
C306.5	Develop programs to implement sorting & searching algorithms.	K2
C306.6	Design programs to implement various collision resolution techniques in hashing.	K2
C307- CS8383/ OBJECT ORIENTED PROGRAMMING LABORATORY		
C307.1	Classify the difference between object oriented programming and procedural oriented language.	K2
C307.2	Identify the members of a class and its relationship for a particular problem.	K2
C307.3	Demonstrate the concepts of polymorphism and inheritance.	K3
C307.4	Identify how to overcome the disrupts of normal flow with the sequence of data.	K2
C307.5	Summarize the importance of concurrency and able to apply the classes and interfaces as parameter.	K2

C307.6	Analyze platform independent application runtime environment and choose appropriate run time environment to create GUI and web application using java.	K3
C308-CS8382/DIGITAL SYSTEMS LABORATORY		
C308.1	Construct Sequential logic circuits to perform Count & Shift	K3
C308.2	Build combinational logic circuits to perform arithmetic operations.	K3
C308.3	Construct Sequential logic circuits to perform Count	K3
C308.4	Implement sequential circuits like registers and counters.	K3
C308.5	Construct Sequential logic circuits to perform Shift Operations	K3
C309-HS8381/INTERPERSONAL SKILLS/LISTENING & SPEAKING		
C309.1	Adeptly use the spoken word in interpersonal communication, small group interactions and public speaking.	K3
C309.2	Use the written word for informational, persuasive and creative poses.	K3
C309.3	Use language in ways appropriate of the communicative contexts they find themselves in both during and after the education.	K2
C309.4	Analyze communication context in terms of varieties of language.	K4
C309.5	Develop a global awareness of political, social and corporate issues influenced by communication sensitivity and skills.	K3
SEMESTER IV		
C401-MA8402/PROBABILITY AND QUEUEING THEORY		
C401.1	Analyze the fundamental knowledge of the concept of probability in real life phenomenon	K4
C401.2	Apply the concept of two dimensional random variable in engineering discipline	K3
C401.3	Make use of Stochastic process to solve real life application	K2
C401.4	Analyze the queuing models	K4
C401.5	Identify solutions for probabilistic models	K2
C402- CS8491/COMPUTER ARCHITECTURE		
C304.1	Identify the hardware blocks, instructions set & addressing mode	K2
C304.2	Solving the architecture related problems using arithmetic operations	K3
C304.3	Use various matrix to calculate the performance of a computer system	K3

C304.4	Detect pipeline hazards and identify possible solutions to those hazards.	K2
C304.5	Overcome the challenges of parallelism and its classifications.	K2
C304.6	Demonstrate the basic concepts of memory and I/O Systems	K2
C403- CS8492/DATABASE MANAGEMENT SYSTEMS		
C403.1	Illustrate the database design for applications.	K2
C403.2	Make use of ER diagram and normalization techniques in database application	K3
C403.3	Apply concurrency control & recovery mechanism for database problems.	K2
C403.4	Apply the various concepts in query processing.	K2
C403.5	Compare various storage techniques in database.	K2
C403.6	Apply security concepts to databases	K2
C404- CS8451/DESIGN ANALYSIS OF ALGORITHMS		
C404.1	Interpret the fundamental needs of algorithms in problem solving.	K3
C404.2	Classify the different algorithm design techniques for problem solving.	K2
C404.3	Develop algorithms for various computing problems.	K3
C404.4	Analyze the time and space complexity of various algorithms.	K3
C404.5	Identify the limitations of algorithms in problem solving.	K2
C404.6	To identify the types of problem, formulate, analyze and compare the efficiency of algorithms.	K2
C405- CS8493/OPERATING SYSTEMS		
C405.1	Summarize the basic concepts and functions of Operating Systems	K2
C405.2	Outline various threading models, process synchronization and deadlocks	K2
C405.3	Compare the performance of various CPU scheduling algorithms	K3
C405.4	Outline the basic concept of various memory management schemes	K2
C405.5	Expound I/O management and file systems	K2
C405.6	Identified the model Linux multifunction server and utilize local network services	K2


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C406- CS8494/SOFTWARE ENGINEERING		
C406.1	Explain the software engineering process and project management	K2
C406.2	Demonstrate software requirements and analysis	K2
C406.3	Outline the software design process and user interface	K2
C406.4	Compare and contrast various software testing	K2
C406.5	Discuss about the software integration and project management	K2
C407-CS8481/DATABASE MANAGEMENT SYSTEMS LABORATORY		
C407.1	Infer database language commands to create simple database	K2
C407.2	Analyze the database using queries to retrieve records	K2
C407.3	Applying PL/SQL for processing database	K2
C407.4	Analyze front end tools to design forms, reports and menus	K3
C407.5	Develop solutions using database concepts for real time requirements.	K2
C407.6	Develop database modeling for a problem.	K3
C408-CS8461/OPERATING SYSTEMS LABORATORY		
C408.1	Illustrate about the Unix command, shell programming and to compare the performance of various CPU scheduling algorithm.	K3
C408.2	Implement dead lock avoidance, detection algorithm.	K2
C408.3	Implement semaphore.	K2
C408.4	Create process and implement IPC.	K2
C408.5	Analyze the performance of the various page replacement algorithms	K3
C408.6	Implement file organization and file allocation strategies.	K2
C409-3S8461/ADVANCED READING AND WRITING		
C409.1	Take international examination such as IELTS and TOEFL	K3
C409.2	Participate in Group Discussion	K2
C409.3	Successfully answer questions in Interviews.	K3
C409.4	Make effective Presentations.	K3
C409.5	Participate confidently and appropriately in conversations both formal and informal	K3


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SEMESTER /V		
C501-MA8551/ALGEBRA AND NUMBER THEORY		
C501.1	Reformulate statements from common language to formal logic and apply the method of proofs to propositional and predicate calculus.	K2
C501.2	Identify the structures on various levels in combinatorial analysis and generating functions	K2
C501.3	Discuss various graph and its algorithms in computer programming.	K2
C501.4	Demonstrate the examples of subgroups and normal subgroup and use the concepts of isomorphism and homomorphism for groups, rings.	K3
C501.5	Exposed the concepts and properties of lattices and Boolean algebra in mathematical manner.	K3
C502-CS8591/COMPUTER NETWORKS		
C502.1	Understand the basic layers and its function in computer networks.	K2
C502.2	Evaluate the performance of a network.	K3
C502.3	Evaluate the basis of how data flows one node to another	K3
C502.4	Analyze and design routing algorithms	K3
C502.5	Design protocols for various functions in the network	K2
C502.6	Understand the working of various application layer protocols.	K2
C503-EC8691/MICROPROCESSORS AND MICROCONTROLLERS		
C503.1	Design & implement program on 8086 microprocessor.	K3
C503.2	Design and interface I/O circuits.	K3
C503.3	Design Memory Interfacing circuit	K3
C503.4	Design and implement 8051 microcontroller based systems.	K3
C503.5	Understand the Bus Structure and advanced processor	K3
C504-CS8501/THEORY OF COMPUTATION		
C504.1	Design automata and prove a statement	K3
C504.2	Construct regular expression for a pattern	K3
C504.3	Correlate different types of automata to real world applications	K3
C504.4	Design a Turing machine to solve problem on mathematical foundations	K3
C504.5	Decide whether a problem is decidable or not	K3


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C504.6	Identify different computational complexities	K3
C505-CS8592/OBJECT ORIENTED ANALYSIS AND DESIGN		
C505.1	Understand the difference between object oriented programming and procedural oriented language	K2
C505.2	Identify members of a class and its relationships for a particular problem	K2
C505.3	Demonstrate the concepts of polymorphism and inheritance	K2
C505.4	Identify how to overcome the disrupts of normal flow with the sequence of data	K2
C505.5	Understand the importance of concurrency and able to apply the classes and interfaces as parameters	K2
C505.6	Analyze platform independent application runtime environment and choose appropriate runtime environment to create GUI and Web applications using Java language.	K3
C506-OCE552/GEOGRAPHICAL INFORMATION SYSTEMS		
C506.1	Analyze the basic components of GIS.	K4
C506.2	Classify the data models, coordinate systems and data quality.	K2
C506.3	Process spatial and attribute data inputs and prepare the data linking and mapping.	K3
C506.4	Identify the data analysis tools and rectify mapping inaccuracies.	K4
C506.5	Formulate and solve geospatial problems.	K3
C507-EC8681/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY		
C507.1	Design & implement program on 8086 microprocessor.	K3
C507.2	Design and interface I/O circuits.	K3
C507.3	Design Memory Interfacing circuit	K3
C507.4	Design and implement 8051 microcontroller based systems.	K3
C507.5	Understand the Bus Structure and advanced processor	K3
C508-CS8582/OBJECT ORIENTED ANALYSIS AND DESIGN LABORATORY		
C508.1	Analyze, design, document the requirements through use case driven approach	K3
C508.2	Identity, analyze and model structural and behavioral concepts of the	K3


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	system	
C508.3	Develop explore the conceptual model into various scenarios and applications	K3
C508.4	Apply the concepts of architectural design for deploying the code for software.	K3
C509-CS8581/NETWORKS LABORATORY		
C509.1	Implement various protocol using TCP and UDP	K3
C509.2	Compare the performance of different transport layer protocols	K3
C509.3	Use simulation tools to analyze the performance of various network protocols	K3
C509.4	Analyze various routing algorithms	K3
C509.5	Implement error correction codes	K3
YEAR / SEMESTER : III/VI		
C601-CS8651/INTERNET PROGRAMMING		
C601.1	Implement various protocol using TCP and UDP	K3
C601.2	Compare the performance of different transport layer protocols	K2
C601.3	Use simulation tools to analyze the performance of various network protocols	K4
C601.4	Analyze various routing algorithms	K4
C601.5	Implement error correction codes	K3
C602-CS8691/ ARTIFICIAL INTELLIGENCE		
C602.1	Identify problems that are able to solution by AI methods.	K2
C602.2	Recognize appropriate AI methods to solve a given problem.	K2
C602.3	Able to interpret the problem in the given logic.	K3
C602.4	Implement basic AI algorithms.	K3
C602.5	Assess critically the techniques presented and apply them to real world problems	K3
C603-CS8601/MOBILE COMPUTING		
C603.1	Comprehend the basics of Mobile Computing	K2
C603.2	Express the functionality of Mobile IP and Transport Layer	K2
C603.3	Classify different types of mobile telecommunication systems	K2


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C603.4	Implement Adhoc networks with routing protocols	K3
C603.5	Use mobile operating systems in developing mobile applications	K2
C603.6	Synthesize new knowledge in the area of mobile computing by using appropriate techniques.	K2
C604-CS8602/COMPILER DESIGN		
C604.1	Design and implement a prototype compiler to correct code.	K3
C604.2	Diagnose the data flow anomalies.	K3
C604.3	Work with debugger.	K3
C604.4	Relate parallel processing and architecture interface at runtime by customizing compilation process to application.	K3
C604.5	Apply the various code optimization techniques.	K3
C604.6	Utilize the different compiler construction tools for optimization of machine language.	K2
C605-CS8603/DISTRIBUTED SYSTEMS		
C605.1	Know the issues of designing Distributed systems and understand the fundamentals of Distributed systems	K2
C605.2	Make use of Message ordering paradigms and snapshot recording algorithm	K2
C605.3	Apply the Distributed Mutual Exclusion algorithm and to detect deadlock in Distributed systems	K3
C605.4	Apply Check Pointing algorithm for recovering from failure	K3
C605.5	Use Agreement in failure in Distributed systems	K2
C605.6	Implement Peer to Peer computing & Distributed shared memory	K3
C606-IT8076/SOFTWARE TESTING		
C606.1	Formulate problem by following Software Testing Life Cycle	K2
C606.2	Design Manual Test cases for Software Project.	K2
C606.3	Identify the realistic problem for different category of software	K2
C606.4	Use automation testing tool students will be able test the software.	K3
C606.5	Follow the process related activity and testing techniques to work as team member	K3
C606.6	Use practical knowledge of a variety of ways to test software and an understanding of some of the tradeoffs between testing techniques	K3


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C607-CS8661/INTERNET PROGRAMMING LABORATORY		
C607.1	Understand, analyze and apply the role of languages like HTML, XML, and JavaScript.	K3
C607.2	Analyze a web page and identify its elements and attributes	K4
C607.3	Develop java program based on protocols like HTTP, SMTP, POP3 and FTP.	K3
C607.4	Create dynamic web pages using Servlet and JSP.	K3
C607.5	Obtain the knowledge on data manipulation in a web.	K3
C608-CS8662/MOBILE APPLICATION DEVELOPMENT LABORATORY		
C608.1	Build a native application using GUI components and Mobile application development frame work	K3
C608.2	Develop an application using basic graphical primitives and databases	K3
C608.3	Construct an application using multi threading and RSS feed	K3
C608.4	Make use of location identification using GPS in an application	K3
C608.5	Design and Implement various mobile applications using emulators.	K3
C609-CS8611/MINI PROJECT		
C609.1	Choose problems with technical importance and societal contribution	K3
C609.2	Identify and survey the relevant literature for getting exposed to related solutions	K3
C609.3	Build project plans with feasible requirements	K3
C609.4	Analyze, design and develop adaptable and reusable solutions	K4
C609.5	Implement and test solutions to trace against the user requirements	K3
C609.6	Deploy the solutions for better manageability and provide scope for improvability	K3
C610-HS8581/PROFESSIONAL COMMUNICATION		
C610.1	Apply appropriate communication skills across settings, purposes and audiences.	K3
C610.2	Demonstrate knowledge of communication theory and applications.	K3
C610.3	Practice critical thinking to develop innovative and well-founded	K3


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	perspectives related to the students emphasis. Build and maintain healthy and effective relationships.	
C610.4	Use technology to communicate effectively in various settings and contexts.	K2
C610.5	Demonstrate appropriate and professional ethical behavior.	K3
SEMESTER VII		
C701-MG8591/PRINCIPLES OF MANAGEMENT		
C701.1	Evaluate the global context for taking managerial actions of planning, organizing and controlling.	K2
C701.2	Assess global situation, including opportunities and threats that will impact management of an organization.	K3
C701.3	Integrate management principles into management practices.	K2
C701.4	Assess managerial practices and choices relative to ethical principles and standards.	K3
C701.5	Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances.	K2
C702-CS8792/CRYPTOGRAPHY AND NETWORK SECURITY		
C702.1	To explain the basics of number theory and compare the encryption techniques	K2
C702.2	To Summarize the functionality of public key cryptography	K2
C702.3	To apply the message authentication functions and secure algorithms for secure transactions	K3
C702.4	To demonstrate and apply the security systems	K3
C702.5	To discuss the different levels of security and services	K2
C702.6	To transact and keep the information in a secured manner	K2
C703-CS8791/CLOUD COMPUTING		
C703.1	Understand the concept of distributed computing.	K2
C703.2	Apply grid computing techniques.	K3
C703.3	Understand the concept of virtualization.	K2
C703.4	Use grid and cloud tool kits to develop the applications.	K2
C703.5	Apply the security models in the grid and cloud environment	K3


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C703.6	Design and develop a private cloud environment with security enhanced.	K2
C704- OBM772/HOSPITAL MANAGEMENT		
C704.1	Explain the principles of hospital administration.	K2
C704.2	Identify the importance of human resource management	K2
C704.3	List various marketing research techniques.	K2
C704.4	Identify Information management systems and its uses.	K2
C704.5	Understand safety procedures followed in hospitals	K2
C705- IT8074/SERVICE ORIENTED ARCHITECTURE		
C705.1	Infer the XML Schema, Name Space and Document Structure.	K2
C705.2	Build Applications based on XML.	K3
C705.3	Outline the SOA ethics and Service levels.	K2
C705.4	Develop web service using technology elements.	K3
C705.5	Build SOA based applications for intra and inter-enterprise applications.	K3
C705.6	Elucidate the security issues in XML.	K2
C706- CS8079/HUMAN COMPUTER INTERACTION		
C706.1	Competent to design effective dialog for HCI	K2
C706.2	Apply an interactive design process and universal design principles in designing HCI systems	K3
C706.3	Able to discuss HCI issues in groupware, ubiquitous computing, virtual reality, multimedia, and Word Wide Web-related environments	K2
C706.4	Design mock ups and carry out user and expert evaluation of interfaces	K3
C706.5	Develop meaningful user interface	K2
C706.6	How cognition and perception, which encompass attention, memory, thought, the“senses” play a role in affecting the experience of interactive design	K2
C707-CS8711/CLOUD COMPUTING LABORATORY		
C707.1	Make use of the grid toolkit.	K2
C707.2	Design and implement new grid applications on the grid.	K3
C707.3	Make use of the cloud toolkit.	K2

C707.4	Build cloud applications on cloud.	K3
C707.5	Construct the applications according to the services.	K2
C707.6	Develop a grid and cloud portal	K3
C708-IT8761/SECURITY LABORATORY		
C708.1	To apply the cryptographic algorithm for the secured data communication.	K3
C708.2	Apply the knowledge of symmetric cryptography to implement simple ciphers	K3
C708.3	Analyze and implement public key algorithms like RSA	K4
C708.4	To utilize the open source tools for analyzing the network and to provide the security for the date.	K3
C708.5	Apply and set up firewalls and intrusion detection systems using open source technologies and to explore email security.	K3
SEMESTER VIII		
C801-CS8074/CYBER FORENSICS		
C801.1	Identify the process in taking digital evidence.	K2
C801.2	Describe how to conduct an investigation using methods of memory, network and email forensics.	K2
C801.3	Analyze various data acquisition tools for collecting digital evidence.	K4
C801.4	Outline a range of situations where digital forensics may be applicable	K2
C801.5	Identify issues in the practice of digital forensic investigations.	K3
C801.6	Identify and apply various computer forensics tools to solve the computer forensic cases.	K3
C802-CS8078/GREEN COMPUTING		
C802.1	Acquire knowledge to adopt green computing practices to minimize negative impacts on the environment.	K2
C802.2	Enhance the skill in energy saving practices in their use of hardware.	K2
C802.3	Evaluate technology tools that can reduce paper waste and carbon footprint by the stakeholders.	K3
C802.4	Understand the ways to minimize equipment disposal requirements.	K2
C802.5	Identify and apply various Computing tools to solve the Environment cases.	K3

C803-CS8811/PROJECT WORK		
C803.1	Identify and finalize problem statement by surveying variety of domains	K2
C803.2	Perform requirement analysis and identify design methodologies	K3
C803.3	Apply advanced programming techniques	K3
C803.4	Present technical report by applying different visualization tools and Evaluation metrics	K3

CO-PO MAPPING														
C301-MA8351/DISCRETE MATHEMATICS														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO ₉	PO10	PO11	PO12	PSO1	PSO2
C301.1	3	3	2	2	-	-	-	-	-	-	-	2	-	2
C301.2	3	3	2	2	2	-	-	-	-	-	-	2	2	2
C301.3	3	2	2	3	3	-	-	-	-	-	-	2	3	3
C301.4	2	2	2	-	-	-	-	-	-	-	-	-	-	2
C301.5	3	3	2	-	2	-	-	-	-	-	-	2	2	2
C302-CS8351/DIGITAL PRINCIPLES AND SYSTEM DESIGN														
C302.1	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C302.2	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C302.3	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C302.4	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C302.5	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C302.6	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C303-CS8391/DATA STRUCTURES														
C303.1	3	3	1	1	2	-	-	-	-	-	-	1	3	1
C303.2	3	3	2	2	2	-	-	-	-	-	-	1	3	2
C303.3	3	3	2	2	2	-	-	-	-	-	-	1	3	2
C303.4	3	1	-	-	-	-	-	-	-	-	-	-	3	1
C303.5	3	3	2	2	2	-	-	-	-	-	-	1	3	2


PRINCIPAL
 M.I.E.T. ENGINEERING COLLEGE
 GUNDUR, TIRUCHIRAPALLI - 620 007.

C304-CS8392/OBJECT ORIENTED PROGRAMMING														
C304.1	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C304.2	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C304.3	3	3	-	2	2	-	-	-	-	-	-	3	3	2
C304.4	3	3	-	2	2	-	-	-	-	-	-	-	3	-
C304.5	3	3	2	2	2	-	-	-	-	-	-	3	3	2
C304.6	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C305-EC8395/COMMUNICATION ENGINEERING														
C305.1	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C305.2	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C305.3	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C305.4	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C305.5	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C305.6	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C306-CS8381/DATA STRUCTURES LABORATORY														
C306.1	3	2	2	-	-	-	-	-	-	-	-	-	3	-
C306.2	3	2	3	-	-	-	-	-	-	-	-	-	3	-
C306.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C306.4	3	2	2	-	-	-	-	-	-	-	-	-	3	2
C306.5	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C306.6	3	2	2	-	-	-	-	-	-	-	-	-	3	2
C307- CS8383/OBJECT ORIENTED PROGRAMMING LABORATORY														
C307.1	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C307.2	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C307.3	3	3	-	2	2	-	-	-	-	-	-	3	3	2
C307.4	3	3	-	2	2	-	-	-	-	-	-	-	3	-
C307.5	3	3	2	2	2	-	-	-	-	-	-	3	3	2


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C307.6	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C308- CS8382/ DIGITAL SYSTEMS LABORATORY														
C308.1	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C308.2	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C308.3	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C308.4	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C309-3S8381/INTERPERSONAL SKILLS/LISTENING & SPEAKING														
C309.1	3	3	-	2	2	-	-	-	-	-	-	2	-	2
C309.2	3	2	-	2	2	-	-	-	-	-	-	2	-	-
C309.3	3	3	-	3	2	-	-	-	-	-	-	2	-	-
C309.4	3	2	2	-	-	-	-	-	-	-	-	2	-	-
C309.5	3	2	2	-	-	-	-	-	-	-	-	2	-	-
C401-MA8402/ PROBABILITY AND QUEUEING THEORY														
C401.1	2	3	2	2	1	-	-	-	-	-	-	-	2	1
C401.2	3	2	2	-	-	-	-	-	-	-	-	-	-	1
C401.3	3	3	-	-	-	-	-	-	-	-	-	-	2	3
C401.4	3	3	2	-	-	-	-	-	-	-	-	-	2	2
C401.5	-	-	3	3	-	-	-	-	-	-	-	-	3	-
C402-CS8491/ COMPUTER ARCHITECTURE														
C402.1	3	2	2	-	-	-	-	-	-	-	-	-	-	-
C402.2	3	2	2	-	-	-	-	-	-	-	-	-	3	-
C402.3	3	3	2	2	-	-	-	-	-	-	-	-	-	2
C402.4	3	2	2	2	-	-	-	-	-	-	-	-	3	3
C402.5	3	3	2	2	-	-	-	-	-	-	-	-	3	3
C402.6	3	3	2	-	-	-	-	-	-	-	-	-	3	3
C403-CS8492/ DATABASE MANAGEMENT SYSTEMS														
C403.1	3	3	-	-	-	-	-	-	-	-	-	-	3	3
C403.2	3	3	-	2	-	2	-	-	-	-	-	-	3	2


PRINCIPAL
 M.I.E.T. ENGINEERING COLLEGE
 GUNDUR, TIRUCHIRAPALLI - 620 007.

C403.3	3	3	-	-	-	2	-	-	-	-	-	-	3	2
C403.4	3	3	-	-	-	-	-	-	-	-	-	-	3	1
C403.5	3	3	-	2	-	2	2	-	-	-	-	-	3	2
C403.6	3	3	-	2	-	2	2	-	-	-	-	-	3	2
C404-CS8451/ DESIGN AND ANALYSIS OF ALGORITHMS														
C404.1	3	2	-	-	-	-	-	-	-	3	-	-	3	-
C404.2	3	2	-	2	-	-	-	-	-	-	-	2	3	2
C404.3	3	2	2	2	-	2	2	-	-	-	-	-	3	3
C404.4	3	2	2	2	-	2	2	-	-	-	-	-	3	2
C404.5	3	2	-	2	-	-	-	-	-	-	-	-	3	3
C404.6	2	2	-	2	-	-	-	-	-	-	-	-	3	-
C405-CS8493/OPERATING SYSTEMS														
C405.1	3	2	-	-	-	-	-	-	-	-	-	3	-	3
C405.2	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C405.3	2	3	2	2	-	-	-	2	-	-	-	3	3	3
C405.4	2	2	2	2	-	-	-	-	-	-	-	3	3	3
C405.5	2	3	2	2	-	-	2	-	-	-	-	-	3	2
C405.6	2	2	2	2	-	-	-	-	-	-	-	2	2	2
C406-CS8494/ SOFTWARE ENGINEERING														
C406.1	3	3	-	-	-	-	-	-	-	-	-	2	3	2
C406.2	3	3	2	-	-	2	3	2	-	-	-	-	3	2
C406.3	3	3	2	2	-	2	3	2	-	-	2	-	3	2
C406.4	3	3	3	3	-	-	3	3	3	3	2	2	3	3
C406.5	3	3	3	3	2	2	3	3	3	3	3	3	3	3
C406.6	3	3	2	1	-	2	3	2	-	-	2	2	3	2
C407-CS8481/ DATABASE MANAGEMENT SYSTEMS LABORATORY														
C407.1	3	3	-	-	2	-	-	-	-	-	-	-	3	2
C407.2	3	3	-	2	2	2	-	-	-	-	-	-	3	2


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C407.3	3	3	-	2	2	2	-	2	-	-	-	-	3	2
C407.4	3	3	2	2	2	2	-	-	-	-	-	-	3	2
C407.5	3	3	2	2	2	2	-	-	-	-	-	-	3	2
C407.6	3	3	2	2	2	2	-	2	-	-	-	-	3	2
C408-CS8461/ OPERATING SYSTEMS LABORATORY														
C408.1	3	3	2	-	-	-	-	-	-	-	-	-	3	-
C408.2	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C408.3	3	3	3	3	-	-	-	-	-	-	-	-	3	3
C408.4	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C408.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C409-3S8461/ ADVANCED READING AND WRITING LABORATORY														
C409.1	3	2	3	-	-	-	-	-	3	2	2	2	-	-
C409.2	3	2	2	-	-	-	-	-	3	2	2	3	-	-
C409.3	3	3	2	-	-	-	-	-	3	2	2	3	-	-
C409.4	3	2	2	-	-	-	-	-	3	2	2	2	-	-
C409.5	3	3	2	-	-	-	-	-	3	2	2	3	-	-
C501-MA8551/ ALGEBRA AND NUMBER THEORY														
C501.1	3	3	-	2	-	-	-	2	-	3	-	-	2	2
C501.2	2	2	2	-	-	-	-	2	-	3	-	-	2	-
C501.3	2	2	-	2	-	-	-	2	-	3	-	-	2	-
C501.4	2	2	-	2	-	-	-	2	-	3	-	-	-	-
C501.5	3	2	2	2	-	-	-	2	-	-	-	-	-	2
C502-CS8591/COMPUTER NETWORKS														
C502.1	3	3	3	-	-	-	-	-	-	-	-	-	2	2
C502.2	3	3	3	-	-	-	-	-	-	-	-	-	2	2
C502.3	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C502.4	3	3	3	2	-	-	-	-	-	-	-	-	3	3
C502.5	3	3	3	2	-	-	-	-	-	-	-	-	3	3


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C502.6	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C503-EC8691/MICROPROCESSORS AND MICROCONTROLLERS														
C503.1	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C503.2	3	3	3	2	-	-	-	-	-	-	-	-	3	3
C503.3	3	3	3	2	-	-	-	-	-	-	-	-	3	3
C503.4	3	3	3	2	-	-	-	-	-	-	-	-	3	3
C503.5	2	2	3	-	-	-	-	-	-	-	-	-	3	2
C503.6	3	3	3	3	3	3	-	-	-	-	3	3	3	3
C504-CS8501/ THEORY OF COMPUTATION														
C504.1	3	3	3	2	-	-	-	-	-	-	-	2	3	2
C504.2	3	3	3	2	-	-	-	-	-	-	-	2	3	2
C504.3	2	3	-	2	-	-	-	-	-	-	-	2	2	2
C504.4	3	3	3	3	-	2	2	-	-	-	-	2	3	2
C504.5	3	3	-	3	-	2	-	-	-	-	-	2	3	3
C504.6	3	3	2	3	-	2	-	-	-	-	-	2	3	2
C505-CS8592/ OBJECT ORIENTED ANALYSIS AND DESIGN														
C505.1	3	3	3	3	3	-	-	-	-	-	-	-	3	3
C505.2	3	-	-	2	-	2	2	-	-	3	2	2	-	2
C505.3	3	3	3	2	-	-	-	-	-	-	-	-	3	-
C505.4	3	3	2	-	-	2	-	-	-	-	-	-	3	3
C505.5	2	-	3	2	-	3	-	-	-	-	-	-	3	2
C506- OCE552/GEOGRAPHICAL INFORMATION SYSTEMS														
C506.1	-	-	3	-	2	-	-	-	-	-	-	-	2	2
C506.2	3	2	2	-	1	-	-	-	-	-	-	-	2	2
C506.3	3	2	2	-	1	2	-	-	-	-	-	-	3	3
C506.4	2	2	1	-	-	1	-	-	-	-	-	-	2	2
C506.5	3	2	2	2	-	-	-	-	-	-	-	-	2	2
C506.6	3	2	2	2	-	-	-	-	-	-	-	-	2	2


PRINCIPAL
 M.I.E.T. ENGINEERING COLLEGE
 GUNDUR, TIRUCHIRAPALLI - 620 007.

C507-EC8681/ MICROPROCESSOR AND MICROCONTROLLER LABORATORY															
C507.1	3	2	2	2	2	-	-	2	2	2	-	-	2	2	
C507.2	3	2	2	2	-	-	-	2	2	2	-	-	2	2	
C507.3	3	2	2	2	-	-	-	2	2	2	-	-	2	2	
C507.4	3	2	2	2	-	-	-	2	2	2	-	-	2	2	
C507.5	3	2	2	2	2	2	-	2	2	2	2	-	2	2	
C508-CS8582/ OBJECT ORIENTED ANALYSIS AND DESIGN LABORATORY															
C508.1	3	3	2	2	2	-	-	2	2	2	-	-	3	2	
C508.2	3	2	2	2	-	-	-	-	2	2	-	-	3	2	
C508.3	3	2	3	-	-	-	-	-	-	-	-	-	3	2	
C508.4	3	2	2	-	-	-	-	-	-	-	-	-	3	2	
C508.5	3	2	2	-	-	-	-	-	-	-	-	-	-	-	
C509-CS8581/NETWORKS LABORATORY															
C509.1	3	2	2	-	-	-	-	-	-	-	-	-	3	2	2
C509.2	3	2	2	-	-	-	-	-	-	-	-	-	3	2	2
C509.3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	2
C509.4	3	3	2	-	-	-	-	-	-	-	-	-	-	-	2
C509.5	3	3	3	-	-	-	-	-	-	-	-	-	-	-	2
C509.6	3	3	3	-	-	-	-	-	-	-	-	-	3	2	2
C601-CS8651/ INTERNET PROGRAMMING															
C601.1	3	2	3	-	-	2	-	-	2	-	3	3	2	2	
C601.2	3	2	3	-	-	-	-	-	-	-	-	3	-	-	
C601.3	3	2	3	3	-	-	-	-	2	-	-	-	2	2	
C601.4	3	2	3	3	-	-	-	-	2	-	-	-	2	2	
C601.5	3	3	3	3	-	-	-	-	2	-	3	2	2	2	
C601.6	3	3	3	-	-	2	-	-	2	-	3	3	3	3	


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C602-CS8691/ ARTIFICIAL INTELLIGENCE														
C602.1	3	3	3	2	-	2	-	-	-	-	-	3	-	2
C602.2	3	3	3	2	-	-	2	-	-	-	-	3	2	2
C602.3	3	3	3	2	-	2	-	-	-	-	-	2	3	2
C602.4	3	3	3	-	-	-	-	-	-	-	-	-	3	-
C602.5	3	3	3	2	-	-	-	2	-	-	-	3	2	3
C603-CS8601/MOBILE COMPUTING														
C603.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
C603.2	3	2	-	-	-	-	-	-	-	-	-	-	-	-
C603.3	3	2	2	-	-	-	-	-	-	-	-	2	-	2
C603.4	3	3	2	2	-	2	-	-	-	-	-	2	2	2
C603.5	3	3	3	3	3	3	-	2	2	-	-	3	2	3
C603.6	3	3	3	3	2	2	2	-	-	-	-	2	3	3
C604-CS8602/ COMPILER DESIGN														
C604.1	3	3	3	2	-	-	-	-	2	-	-	-	3	2
C604.2	-	3	3	3	3	-	-	-	-	-	-	-	3	3
C604.3	3	3	3	3	2	-	-	-	2	-	2	-	3	3
C604.4	3	3	3	-	2	-	-	-	2	-	2	-	3	3
C604.5	3	-	-	2	-	-	-	-	-	-	-	3	3	2
C604.6	-	3	-	2	3	-	-	-	-	-	-	-	2	3
C605-CS8603/DISTRIBUTED SYSTEMS														
C605.1	2	2	2	2	-	-	-	-	-	-	-	-	-	-
C605.2	3	3	3	3	2	-	-	-	-	-	-	2	2	3
C605.3	2	2	2	2	-	-	-	-	-	-	-	2	-	2
C605.4	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C605.5	3	3	3	2	2	-	-	-	-	-	-	2	2	2
C606-II8076/SOFTWARE TESTING														
C606.1	-	-	-	3	-	-	-	-	-	-	-	-	3	-


PRINCIPAL

M.I.E.T. ENGINEERING COLLEGE
GUNDUR, TIRUCHIRAPALLI - 620 007.

C606.2	-	-	3		-	-	-	-	-	-	-	-	3	-
C606.3	-	-	2		-	-	-	-	-	-	-	-	3	-
C606.4	-	-	-		-	-	-	-	-	3	3	-	2	-
C606.5	-	-	-		-	-	-	-	-	2	2	-	2	-
C606.6	-	-	2	2	-	-	-	-	-	-	-	2	2	2
C607-CS8661/ INTERNET PROGRAMMING LABORATORY														
C607.1	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C607.2	2	3	2	-	-	-	-	-	-	-	-	-	-	2
C607.3	3	2	2	-	-	-	-	-	-	-	-	-	2	-
C607.4	3	3	3	2	-	-	-	-	-	-	-	-	-	2
C607.5	2	3	3	2	-	-	-	-	-	-	-	-	2	3
C607.6	2	3	3	3	-	-	-	-	-	-	-	-	2	3
C608-CS8662/MOBILE APPLICATION DEVELOPMENT LABORATORY														
C608.1	3	3	2	-	3	-	-	-	-	-	-	-	3	2
C608.2	3	3	2	-	2	-	-	-	-	-	-	-	3	2
C608.3	3	3	2	-	2	-	-	-	-	-	-	-	2	3
C608.4	3	3	2	-	3	-	-	-	-	-	-	-	3	2
C608.5	3	3	2	-	2	-	-	-	-	-	-	-	3	3
C609-CS8611/MINI PROJECT														
C609.1	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C609.2	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C609.3	3	3	-	2	2	-	-	-	-	-	-	3	3	2
C609.4	3	3	-	2	2	-	-	-	-	-	-	-	3	-
C609.5	2	2	2	2	2	-	-	-	-	-	-	3	3	2
C609.6	2	2	-	2	-	-	-	-	-	-	-	-	-	-
C610-HS8581/PROFESSIONAL COMMUNICATION														
C610.1	3	2	3	-	-	-	-	-	3	2	2	2	-	-
C610.2	3	2	2	-	-	-	-	-	3	2	2	3	-	-


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C610.3	3	3	2	-	-	-	-	-	3	2	2	3	-	-
C610.4	3	2	2	-	-	-	-	-	3	2	2	2	-	-
C610.5	3	3	2	-	-	-	-	-	3	2	2	3	-	-
C701-MG8591/PRINCIPLES OF MANAGEMENT														
C701.1	2	-	-	-	-	2	2	-	2	3	-	2	-	-
C701.2	2	-	-	-	-	2	2	-	2	3	-	2	-	-
C701.3	3	-	-	-	-	3	2	-	2	3	-	2	-	-
C701.4	3	-	-	-	-	3	2	-	2	3	-	2	-	-
C701.5	2	-	-	-	-	2	3	-	2	3	-	2	-	-
C701.6	2	-	-	-	-	2	3	-	2	3	-	2	-	-
C702-CS8792/ CRYPTOGRAPHY AND NETWORK SECURITY														
C702.1	3	3	2	2	2	-	-	-	-	-	-	2	3	2
C702.2	3	3	2	2	2	-	2	-	-	-	-	2	3	2
C702.3	3	3	3	2	3	2	2	3	3	-	3	2	3	2
C702.4	3	3	3	2	3	2	3	3	3	3	2	2	3	3
C702.5	3	3	2	2	2	2	2	2	-	-	-	2	3	3
C702.6	3	3	2	2	2	2	3	2	2	2	2	2	3	2
C703-CS8791/CLOUD COMPUTING														
C703.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
C703.2	3	2	2	2	-	2	-	-	-	-	-	-	3	2
C703.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
C703.4	3	3	3	3	3	3	2	-	-	-	-	3	3	2
C703.5	3	3	2	2	-	-	2	-	-	-	-	-	2	2
C703.6	3	3	2	2	3	-	-	3	-	-	-	3	3	3
C704/OBM752/ HOSPITAL MANAGEMENT														
C704.1	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C704.2	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C704.3	3	3	-	2	2	-	-	-	-	-	-	3	3	2


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C704.4	3	3	-	2	2	-	-	-	-	-	-	-	3	-
C704.5	3	3	2	2	2	-	-	-	-	-	-	3	3	2
C704.6	3	3	-	2		-	-	-	-	-	-	-	-	-
C705- IT8074/SERVICE ORIENTED ARCHITECTURE														
C705.1	2	2	3	-	2	-		-	-	-	-	-	-	3
C705.2	2	2	3	-	3	-	-	-	-	-	-	-	-	3
C705.3	2	2	-	-	-	-	-	-	-	-	-	-	2	-
C705.4	2	2	3	-	-	-	-	-	-	-	-	-	2	-
C705.5	2	2	3	-	3	-	-	2	-	-	2	-	-	3
C705.6	2	2	3	-	3	-	-	2	-	-	2	-	-	-
C706- CS8079/HUMAN COMPUTER INTERACTION														
C706.1	3	3	2	-	2	-	-	-	-	-	-	-	1	2
C706.2	2	3	3	1	2	3	-	-	-	-	-	-	3	2
C706.3	1	2	-	2	-	2	-	1	-	1	-	-	2	2
C706.4	3	3	2	2	2	2	2	1	-	-	-	-	2	2
C706.5	3	3	3	2	2	2	-	-	1	-	2	-	1	2
C706.6	3	3	2	1	2	2	1	-	-	-	-	-	3	2
C707-CS8711/ CLOUD COMPUTING LABORATORY														
C707.1	3	3	3	-	3	-	-	-	-	-	-	3	3	2
C707.2	3	3	3	2	3	-	-	-	-	-	-	3	3	2
C707.3	3	3	3	-	3	-	-	-	-	-	-	3	2	3
C707.4	3	3	3	3	3	-	-	-	-	-	-	3	3	2
C707.5	3	3	3	-	3	-	-	-	-	-	-	3	3	3
C707.6	3	3	3	-	3	-	-	-	-	-	-	3	3	2
C708-IT8761/SECURITY LABORATORY														
C708.1	3	3	3	2	2	2	-	2	2	2	-	3	3	2
C708.2	3	3	3	3	2	3	-	2	2	2	-	3	3	3


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C708.3	3	3	3	3	2	3	-	3	2	2	-	3	2	3
C708.4	3	3	3	3	3	3	-	3	3	2	-	3	2	3
C708.5	3	3	2	-	3	3	-	2	2	-	-	3	2	2
C801- CS8074/CYBER FROENSICS														
C801.1	3	3	-	-	-	2	-	-	-	-	-	2	2	-
C801.2	3	3	-	-	2	-	-	-	-	2	-	-	2	-
C801.3	3	-	-	2	2	2	-	-	-	2	-	2	-	2
C801.4	2	-	-	-	-	2	-	-	-	-	-	2	-	2
C801.5	3	2	-	-	-	2	-	-	-	-	-	2	2	-
C801.6	3	-	-	2	-	2	-	-	-	-	-	2	-	2
C802-CS8078/GREEN COMPUTING														
C802.1	-	3	-	-		3	-	-	-	-	-	2	2	-
C802.2	3	3	-	-			-	-	-	-	-	-	-	-
C802.3	3	-	-	-	2	2	-	-	-	2	-	2	-	2
C802.4	2	-	-	-			-	-	-	-	-	2	-	-
C802.5	3	3	-	-		2	-	-	-	-	-	2	2	-
C804-CS8811/ PROJECT WORK														
C804.1	2	-	-	3	-	-	-	-	3	2	3	2	-	2
C804.2	-	3	3	-	-	-	-	-	3	3	3	-	3	3
C804.3	-	-	-	3	2	-	-	3	3	-	3	-	3	3
C804.4	-	-	-	-	2	3	-	-	3	-	3	-	-	3


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REGULATION - 2017 - PG

M.E. COMPUTER SCIENCE AND ENGINEERING

S.No	COURSE OUTCOME	BT LEVEL
SEMESTER I		
C101/MA5160/ APPLIED PROBABILITY AND STATISTICS		
C101.1	Apply the concept to find moments and moment generating functions of distributions using the definition of a random variable.	K3
C101.2	Find marginal, conditional distribution, statistical average for the standard probability function.	K3
C101.3	For the standard probability function, find the marginal, conditional distribution, statistical average.	K3
C101.4	Find the M.L.E. and fit curves and regression lines using the least squares principle.	K3
C101.5	Small and large samples should be identified, and hypothesis testing should be used.	K3
C101.6	The students should have the ability to use the appropriate and relevant, fundamental and applied mathematical and statistical knowledge, methodologies and modern computational tools.	K3
C102/CP5151/ADVANCED DATA STRUCTURES AND ALGORITHMS		
C102.1	Understand Asymptotic notations and use recurrences methods.	K2
C102.2	Design programs for implementing trees and hierarchical data structures.	K3
C102.3	Implement various algorithms using graph structures	K3
C102.4	Develop programs for dynamic programming problems.	K3
C102.5	Design programs to implement greedy algorithms.	K3
C102.6	Understand and prove NP Completeness	K2
C103/CP5152/ADVANCED COMPUTER ARCHITECTURE		
C103.1	Understands the concepts of parallel computing and hardware technologies.	K2
C103.2	Analyze linear and non-linear pipeline processors.	K4
C103.3	Compare and contrast the parallel architectures.	K3
C103.4	Illustrate parallel programming concepts.	K3
C103.5	Measure the performance of the architecture in terms of right parameters.	K3


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C103.6	Summarize parallel architecture and software used for them.	K2
C104/ CP5153/ OPERATING SYSTEM INTERNALS		
C104.1	Identify basic components of UNIX operating system.	K2
C104.2	Conceptualize synchronization amongst various components of a typical operating System.	K2
C104.3	Understand and simulate activities of various File System.	K2
C104.4	Describe the memory management system	K2
C104.5	Illustrate Process communication and program Execution.	K3
C104.6	Correlate basic concepts of operating system with an existing operating system.	K3
C105/ CP5154/ ADVANCED SOFTWARE ENGINEERING		
C105.1	Understand the advantages of various Software Development Lifecycle Models.	K2
C105.2	Gain knowledge on project management approaches as well as cost and schedule estimation strategies	K2
C105.3	Perform formal analysis on specifications	K4
C105.4	Use UML diagrams for analysis and design	K4
C105.5	Architect and design using architectural styles and design patterns	K3
C106/CP5191/MACHINE LEARNING TECHNIQUES		
C106.1	Differentiate various learning approaches, and to interpret the concepts of supervised learning.	K2
C106.2	Compare the different dimensionality reduction techniques.	K2
C106.3	Apply theoretical foundations of decision trees to identify best split and Bayesian classifier to label data points.	K3
C106.4	Illustrate the working of classifier models like SVM, Neural Networks and identify classifier model for typical machine learning applications.	K3
C106.5	Identify the state sequence and evaluate a sequence emission probability from a given HMM.	K3
C106.6	Illustrate and apply clustering algorithms and identify its applicability in real life problems.	K3
C107/ CP5161/DATA STRUCTURES LABORATORY		
C107.1	Create programs for various sorting algorithms.	K3
C107.2	Design programs for implementing trees structures.	K3
C107.3	Develop programs for implementing heap structures	K3

C107.4	Implement various programs for application of graphs.	K3
C107.5	Develop programs for solving dynamic programming problems.	K3
C107.6	Write programs for implementing greedy algorithms.	K3
SEMESTER II		
C108/CP5201/ NETWORK DESIGN AND TECHNOLOGIES		
C108.1	Identify the components required for designing a network	K2
C108.2	Design a network at a high-level using different networking technologies	K3
C108.3	Analyze the various protocols of wireless and cellular networks	K4
C108.4	Discuss the features of 4G and 5G networks	K2
C108.5	Experiment with software defined networks	K3
C109/CP5291/ SECURITY PRACTICES		
C109.1	Identify with the core fundamental concepts of system security	K2
C109.2	Apply the security concepts related to wired and wireless scenario	K3
C109.3	Implement and deal with the security essentials in IT Sector	K3
C109.4	Competent to explain the concepts of Cyber Security and encryption Concepts	K2
C109.5	Able to attain a through knowledge in the area of privacy and storage security and related issues.	K3
C110/CP5292/ INTERNET OF THINGS		
C110.1	Analyze various protocols for IoT	K4
C110.2	Develop web services to access/control IoT devices.	K3
C110.3	Design a portable IoT using Raspberry Pi	K3
C110.4	Deploy an IoT application and connect to the cloud.	K3
C110.5	Analyze applications of IoT in real time scenario	K4
C111/ CP5293/ BIG DATA ANALYTICS		
C111.1	Understand the impact of data analytics for business decisions and strategy	K2
C111.2	Carry out data analysis/statistical analysis	K3
C111.3	To carry out standard data visualization and formal inference procedures	K3
C111.4	Design Data Architecture	K3
C111.5	Understand various Data Sources	K2
C111.6	Collect, manage, store, query, and analyze various form of big data	K3

C112/ CP5093MOBILE AND PERVASIVE COMPUTING		
C112.1	Obtain a thorough understanding of Basic Mobile computing architecture and concepts	K2
C112.2	Explain the latest 4G Telecommunications systems	K2
C112.3	Express the knowledge of basic concepts of pervasive computing	K2
C112.4	Implement the Human Computer Interaction in Pervasive computing	K2
C112.5	Work on the pervasive concepts in Mobile Environment	K3
C113/CP5071/IMAGE PROCESSING AND ANALYSIS		
C113.1	Demonstrate how digital images are acquired, stored and relationship between pixels	K2
C113.2	Apply image transformation, and image enhancement techniques.	K3
C113.3	Remove noise from real-world imagery using a variety of filtering techniques in spatial and frequency domain	K2
C113.4	Illustrate image compression, and image segmentation techniques.	K3
C113.5	Represent features of images.	K2
C114/ CS5261/DATA ANALYTICS LABORATORY		
C114.1	Process big data using Hadoop framework	K3
C114.2	Build linear and logistic regression models	K3
C114.3	Apply linear and logistic regression models	K3
C114.4	Perform data analysis with machine learning methods	K3
C114.5	Perform graphical data analysis	K3
C115/CP5281/ TERM PAPER WRITING AND SEMINAR		
C115.1	Collection of Journal papers in the topic in the context of the objective – collect 20 & then filter	K3
C115.2	To Develop the Reading and notes for first 5 papers.	K3
C115.3	Write the sections of your paper based on the classification / categorization diagram in keeping with the goals of your survey	K3
C115.4	Illustrate the Collecting the relevant bibliography	K3
C115.5	Studying the papers and understanding the author's contributions and critically analyzing each paper.	K3
C115.6	Illustrate and Writing the Final Paper and giving the final Presentation.	K3

SEMESTER III		
C201/CP5005/SOFTWARE QUALITY ASSURANCE AND TESTING		
C201.1	Perform functional and nonfunctional tests in the life cycle of the software product.	K2
C201.2	Understand system testing and test execution process.	K2
C201.3	Identify defect prevention techniques and software quality assurance metrics.	K2
C201.4	Apply techniques of quality assurance for typical applications.	K3
C201.5	To build design concepts for system testing and execution	K3
C202/ CP5074/SOCIAL NETWORK ANALYSIS		
C202.1	Work on the internals components of the social network.	K2
C202.2	Model and visualize the social network.	K2
C202.3	Mine the behavior of the users in the social network.	K2
C202.4	Predict the possible next outcome of the social network.	K2
C202.5	Apply social network in real time applications.	K3
C203/CP5076/INFORMATION STORAGE MANAGEMENT		
C203.1	To Understand the Concept of Information Storage and Data center Environment.	K2
C203.2	To understand about Data Protection.	K2
C203.3	To Know and understand Intelligent Storage System.	K2
C203.4	To Understand Fiber Channel SAN	K2
C203.5	To Understand Network Attached Storage (NAS).	K2
C203.6	To Know the Backup and Archive Technologies.	K3
C204/CP5311/ PROJECT WORK PHASE – I		
C204.1	Identify and finalize problem statement by surveying variety of domains	K2
C204.2	Perform requirement analysis and identify design methodologies	K2
C204.3	Apply advanced programming techniques	K3
C204.4	Present technical report by applying different visualization tools and Evaluation metrics	K2
C204.5	Able to know the importance of collection framework in developing effective programs	K3

SEMESTER IV		
C206/CP5411-PROJECT PHASE - II		
C206.1	Plan and construct improved methods for an identified problem by applying acquired knowledge	K3
C206.2	Experiment and Develop effective solutions through proper designing	K3
C206.3	Analyze and categorize the outcomes of the implementation and derive inferences. Assess the acquired outcomes based on evaluation metrics	K4
C206.4	Examine the completed task and compile the project report	K3
C206.5	Identify the problem by applying acquired knowledge	K3
C206.6	Plan and construct improved methods for an identified problem by applying acquired knowledge	K3

S.NO	CO-PO MAPPING													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C101/MA5160/ APPLIED PROBABILITY AND STATISTICS														
C101.1	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.2	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.3	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.4	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.5	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.6	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C102/CP5151/ADVANCED DATA STRUCTURES AND ALGORITHMS														
C102.1	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C102.2	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C102.3	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C102.4	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C102.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C102.6	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C103/CP5152/ADVANCED COMPUTER ARCHITECTURE														


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C103.1	2	2	-	-	-	2	-	-	-	-	-	1	2	-
C103.2	2	2	-	-	2		-	-	-	1	-		2	-
C103.3	2	-	-	2	2	1	-	-	-	1	-	1	-	1
C103.4	2	-	-	-	-	1	-	-	-	-	-	1	-	1
C103.5	2	2	-	-	-	1	-	-	-	-	-	2	2	-
C103.6	2	-	-	2	-	2	-	-	-	-	-	2	-	2
C104/ CP5153/OPERATING SYSTEM INTERNALS														
C104.1	3	3	3	1	-	-	-	-	1	-	-	2	1	2
C104.2	3	3	3	1	-	-	-	-	1	-	-	1	1	2
C104.3	3	3	3	1	-	-	-	-	1	-	-	1	2	1
C104.4	3	3	3	1	-	-	-	-	1	-	-	2	1	1
C104.5	3	3	3	2	-	-	-	-	-	-	-	-	1	1
C104.6	3	3	3	3	-	-	-	-	-	-	-	-	1	1
C105/ CP5154-ADVANCED SOFTWARE ENGINEERING														
C105.1	3	3	-	3	2	-	-	-	-	-	-		3	-
C105.2	3	3	-	3	2	-	-	-	-	-	-		3	-
C105.3	3	3	-	2	2	-	-	-	-	-	-	3	3	2
C105.4	3	3	-	2	2	-	-	-	-	-	-		3	-
C105.5	3	3	2	2	2	-	-	-	-	-	-	3	3	2
C105.6	3	3	-	2	-	-	-	-	-	-	-	-	-	-
C106/ CP5191-MACHINE LEARNING TECHNIQUES														
C106.1	3	3	3	1	-	-	-	-	1	-	-	2	1	2
C106.2	3	3	3	1	-	-	-	-	1	-	-	1	1	2
C106.3	3	3	3	1	-	-	-	-	1	-	-	1	2	1
C106.4	3	3	3	1	-	-	-	-	1	-	-	2	1	1
C106.5	3	3	3	2	-	-	-	-	-	-	-	-	1	1
C106.6	3	3	3	3	-	-	-	-	-	-	-	-	1	1
C107/ CP5161- DATA STRUCTURES LABORATORY														


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C107.1	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C107.2	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C107.3	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C107.4	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C107.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C107.6	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C108/CP5201/NETWORK DESIGN AND TECHNOLOGIES														
C108.1	3	3	2	2	3	2	2	-	2	2	-	-	3	2
C108.2	3	2	3	2	3	2	2	-	2	2	-	-	3	2
C108.3	3	2	2	2	3	-	-	-	-	-	-	-	3	2
C108.4	3	2	2	2	2	-	-	-	-	-	-	-	3	2
C108.5	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C109/CP5291/SECURITY PRACTICES														
C109.1	3	2	2	-	-	-	-	-	-	-	-	-	2	1
C109.2	3	3	2	2	-	-	-	-	-	-	-	-	2	1
C109.3	3	2	3	2	2	-	-	-	2	1	2	-	1	-
C109.4	3	3	3	2	2	-	-	-	2	1	2	-	2	-
C109.5	3	2	-	-	-	-	2	-	-	-	-	-	1	-
C109.6	3	3	-	-	-	-	2	-	-	-	-	-	2	-
C110/CP5292/INTERNET OF THINGS														
C110.1	3	3	2	2	3	2	2	-	2	2	-	-	3	2
C110.2	3	2	3	2	3	2	2	-	2	2	-	-	3	2
C110.3	3	2	2	2	3	-	-	-	-	-	-	-	3	2
C110.4	3	2	2	2	2	-	-	-	-	-	-	-	3	2
C110.5	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C111/ CP5293/BIG DATA ANALYTICS														
C111.1	3	3	2	2	-	-	-	-	-	-	-	-	3	-
C111.2	3	3	2	2	2	-	-	-	-	-	-	-	3	-


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C111.3	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C111.4	3	2	2	2	2	-	-	-	-	-	-	-	2	-
C111.5	3	2	2	2	2	-	-	-	-	-	-	-	2	-
C112/CP5071 /IMAGE PROCESSING AND ANALYSIS														
C112.1	2	3	3	1	2	3	-	-	-	-	-	-	3	2
C112.2	2	3	3	1	2	3	-	-	-	-	-	-	3	2
C112.3	3	3	2	2	2	2	2	1	-	-	-	-	2	2
C112.4	3	3	2	2	2	2	2	1	-	-	-	-	2	2
C112.5	3	3	3	2	2	2	-	-	1	-	2	-	1	2
C113/ CP5093/MOBILE AND PERVASIVE COMPUTING														
C113.1	3	3	3	3	-	2	2	-	-	-	-	3	2	3
C113.2	3	3	3	2	-	2	2	-	-	-	-	3	2	3
C113.3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
C113.4	3	3	-	-	-	-	-	-	-	-	-	-	-	-
C113.5	3	3	-	-	-	-	-	-	-	-	-	-	-	-
C114/CP5261/DATA ANALYTICS LABORATORY														
C114.1	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C114.2	3	2	3	2	2	-	-	-	-	-	-	-	3	2
C114.3	3	2	2	2	2	-	-	-	-	-	-	-	2	2
C114.4	3	-	-	2	2	-	-	-	-	-	-	-	2	2
C114.5	3	-	-	2	2	-	-	-	-	-	-	-	2	-
C115/CP5281/TERM PAPER WRITING AND SEMINAR														
C115.1	3	2	2	1	-	-	-	-	1	-	-	2	1	2
C115.2	3	2	2	1	-	-	-	-	1	-	-	1	1	2
C115.3	3	2	3	1	-	-	-	-	1	-	-	1	2	1
C115.4	3	2	2	1	-	-	-	-	1	-	-	2	1	1
C115.5	3	2	2	2	-	-	-	-	-	-	-	-	1	1
C115.6	2	2	2	3	-	-	-	-	-	-	-	-	1	1


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C201/CP5005/SOFTWARE QUALITY ASSURANCE AND TESTING														
C201.1	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C201.2	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C201.3	3	3	-	2	2	-	-	-	-	-	-	3	3	2
C201.4	3	3	-	2	2	-	-	-	-	-	-	-	3	-
C201.5	3	3	2	2	2	-	-	-	-	-	-	3	3	2
C202/CP5074/SOCIAL NETWORK ANALYSIS														
C202.1	3	2	3	2	-	-	-	-	1	-	-	2	1	2
C202.2	3	2	3	2	-	-	-	-	2	-	-	1	1	2
C202.3	3	2	3	2	-	-	-	-	1	-	-	2	2	1
C202.4	3	2	3	2	-	-	-	-	1	-	-	2	1	1
C202.5	2	2	3	2	-	-	-	-	-	-	-	-	1	1
C203/ CP5076/INFORMATION STORAGE MANAGEMENT														
C203.1	2	3	3	1	2	3	-	2	2	2	-	-	3	2
C203.2	1	2	-	2	-	2	-	2	2	2	-	-	2	2
C203.3	2	2	-	2	-	2	-	2	2	2	-	-	2	2
C203.4	3	3	2	2	2	2	2	2	2	2	-	-	2	2
C203.5	3	3	3	2	2	2	-	2	2	2	2	-	1	2
C203.6	3	3	2	2	3	-	-	2	2	2	2	2	3	2
C204/ CP5311-PROJECT PHASE - I														
C204.1	3	3	-	-	-	2	-	-	-	-	-	2	2	-
C204.2	3	3	-	-	2	-	-	-	-	2	-	-	2	-
C204.3	3	-	-	2	2	2	-	-	-	2	-	2	-	2
C204.4	2	-	-	-	-	2	-	-	-	-	-	2	-	2
C204.5	3	2	-	-	-	2	-	-	-	-	-	2	2	-
C205/CP5411-PROJECT P3ASE - II														
C206.1	3	3	-	-	-	2	-	-	-	-	-	2	2	-
C206.2	3	3	-	-	2	-	-	-	-	2	-	-	2	-


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C206.3	3	-	-	2	2	-	-	-	-	2	-	2	-	2
C206.4	2	-	-	-	-	2	-	-	-	-	-	2	-	2
C206.5	3	2	-	-	-	2	-	-	-	-	-	2	2	-



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ELECTRICAL AND ELECTRONICS ENGINEERING



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REGULATION – 2017 - UG

S.NO	COURSE OUTCOME	BT LEVEL
SEMESTER III		
C201-MA8353/TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS		
C201.1	To understand the basic properties of Standard Partial Differential Equations. Apply the Fundamental concept of Partial Differential Equations.	K2
C201.2	To develop Fourier Series for different types of functions.	K3
C201.3	Find the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions	K3
C201.4	To solve the Problems using Fourier Transforms and its inverse Transforms.	K3
C201.5	Have a knowledge in Z- transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.	K2
C201.6	After successfully completing the course, the student will have a good understanding of the topics and their applications	K2
C202-EE8351/DIGITAL LOGIC CIRCUITS		
C202.1	Develop a digital logic and apply it to solve real life problems.	K3
C202.2	Analyze, design and implement combinational logic circuits.	K4
C202.3	Classify different semiconductor memories.	K3
C202.4	Analyze, design and implement sequential logic circuits.	K4
C202.5	Analyze digital system design using PLD.	K4
C202.6	Simulate and implement combinational and sequential circuits using VHDL systems.	K3
C203-EE8391/ELECTROMAGNETIC THEORY		
C203.1	Ability to Illustrate the Sources and effects of electromagnetic fields and discuss about various Coordinate Systems,laws and theorems related to electromagnetic fields.	K2
C203.2	Able to analyse,find the Electric field produced in free space, dielectrics and apply boundary conditions to find Capacitance, Energy density.	K4
C203.3	Able to analyse the magnetic field intensity (H) and apply Biot–Savart’s Law, Ampere’s Circuit Law to find H due to straight conductors, circular loop, infinite	K4


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	sheet of current.	
C203.4	Able to illustrate the concept of magnetic flux density (B) – B in free space, conductor and study the characteristics of magnetic materials.	K2
C203.5	Capable to analyse the magnetic Circuits ,apply Faraday's law solve problems related to Displacement current	K4
C203.6	To describe and derive the Maxwell's equations and apply it in solving Electromagnetic wave generating equations.	K3
C204-EE8301/ ELECTRICAL MACHINES – I		
C204.1	Obtain the knowledge about the fundamental of Magnetic circuits and Magnetic Materials.	K2
C204.2	Secure the idea about the various construction details and erection of Transformer	K3
C204.3	Assured the working principles of electrical machines and classify the various generator and its mathematical models	K2
C204.4	Establish the working principles of electrical machines and classify the various motor and its speed control techniques	K3
C204.5	Expertise in testing methods to obtain the performance of DC Machines.	K4
C204.6	Analyze the realtime recent applications of DC Machines and Transformers.	K4
C205-EC8353/ELECTRON DEVICES AND CIRCUITS		
C205.1	Understand the construction and modeling of semiconductor diodes and rectifiers.	K2
C205.2	Discuss the methods of transistors and its characteristics.	K2
C205.3	Interpret the midband analysis of amplifier circuits with gain and impedance values.	K3
C205.4	Analyze the frequency response of differential amplifier and tuned circuits.	K4
C205.5	Examine the methods of feedback and generation of oscillator conditions.	K2
C205.6	Understand characteristics of electron devices towards its applications.	K2
C206-ME8792/ POWER PLANT ENGINEERING		
C206.1	Draw the layout of modern coal power plant and list the various components used in thermal power plant.	K1
C206.2	Identify the components of diesel and gas turbine power plants and construct the integrated gasifier based combined cycle systems.	K2
C206.3	Describe the layout of subsystems of various nuclear power plants and express safety measures for nuclear power plants.	K1
C206.4	Distinguish different hydroelectric power plants and construct various renewable energy power plants such as wind, tidal, PV, solar, thermal, geo thermal, biogas and fuel cell.	K3

C206.5	Calculate the per unit cost of electrical energy based on Power tariff, load factor, demand factor, diversity factor and plant safety factor.	K3
C206.6	Draw the layout of modern coal power plant and list the various components used in thermal power plant.	K2
C207- EC8311/ELECTRONICS LABORATORY		
C207.1	Analyse various types of diodes and its v-i characteristics.	K4
C207.2	Construct the various types of transistors and draw its v-i characteristics.	K3
C207.3	Demonstrate the various types of amplifiers.	K2
C207.4	Categorize about filter circuits and multivibrators.	K3
C207.5	Design and analyze the feedback amplifiers and oscillator circuits.	K4
C207.6	Ability to perform different types of electronic circuits and its characteristics.	K2
C208- EE8311/ ELECTRICAL MACHINES LABORATORY – I		
C208.1	Analyze the characteristics of DC shunt generator DC compound generator and calculate critical resistance and critical speed	K4
C208.2	Examine load characteristics of DC shunt, series and compound motor and identify its maximum efficiency operating point	K3
C208.3	Predict the efficiency of DC shunt machine in different methods	K3
C208.4	Explain the load characteristics of single phase and three phase transformer , separate the different losses and to find the efficiency	K2
C208.5	Predetermine the equivalent circuit parameters of single phase transformer in two different methods and compare the results	K3
C208.6	Explore the DC starters.	K2
SEMESTER IV		
C209-MA8491/ NUMERICAL METHODS		
C209.1	Able to solve the system of equations by using different methods and find Eigen values and Eigen vectors of a given matrix by power method.	K3
C209.2	To make effective use of the interpolation formulas to find the missing data using the given data.	K3
C209.3	Apply the techniques of solving any algebraic, transcendental equations	K3
C209.4	Distinguish among the criteria of selection and procedures of various Numerical integration as well as Numerical differentiation rules.	K3
C209.5	Apply various numerical methods in solving an initial value problem involving an ordinary differential equation.	K3

C209.6	Estimate the best fit polynomial for the given tabulated data using the methods of Newton's interpolation and Lagrange's interpolation.	K3
C210-EE8401/ ELECTRICAL MACHINES – II		
C210.1	Draw the constructional details and explain the performance of salient and non – salient type synchronous generators.	K2
C210.2	Draw and explain the Principle of operation and performance of synchronous motor.	K2
C210.3	Draw and describe the construction, principle of operation and performance of induction machines.	K2
C210.4	Describe the starting and speed control of three-phase induction motors.	K2
C210.5	Explain the construction, principle of operation and performance of single phase induction motors and special machines.	K2
C210.6	Ability to model and analyze electrical apparatus and their application to power system.	K4
C211-EE8402/ TRANSMISSION AND DISTRIBUTION		
C211.1	Identify the basic elements of the electric power system, generation, transmission, distribution and describe the role played by each element.	K2
C211.2	Compute the losses, efficiency and parameters of the Transmission line.	K3
C211.3	Analyze the Performance of Transmission Lines.	K4
C211.4	Solve the voltage distribution in insulator strings, cables and methods to improve the same.	K3
C211.5	Design overhead lines both Mechanical and electrical aspects using Sag calculation..	K4
C211.6	Ability to understand and analyze power system operation, stability, control and protection.	K1
C211- EE8403/ MEASUREMENTS AND INSTRUMENTATION		
C212.1	To introduce the basic functional elements of instrumentation.	K2
C212.2	To introduce the fundamentals of electrical and electronic instruments.	K2
C212.3	To construct a suitable bridges for measurement of particular parameters.	K3
C212.4	To introduce various storage and display devices.	K2
C212.5	To introduce various transducers and the data acquisition systems.	K2
C213- EE8451/ LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY		
C213.1	Explain the procedure for the fabrication of IC	K2

C213.2	Summarize the DC & AC characteristics of Operational amplifier.	K2
C213.3	Discuss the applications of Operational amplifier	K2
C213.4	Describe the internal functional blocks of special ICs like Timer and PLL	K2
C213.5	Classify types of voltage regulators and describe the special ICs	K3
C213.6	Ability to understand and analyse, linear and digital electronic circuits.	K2
C214- IC8451/ CONTROL SYSTEMS		
C214.1	Develop electrical models/ mechanical models to design a physical system for a specific operation.	K3
C214.2	Understand, define different time domain specification parameters and thus can apply that knowledge to conclude dynamic performance of a system.	K2
C214.3	Use the basic knowledge in obtaining the open loop and closed-loop frequency responses of systems	K2
C214.4	Able to explain the stability analysis and types of compensators.	K2
C214.5	To describe the state variable representation of physical systems and the effect of state feedback	K2
C214.6	Able to explain and use all the control techniques and to determine stability of all systems	K2
C215-EE8411/ ELECTRICAL MACHINES LABORATORY - II		
C215.1	Determine the voltage regulation of three phase alternator in different methods and compare the results.	K3
C215.2	Determine the voltage regulation of salient pole synchronous machine and find negative & zero sequence components.	K3
C215.3	Explain the V and inverted V characteristics of three phase synchronous machine at different load condition.	K2
C215.4	Determine and pre determine performance characteristics of three phase induction Motor.	K3
C215.5	Determine and pre determine performance characteristics of single phase induction Motor.	K3
C315.6	Ability to model and analyze electrical apparatus and their application to power system.	K4
C216- EE8461/ LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY		
C216.1	Apply Boolean functions to implement adder, subtractor circuits and convert Excess 3 to BCD, Binary to Gray code and vice versa.	K3

C216.2	Test Parity generator and checker and Design encoder decoder circuits	K3
C216.3	Demonstrate 4 bit synchronous, asynchronous counter and Shift registers	K3
C216.4	Illustrate multiplexer demultiplexer circuit and apply 555 timer in Monostable and Astable operation.	K3
C216.5	Apply OP-AMP to construct Adder, comparator, differentiator, Integrator and Describe VCO, PLL characteristics.	K3
C216.6	Ability to understand and analyse, linear and digital electronic circuits.	K4
C217- EE8412/TECHNICAL SEMINAR		
C217.1	Present seminar in the field of electrical and electronics engineering subjects studied.	K2
C217.2	Solve objective type questions in the field of electrical and electronics engineering.	K3
C217.3	Communicate effectively, the subjects learned in the form of seminar presentation.	K2
C217.4	Communicate effectively, the modern trends in the field of electrical and electronics engineering.	K2
C217.5	Answer effectively during technical interviews.	K2
SEMESTER V		
C301- EE8501/POWER SYSTEM ANALYSIS		
C301.1	Discuss Various components of Power System, their characteristics and Modelling.	K2
C301.2	Draw equivalent single line reactance and impedance diagrams and per unit representation of a power system	K2
C301.3	Explain significance of load flow problem and apply numerical techniques to obtain Load flow solution..	K2
C301.4	Interpret the effect of symmetrical fault conditions and select suitable rating for various protective devices in a. power system	K3
C301.5	Apply symmetrical components and solve unsymmetrical faults.in a power system.	K3
C301.6	Discuss stability classifications and calculate stability limits using equal area criterion and numerical methods.	K2
C302- EE8551/MICROPROCESSORS AND MICROCONTROLLERS		
C302.1	Describe the basic Architecture of 8085 Microprocessor and working of all blocks of the processor, IO and memory interfacing with necessary timing diagrams.	K2
C302.2	Classify the instructions with the help of Addressing modes of 8085 with necessary programs.	K3

C302.3	Explain the basic Architecture of 8051 Microcontroller with working of various blocks of the controller like Interrupts, Timer, IO ports etc. with necessary timing diagram and compare the programming concepts with 8085.	K2
C302.4	Analyze the architecture of various Interfacing Devices like 8255 PPI, 8259 PIC, 8251 USART, 8279, 8253	K4
C302.5	Analyze the architecture of various Interfacing Devices like ADC and DAC and Programming of all the Interfacing IC's.	K4
C302.6	Apply the knowledge of programming concepts of 8051 Microcontroller for various applications like keyboard display interface, servo motor etc.,	K3
C303- EE8552/POWER ELECTRONICS		
C303.1	Explain the significance of switching devices and its application to power Converters and demonstrate the triggering circuit and snubber circuits.	K2
C303.2	Compare the operation of two, three Pulse Converters and draw output Waveforms with and without source and load inductance.	K2
C303.3	Classify the operation of Choppers and outline the application of SMPS.	K3
C303.4	Analyze the operation of single phase and three phase Inverters with and without.	K4
C303.5	Illustrate the operation of cycloconverter and its application.	K3
C303.6	Illustrate the operation of AC voltage controller and its application.	K3
C304- EE8591/DIGITAL SIGNAL PROCESSING		
C304.1	Classify the different types of signals and systems and Explain the sampling process of continuous time signal.	K3
C304.2	Apply z-transform and inverse Z transform and analyze discrete time systems.	K3
C304.3	Apply Radix-2 Decimation in Time (DIT) and Decimation in Frequency (DIF) FFT Algorithm to Compute Discrete Fourier Transform	K3
C304.4	Explain different types of Infinite Impulse Response (IIR) filters and Finite Impulse Response (FIR) filters	K2
C304.5	An understanding of sampling conversion technique in signal processing and its applications.	K2
C304.6	Explain various architectures of Digital signal processors.	K2
C305-CS8392/OBJECTED ORIENTED PROGRAMMING		
C305.1	Gain the basic knowledge on object oriented concepts	K3
C305.2	Ability to implement features of object oriented programming to solve real world problems.	K3

C305.3	Analyze the suitable test to validate the programs with exception handling mechanism.	K4
C305.4	Analyze and apply to evaluate the concept of overloading.	K4
C305.5	Develop the concept of java in creating classes, objects using arrays and control statements.	K3
C305.6	Create packages, handle exceptions and develop multi-threaded programs.	K4
C306- OCE551/AIR POLLUTION AND CONTROL ENGINEERING		
C306.1	An understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management	K2
C306.2	Ability to identify, formulate and solve air and noise pollution problems	K2
C306.3	Ability to design stacks and particulate air pollution control devices to meet applicable standards.	K3
C306.4	Ability to select control equipments.	K3
C306.5	Ability to ensure quality, control and preventive measures.	K3
C306.6	To impart knowledge on the principle and design of control of Indoor/ particulate/ gaseous air pollutant and its emerging trends.	K3
C307- EE8511/CONTROL AND INSTRUMENTATION LABORATORY		
C307.1	Determine the characteristics of P, PI and PID controllers experimentally and analyze the stability of the control system by (i) Bode plot (ii) Root Locus Plot and (iii) Nyquist plot using MATLAB	K3
C307.2	Compute the transfer function of a Field controlled DC motor experimentally and Design the Lag, Lead and Lag-Lead Compensators for the given specifications and hook up it using RC networks	K3
C307.3	Draw the transient response of Position Control system experimentally, Determine the Characteristics of Synchro-Transmitter- Receiver and Use the MATLAB for the Simulation of Control Systems	K3
C307.4	Calculate the unknown Capacitance, Inductance and Resistance using AC and DC Bridges experimentally and Analyze the Dynamics of Sensors/Transducers (a) Temperature (b) Pressure (c) Displacement (d) Optical (e) Strain and (f) Flow	K3
C307.5	Measure the Power and Energy experimentally	K3
C307.6	Analyze the Signal Conditioning units (a) Instrumentation Amplifier (b) ADC and DACs and Use the MATLAB for Process Simulation	K4
C308- HS8581/PROFESSIONAL COMMUNICATION		
C308.1	Apply appropriate communication skills across settings, purposes and audiences.	K3

C308.2	Demonstrate knowledge of communication theory and applications.	K3
C308.3	Practice critical thinking to develop innovative and well-founded perspectives related to the students emphasis. Build and maintain healthy and effective relationships.	K3
C308.4	Use technology to communicate effectively in various settings and contexts.	K3
C308.5	Demonstrate appropriate and professional ethical behavior.	K3
C309-CS8383/ OBJECT ORIENTED PROGRAMMING LABORATORY		
C309.1	Design C++ programs using functions, classes with objects, member functions and constructors.	K3
C309.2	Develop operator and function overloading and run time polymorphism using C++.	K3
C309.3	Develop file handling techniques in C++ for sequential and random access also use Java code for strings.	K3
C309.4	Construct packages and interfaces in Java.	K3
C309.5	Create threads in Java and handle predefined and user defined exceptions.	K4
C309.6	Ability to model and analyze electrical apparatus and their application to power system.	K4
SEMESTER VI		
C310- EE8601/ SOLID STATE DRIVES		
C310.1	Classify the various types of drives and load torque characteristics and Apply the multi quadrant dynamics in hoist load system.	K3
C310.2	Analyze the operation of steady state analysis of single phase and three phase fully controlled converter and Chopper fed separately excited dc motor drives and discuss the various control strategies of converter.	K4
C310.3	Explain the operation and characteristics of various methods of solid state speed control of induction motor.	K2
C310.4	Describe the operation of various modes of V/f control of synchronous motor drives and different types of permanent magnet synchronous motor drives.	K2
C310.5	Design a current and speed controller and develop the transfer function for DC motor, load and converter, closed loop control with current and speed feedback.	K3
C310.6	Ability to understand and apply basic science, circuit theory, and Electro-magnetic field theory control theory and apply them to electrical engineering problems.	K2
C311-EE8602/ PROTECTION AND SWITCH GEAR		
C311.1	Summarize the causes and effects of faults in power system and explain the	K3


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	necessity of protection in power system.	
C311.2	Describe the operation of various relays and summarize the various protective schemes	K2
C311.3	List out the various faults that can occur on alternator, transformer, busbar and transmission line and select the suitable protection schemes.	K2
C311.4	Synthesize the static relays using comparators and explain numerical relays.	K3
C311.5	Derive the expression for RRRV, critical resistance value	K3
C311.6	Express the various types of circuit breakers and its application.	K2
C312-EE8691/EMBEDDED SYSTEMS		
C312.1	Analyze the basic build process of embedded systems, structural units in embedded, processor and selection of processor and memory devices depending upon the applications.	K4
C312.2	Classify the types of I/O device ports and buses and different interfaces for data transfer.	K3
C312.3	Model the Embedded Product Development Life Cycle (EDLC) by using different techniques like state machine model, sequential program model and concurrent model	K4
C312.4	Analyze the basic concept of Real Time Operating Systems and plan to scheduling of different task and compare the features of different types of Real Time Operating Systems	K4
C312.5	Apply the knowledge of programming concepts of Embedded Systems for various applications like Washing Machine automotive and Smart Card System applications	K3
C313- GE8075/ INTELLECTUAL PROPERTY RIGHTS		
C313.1	Identify different types of Intellectual Properties (IPs), the right of ownership, scope of protection as well as the ways to create and to extract value from IP.	K3
C313.2	Recognize the crucial role of IP in organizations of different industrial sectors for the purposes of product and technology development.	K3
C313.3	Identify activities and constitute IP infringements and the remedies available to the IP owner and describe the precautions steps to be taken to prevent infringement of proprietary rights in products and technology development.	K3
C313.4	Be familiar with the processes of Intellectual Property Management (IPM) and various approaches for IPM and conducting IP and IPM auditing and explain how IP can be managed as a strategic resource and suggest IPM strategy.	K2

C313.5	Be able to anticipate and subject to critical analysis arguments relating to the development and reform of intellectual property right institutions and their likely impact on creativity and innovation.	K3
C313.6	Be able to demonstrate a capacity to identify, apply and assess ownership rights and marketing protection under intellectual property law as applicable to information, ideas, new products and product marketing	K3
C314- EI8073/BIOMEDICAL INSTRUMENTATION		
C314.1	Ability to understand the philosophy of the heart, lung, blood circulation and expiration system.	K2
C314.2	Ability to provide latest ideas on devices of non-electrical devices.	K2
C314.3	Ability to gain knowledge on various sensing and measurement devices of electrical origin.	K3
C314.4	Ability to understand the analysis systems of various organ types.	K2
C314.5	Ability to bring out the important and modern methods of imaging techniques and their analysis.	K3
C314.6	Ability to explain the medical assistance/techniques, robotic and therapeutic equipments.	K2
C315-EE8661/ POWER ELECTRONICS AND DRIVES LABORATORY		
C315.1	Draw the VI characteristics of SCR and generate the Gate Pulse using R, RC and UJT	K2
C315.2	Plot the characteristics of MOSFET and IGBT	K2
C315.3	Simulate a single phase AC to DC half and fully controlled converter	K3
C315.4	Draw the output response of step up and step down MOSFET based chopper and Simulate a single phase IGBT based PWM inverter.	K2
C315.5	Plot the output response of AC voltage controller and Simulate the Power Electronic Circuits	K2
C315.6	Ability to understand and analyze, linear and digital electronic circuits.	K4
C316- EE8681/ MICROPROCESSORS AND MICROCONTROLLERS LABORATORY		
C316.1	Demonstrate and apply working of programs in microprocessor 8085 and 8051 microcontroller.	K3
C316.2	Explain various assembly language programs	K2
C316.3	Develop the basic knowledge of microprocessor and microcontroller interfacing and their application	K3

C316.4	Design the system using capabilities of stack program counter and status register and show how these are used to execute a machine code program	K3
C316.5	Justify the programming proficiency using various addressing modes and data transfer instruction of target microprocessor	K2
C316.6	Develop mini-projects using 8085 processor	K3
C317- EE8611/MINI PROJECT		
C317.1	Able to develop their own innovative prototype of ideas.	K3
C317.2	Able to frame and use right principles.	K3
C317.3	Able to implement proper methodology.	K3
C317.4	Able to take up their final year project work.	K3
C317.5	Able to prepare mini project reports and examination.	K3
C317.6	Able to find solution for real time applications.	K3
SEMESTER VII		
C401-EE8701/HIGH VOLTAGE ENGINEERING		
C401.1	Identify the causes of over voltage and its effects in power system.	K3
C401.2	Classify the breakdown Mechanisms in Solid, Liquid, gases and Composite dielectrics	K3
C401.3	Design different type of Generating circuit for high voltage D.C and high voltage A.C	K4
C401.4	Measure A.C and D.C high voltage and current using appropriate method	K3
C401.5	Test the transformer ,insulator , circuit breakers, surge diverters and cables also discuss the insulation coordination	K3
C401.6	Ability to understand and analyze power system operation, stability, control and protection.	K4
C402-EE8702/ POWER SYSTEM OPERATION AND CONTROL		
C402.1	Explain the concept of transients and Compute the solution of transient current equation for RL and RLC system.	K2
C402.2	Illustrate the importance of switching transients; Explain the concept of resistance switching, load switching and capacitance switching.	K2
C402.3	Explain the concept of lightning mechanism, Describe the interaction between lightning and power system	K2
C402.4	Apply the concept of reflection and refraction, Draw the Bewley Lattice diagram for different systems.	K3

C402.5	Analyze the concept of short line (or) Kilometric fault and justify the EMTP for transient computation.	K3
C402.6	Ability to understand and analyze power system operation, stability, control and protection.	K1
C403-EE8703/RENEWABLE ENERGY SYSTEMS		
C403.1	Examine the various types of renewable energy sources	K1
C403.2	Acquiring the knowledge about the performance of IG, PMSG, SCIG and DFIG	K3
C403.3	Ability to fabricate different power converters namely AC to DC , DC to DC and AC to AC converters for renewable energy sources	K3
C403.4	Analyze various operating modes of wind electrical generators and solar energy system	K4
C403.5	Strengthen the knowledge about maximum power point tracking algorithms	K3
C403.6	Gain the knowledge about various grid integrated systems	K3
C404- EE8005/ SPECIAL ELECTRICAL MACHINES		
C404.1	Explain the construction, operating principle and performance characteristics of synchronous reluctance motors and its applications.	K2
C404.2	Discuss the constructional features, modes of excitation for different configuration and derive the torque equations, closed control operation and applications of stepper motor.	K2
C404.3	Describe the constructional features, principle of operation, performance analysis and applications of SRMs and develop control circuits for power converters.	K2
C404.4	Describe the constructional features, principle of operation, performance analysis and applications of PMSM motor and discuss the power converter and controller circuits.	K2
C404.5	Explain the principle and operational characteristics of ideal PMSM.	K2
C404.6	Explain the principle and operational characteristics, VA requirements and power converter for PMSM.	K2
C405- EE8015/ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION		
C405.1	To understand the main aspects of generation, utilization and conservation.	K2
C405.2	To identify an appropriate method of heating for any particular industrial application	K3
C405.3	To evaluate domestic wiring connection and debug any faults occurred.	K4
C405.4	To construct an electric connection for any domestic appliance like refrigerator as well as to design a battery charging circuit for a specific household application.	K3
C405.5	To realize the appropriate type of electric supply system as well as to evaluate	K3


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	the performance of a traction unit	
C405.6	To understand the main aspects of Traction.	K2
C406- OBT751/ANALYTICAL METHODS AND INSTRUMENTATION		
C406.1	Able to understand the properties of electromagnetic radiation.	K2
C406.2	Able to understand the molecular absorption spectrometry.	K2
C406.3	Able to get the knowledge of NMR and Mass spectrometry.	K2
C406.4	Able to understand the various chromatographies.	K2
C406.5	Able to analyze the electro and surface microscopy.	K4
C406.6	Able to find the various scanning probe microscopes.	K3
C407- EE8711/POWER SYSTEM SIMULATION LABORATORY		
C407.1	Determine the bus impedance and admittance matrices using C and MATLAB	K3
C407.2	Apply numerical methods for solving load flow problems and verify using C and MATLAB	K3
C407.3	Analyze various faults occurring in power system and simulate the faults using PSCAD.	K4
C407.4	Analyze small signal stability of Single Machine Infinite Bus (SMIB) system and draw the swing curve using AUPOWER Lab and MATLAB.	K4
C407.5	Generate the coding for economic dispatch problems and load frequency dynamics problems using MATLAB.	K3
C408- EE8712/RENEWABLE ENERGY SYSTEMS LABORATORY		
C408.1	Ability to understand and analyze Renewable energy systems	K2
C408.2	Ability to train the students in Renewable Energy Sources and technologies.	K3
C408.3	Ability to provide adequate inputs on a variety of issues in harnessing Renewable Energy.	K2
C408.4	Ability to simulate the various Renewable energy sources.	K3
C408.5	Ability to recognize current and possible future role of Renewable energy sources.	K3
C408.6	Ability to understand basics of Intelligent Controllers.	K2
SEMESTER VIII		
C409- GE8074 /HUMAN RIGHTS		
C409.1	Able to understand the classifications of rights.	K2
C409.2	Able to understand the Evolution of the concept of Human Rights.	K2

C409.3	Able to understand the theories and perspectives of UN laws.	K2
C409.4	Able to identify the human rights in India.	K3
C409.5	Able to acquire the basic knowledge of human rights.	K2
C409.6	Able to understand the role of NGO's in human rights.	K2
C410- EE8010/POWER SYSTEM TRANSIENTS		
C410.1	Ability to understand and analyze switching and lightning transients.	K2
C410.2	Ability to acquire knowledge on generation of switching transients and their control.	K2
C410.3	Ability to analyze the mechanism of lighting strokes.	K4
C410.4	Ability to understand the importance of propagation, reflection and refraction of travelling waves.	K2
C410.5	Ability to find the voltage transients caused by faults.	K3
C410.6	Ability to understand the concept of circuit breaker action, load rejection on integrated power system.	K2
C411- EE8811 / PROJECT WORK		
C411.1	Apply the fundamentals of mathematics, science and engineering knowledge to identify , formulate , design and investigate complex engineering problems of electrical and electronics engineering and allied applications .	K3
C411.2	Apply appropriate techniques and modern engineering hardware and software tools in electrical and electronics engineering and allied applications.	K3
C411.3	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues with societal and environmental context , applying ethical principles in the field of electrical and electronics engineering and allied applications.	K3
C411.4	Function effectively as an individual and as a member or leader in diverse teams in multidisciplinary settings and make effective presentation, and communicate effectively.	K3
C411.5	Demonstrate the understanding of the engineering and management principles in multidisciplinary environments to engage in lifelong learning in the broadest context of technological change.	K3

CO-PO MAPPING												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C201-MA8353/TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS												
C201.1	3	2	2	-	-	2	-	-	-	3	-	2
C201.2	2	3	2	-	-	-	-	-	-	-	-	-
C201.3	3	2	2	-	-	-	-	-	-	2	-	-
C201.4	3	2	3	2	2	-	-	2	-	2	-	-
C201.5	3	3	2	2	-	2	-	-	-	-	-	2
C201.6	3	2	2	2	2	2	-	2	-	-	2	2
C202-EE8351/DIGITAL LOGIC CIRCUITS												
C202.1	3	2	2	2	-	-	-	-	-	2	2	2
C202.2	3	2	2	2	2	-	-	-	-	2	2	2
C202.3	3	2	2	2	-	-	-	-	-	2	2	2
C202.4	3	2	2	2	-	-	-	-	-	2	2	2
C202.5	3	2	2	2	2	-	-	-	-	2	2	2
C202.6	3	2	2	2	3	-	-	-	-	2	2	2
C203-EE8391/ELECTROMAGNETIC THEORY												
C203.1	3	3	3	2	2	2	-	2	2	2	3	2
C203.2	3	2	3	2	2	-	-	-	-	3	2	2
C203.3	3	2	2	2	2	-	-	-	-	2	2	2
C203.4	3	3	2	2	3	-	2	-	-	2	2	2
C203.5	3	3	3	2	2	-	-	-	-	3	2	2
C203.6	2	2	3	2	3	-	-	2	-	2	2	2
C204-EE8301/ ELECTRICAL MACHINES - I												
C204.1	3	3	2	2	-	-	-	-	-	-	-	2
C204.2	3	3	3	2	-	-	-	-	-	-	-	2
C204.3	3	3	3	2	-	-	-	-	-	-	-	2
C204.4	3	3	2	2	-	-	-	-	-	-	-	2
C204.5	3	3	3	2	-	-	-	-	-	-	-	2


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C204.6	3	3	3	2	-	-	-	-	-	-	-	2
C205-EC8353/ELECTRON DEVICES AND CIRCUITS												
C205.1	3	3	3	2	2	-	-	-	-	-	-	2
C205.2	3	3	3	3	3	-	-	-	-	-	-	2
C205.3	3	3	2	3	2	-	-	-	-	-	-	2
C205.4	3	2	2	2	2	-	-	-	-	-	-	2
C205.5	3	2	2	2	3	-	-	-	-	-	-	2
C205.6	3	3	3	3	3	-	-	-	-	-	-	2
C206-ME8792/POWER PLANT ENGINEERING												
C206.1	3	2	3	2	2	3	2	3	2	2	2	2
C206.2	3	2	3	2	3	3	-	3	2	-	-	2
C206.3	3	2	3	2	2	2	2	2	2	2	2	-
C206.4	3	2	2	2	2	2	2	2	-	2	2	2
C206.5	3	2	2	2	2	2	2	2	2	2	-	2
C206.6	3	2	2	2	2	2	2	-	2	2	2	2
C207- EC8311/ELECTRONICS LABORATORY												
C207.1	3	2	2	3	2	-	-	-	-	-	2	2
C207.2	3	2	2	3	2	-	-	-	-	-	2	2
C207.3	3	2	2	2	2	-	-	-	-	-	2	2
C207.4	3	2	2	2	2	-	-	-	-	-	2	2
C207.5	3	2	2	2	2	-	-	-	-	-	2	2
C207.6	3	2	2	3	3	-	-	-	-	-	2	2
C208- EE8311/ ELECTRICAL MACHINES LABORATORY - I												
C208.1	3	3	-	-	-	2	-	-	-	-	2	2
C208.2	3	3	-	-	-	2	-	-	-	-	2	2
C208.3	3	2	-	-	-	2	-	-	-	-	2	2
C208.4	3	2	-	-	-	2	-	-	-	-	2	2
C208.5	3	2	-	-	-	2	-	-	-	-	2	2
C208.6	3	2	-	-	-	2	-	-	-	-	2	2


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C209-MA8491/ NUMERICAL METHODS												
C209.1	3	3	-	2	2	-	-	-	-	-	-	2
C209.2	3	2	-	2	2	-	-	-	-	-	-	2
C209.3	3	3	-	3	2	-	-	-	-	-	-	2
C209.4	3	2	2	-	-	-	-	-	-	-	-	2
C209.5	3	2	2	-	-	-	-	-	-	-	-	2
C209.6	2	2	2	-	-	-	-	-	-	-	-	2
C210-EE8401/ ELECTRICAL MACHINES - II												
C210.1	2	3	3	2	2	-	2	-	-	-	3	-
C210.2	2	2	3	2	2	3	-	2	-	3	2	2
C210.3	2	2	2	2	2	-	-	-	2	-	2	-
C210.4	3	3	2	2	3	-	3	-	-	-	2	2
C210.5	3	3	3	2	2	-	-	-	3	-	2	-
C210.6	2	2	3	2	3	-	-	-	-	2	2	2
C211-EE8402/ TRANSMISSION AND DISTRIBUTION												
C211.1	2	2	2	2	2	-	-	3	-	-	3	-
C211.2	3	2	3	2	2	-	-	-	-	-	2	-
C211.3	3	2	2	2	2	-	-	-	-	-	2	2
C211.4	3	3	2	2	3	2	-	-	2	-	2	-
C211.5	3	3	3	2	2	-	-	3	-	-	2	3
C212- EE8403/ MEASUREMENTS AND INSTRUMENTATION												
C212.1	3	3	2	2	2	-	-	-	-	-	-	3
C212.2	3	3	3	3	3	-	-	-	-	-	-	3
C212.3	3	2	3	2	3	-	-	-	-	-	-	2
C212.4	3	3	2	2	2	-	-	-	-	-	-	2
C212.5	3	3	2	2	3	-	-	-	-	-	-	3
C212.6	3	2	2	2	3	-	-	-	-	-	-	3
C213- EE8451/LINEAR INTEGRATED CIRCUITS AND APPLICATIONS												
C213.1	3	-	2	-	-	-	-	-	-	-	2	2


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C213.2	3	-	2	-	-	-	-	-	2	-	2	2
C213.3	3	2	2	2	-	-	2	-	2	-	2	2
C213.4	3	2	2	2	-	-	2	-	2	-	2	2
C213.5	3	-	2	2	-	-	2	-	2	-	2	2
C213.6	3	-	2	2	-	2	2	-	2	-	2	2
C214- IC8451/CONTROL SYSTEMS												
C214.1	3	3	2	2	-	-	-	-	-	-	-	2
C214.2	3	3	3	2	-	-	-	-	-	-	-	2
C214.3	3	3	3	2	-	-	-	-	-	-	-	2
C214.4	3	3	2	2	-	-	-	-	-	-	-	2
C214.5	3	3	3	2	-	-	-	-	-	-	-	2
C214.6	3	3	3	2	-	-	-	-	-	-	-	2
C215-EE8411/ELECTRICAL MACHINES LABORATORY - II												
C215.1	3	3	3	2	2	-	-	-	-	-	3	-
C215.2	3	2	3	2	2	-	-	-	-	-	2	-
C215.3	3	2	2	2	2	-	-	-	-	-	2	-
C215.4	3	3	2	2	3	-	-	-	-	-	2	-
C215.5	3	3	3	2	2	-	-	-	-	-	2	-
C215.6	2	2	3	2	3	-	-	-	-	-	2	-
C216- EE8461/LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY												
C216.1	3	3	-	-	-	2	-	-	-	-	2	2
C216.2	3	3	-	-	-	2	-	-	-	-	2	2
C216.3	3	2	-	-	-	2	-	-	-	-	2	2
C216.4	3	2	-	-	-	2	-	-	-	-	2	2
C216.5	3	2	-	-	-	2	-	-	-	-	2	2
C216.6	3	2	-	-	-	2	-	-	-	-	2	2
C301- EE8412/TECHNICAL SEMINAR												
C217.1	3	2	3	-	-	-	-	-	3	2	2	2
C217.2	3	2	2	-	-	-	-	-	3	2	2	3


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C217.3	3	3	2	-	-	-	-	-	3	2	2	3
C217.4	3	2	2	-	-	-	-	-	3	2	2	2
C217.5	3	3	2	-	-	-	-	-	3	2	2	3
C301- EE8501/POWER SYSTEM ANALYSIS												
C301.1	3	2	2	2	-	2	-	-	-	2	-	2
C301.2	3	3	2	2	-	2	-	-	-	2	-	2
C301.3	3	2	3	2	-	2	-	-	-	2	-	2
C301.4	3	2	2	2	-	2	-	-	-	2	-	2
C301.5	3	2	3	2	-	2	-	-	-	2	-	2
C301.6	3	2	2	2	-	2	-	-	-	2	-	2
C302- EE8551/ MICROPROCESSORS AND MICROCONTROLLERS												
C302.1	3	3	2	2	2	-	-	-	-	-	-	3
C302.2	3	3	3	3	3	-	-	-	-	-	-	3
C302.3	3	2	3	2	3	-	-	-	-	-	-	2
C302.4	3	3	2	2	2	-	-	-	-	-	-	2
C302.5	3	3	2	2	3	-	-	-	-	-	-	3
C302.6	3	2	2	2	3	-	-	-	-	-	-	3
C303- EE8552/POWER ELECTRONICS												
C303.1	3	2	2	2	-	-	-	-	-	2	2	2
C303.2	3	2	2	2	-	-	-	-	-	2	2	2
C303.3	3	2	2	2	-	-	-	-	-	2	2	2
C303.4	3	2	2	2	-	-	-	-	-	2	2	2
C303.5	3	2	2	2	-	-	-	-	-	2	2	2
C303.6	3	2	2	2	-	-	-	-	-	2	2	2
C304-EE8591/DIGITAL SIGNAL PROCESSING												
C304.1	3	2	2	-	1	-	-	-	-	-	-	1
C304.2	3	2	2	-	1	-	-	-	-	-	-	1
C304.3	3	2	2	-	1	-	-	-	-	-	-	1
C304.4	3	2	2	-	1	-	-	-	-	-	-	1


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C304.5	3	2	2	-	1	-	-	-	-	-	-	1
C304.6	3	2	2	-	1	-	-	-	-	-	-	1
C305- CS8392/ OBJECT ORIENTED PROGRAMMING												
C305.1	3	2	2	-	-	-	-	-	-	-	-	2
C305.2	2	2	2	-	-	-	-	-	-	-	-	2
C305.3	2	2	2	-	-	-	-	-	-	-	-	-
C305.4	3	3	-	-	-	-	-	-	-	-	-	3
C305.5	2	3	-	-	-	-	-	-	-	-	-	3
C305.6	2	-	2	-	-	-	-	-	-	-	-	2
C306- OCE551/AIR POLLUTION AND CONTROL ENGINEERING												
C306.1	3	3	2	2	-	-	-	-	-	-	-	2
C306.2	3	3	3	2	-	-	-	-	-	-	-	2
C306.3	3	3	3	2	-	-	-	-	-	-	-	2
C306.4	3	3	2	2	-	-	-	-	-	-	-	2
C306.5	3	3	3	2	-	-	-	-	-	-	-	2
C306.6	3	3	3	2	-	-	-	-	-	-	-	2
C307- EE8511/ CONTROL AND INSTRUMENTATION LABORATORY												
C307.1	3	3	3	-	2	2	-	2	2	-	-	2
C307.2	3	2	3	-	2	-	-	-	-	-	-	3
C307.3	3	2	2	-	2	-	-	-	-	2	-	2
C307.4	3	3	2	-	3	-	2	-	-	-	-	3
C307.5	3	3	3	2	2	-	-	-	-	-	2	2
C307.6	2	2	3	-	3	-	-	2	-	-	-	2
C308- HS8581/ PROFESSIONAL COMMUNICATION												
C308.1	3	2	3	-	-	-	-	-	3	2	2	2
C308.2	3	2	2	-	-	-	-	-	3	2	2	3
C308.3	3	3	2	-	-	-	-	-	3	2	2	3
C308.4	3	2	2	-	-	-	-	-	3	2	2	2
C308.5	3	3	2	-	-	-	-	-	3	2	2	3


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C309- CS8383/ OBJECT ORIENTED PROGRAMMING LABORATORY												
C309.1	3	2	2	-	-	-	-	-	-	-	-	2
C309.2	2	2	2	-	-	-	-	-	-	-	-	2
C309.3	2	2	2	-	-	-	-	-	-	-	-	2
C309.4	3	3	3	-	-	-	-	-	-	-	-	3
C309.5	2	3	3	-	-	-	-	-	-	-	-	3
C310-EE8601/SOLID STATE DRIVES												
C310.1	3	2	2	2	-	-	-	-	-	2	2	2
C310.2	3	2	2	2	-	-	-	-	-	2	2	2
C310.3	3	2	2	2	-	-	-	-	-	2	2	2
C310.4	3	2	2	2	-	-	-	-	-	2	2	2
C310.5	3	2	2	2	-	-	-	-	-	2	2	2
C310.6	3	2	2	2	-	-	-	-	-	2	2	2
C311-EE8602/ PROTECTION AND SWITCH GEAR												
C311.1	3	2	2	2	-	2	-	-	-	2	-	2
C311.2	3	3	2	2	-	2	-	-	-	2	-	2
C311.3	3	2	3	2	-	2	-	-	-	2	-	2
C311.4	3	2	2	2	-	2	-	-	-	2	-	2
C311.5	3	2	3	2	-	2	-	-	-	2	-	2
C311.6	3	2	2	2	-	2	-	-	-	2	-	2
C312-EE8691/ EMBEDDED SYSTEMS												
C312.1	3	2	2	2	-	-	-	-	-	2	2	2
C312.2	3	2	2	2	-	-	-	-	-	2	2	2
C312.3	3	2	2	2	-	-	-	-	-	2	2	2
C312.4	3	2	2	2	-	-	-	-	-	2	2	2
C312.5	3	2	2	2	-	-	-	-	-	2	2	2
C312.6	3	2	2	2	-	-	-	-	-	2	2	2


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C313- GE8075/INTELLECTUAL PROPERTY RIGHTS												
C313.1	3	2	3	-	-	-	-	-	3	2	2	2
C313.2	3	2	2	-	-	-	-	-	3	2	2	3
C313.3	3	3	2	-	-	-	-	-	3	2	2	3
C313.4	3	2	2	-	-	-	-	-	3	2	2	2
C313.5	3	3	2	-	-	-	-	-	3	2	2	3
C313.6	3	3	2	-	-	-	-	-	-	-	-	2
C314- EI8073/BIOMEDICAL INSTRUMENTATION												
C314.1	3	2	2	-	-	-	-	-	-	-	-	2
C314.2	2	2	2	-	-	-	-	-	-	-	-	2
C314.3	2	2	2	-	-	-	-	-	-	-	-	2
C314.4	3	3	3	-	-	-	-	-	-	-	-	3
C314.5	2	3	3	-	-	-	-	-	-	-	-	3
C314.6	2	2	2	-	-	-	-	2	-	2	-	-
C315- EE8661/POWER ELECTRONICS AND DRIVES LABORATORY												
C315.1	3	3	3	2	-	-	-	2	-	-	3	2
C315.2	3	2	3	2	-	-	-	2	-	-	2	2
C315.3	3	2	2	2	-	-	-	2	-	-	2	2
C315.4	3	3	2	2	-	-	-	2	-	-	2	2
C315.5	3	3	3	2	-	-	-	2	-	-	2	2
C315.6	3	3	3	2	-	-	-	2	-	-	2	2
C316- EE8681/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY												
C316.1	3	3	2	2	2	-	-	-	-	-	-	3
C316.2	3	3	3	3	3	-	-	-	-	-	-	3
C316.3	3	2	3	2	3	-	-	-	-	-	-	2
C316.4	3	3	2	2	2	-	-	-	-	-	-	2
C316.5	3	3	2	2	3	-	-	-	-	-	-	3
C316.6	3	2	2	2	3	-	-	-	-	-	-	3


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C317- MINI PROJECT												
C317.1	3	2	3	-	-	-	-	-	3	2	2	2
C317.2	3	2	2	-	-	-	-	-	3	2	2	3
C317.3	3	3	2	-	-	-	-	-	3	2	2	3
C317.4	3	2	2	-	-	-	-	-	3	2	2	2
C317.5	3	3	2	-	-	-	-	-	3	2	2	3
C317.6	3	2	2	-	-	-	-	-	3	2	2	2
401-EE8701/HIGH VOLTAGE ENGINEERING												
C401.1	3	3	3	2	2	2	-	-	-	-	3	-
C401.2	3	2	3	2	2	-	3	-	2	-	2	-
C401.3	3	2	2	2	2	3	-	-	-	3	2	-
C401.4	3	3	2	2	3	-	2	-	-	-	2	-
C401.5	3	3	3	2	2	-	-	3	-	2	2	-
C401.6	2	2	3	2	3	-	-	-	-	-	2	-
C402-EE8702/ POWER SYSTEM OPERATION AND CONTROL												
C402.1	3	3	3	2	2	-	-	-	-	-	3	-
C402.2	3	2	3	2	2	-	-	-	-	-	2	-
C402.3	3	2	2	2	2	-	-	-	-	-	2	-
C402.4	3	3	2	2	3	-	-	-	-	-	2	-
C402.5	3	3	3	2	2	-	-	-	-	-	2	-
C402.6	2	2	3	2	3	-	-	-	-	-	2	-
C403-EE8703/RENEWABLE ENERGY SYSTEMS												
C403.1	2	2	-	-	-	2	2	-	-	-	-	2
C403.2	2	3	-	-	-	2	2	2	-	-	-	2
C403.3	2	3	-	-	-	2	2	2	-	-	2	2
C403.4	2	3	2	-	-	2	2	2	-	-	2	2
C403.5	2	3	2	-	-	2	2	3	-	-	2	2
C403.6	2	3	-	-	-	2	2	2	-	-	2	2


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C404- EE8005/SPECIAL ELECTRICAL MACHINES												
C404.1	3	3	3	2	2	-	-	-	-	-	3	-
C404.2	3	2	3	2	2	-	-	-	-	-	2	-
C404.3	3	2	2	2	2	-	-	-	-	-	2	-
C404.4	3	3	2	2	3	-	-	-	-	-	2	-
C404.5	3	3	3	2	2	-	-	-	-	-	2	-
C404.6	2	2	3	2	3	-	-	-	-	-	2	-
C405- EE8015/ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION												
C405.1	2	2	-	-	-	2	2	-	-	-	-	2
C405.2	2	3	-	-	-	2	2	2	-	-	-	2
C405.3	2	3	-	-	-	2	-	2	-	-	2	-
C405.4	2	3	2	-	-	2	-	2	-	-	-	2
C405.5	2	3	2	-	-	2	-	3	-	-	-	-
C405.6	2	3	-	-	-	2	-	2	-	-	2	2
C406- OBT751 ANALYTICAL METHODS AND INSTRUMENTATION												
C406.1	3	2	3	-	-	-	-	-	3	2	2	2
C406.2	3	2	2	-	-	-	-	-	3	2	2	3
C406.3	3	3	2	-	-	-	-	-	3	2	2	3
C406.4	3	2	2	-	-	-	-	-	3	2	2	2
C406.5	3	3	2	-	-	-	-	-	3	2	2	3
C406.6	3	2	2	-	-	-	-	-	3	2	2	2
C407- EE8711/POWER SYSTEM SIMULATION LABORATORY												
C407.1	3	3	3	2	2	-	-	-	-	-	3	3
C407.2	3	2	3	2	2	-	-	-	-	-	2	3
C407.3	3	2	2	2	2	-	-	-	-	-	2	2
C407.4	3	3	2	2	3	-	-	-	-	-	2	2
C407.5	3	3	3	2	2	-	-	-	-	-	2	3
C407.6	2	2	3	2	3	-	-	-	-	-	2	3


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C408- EE8712/RENEWABLE ENERGY SYSTEMS LABORATORY												
C408.1	3	3	3	2	-	-	-	-	-	-	3	2
C408.2	3	2	3	2	-	-	-	-	-	-	2	2
C408.3	3	2	2	2	-	-	-	-	-	-	3	-
C408.4	3	3	2	2	-	-	-	2	-	-	-	-
C408.5	3	3	3	2	-	-	-	2	-	-	-	2
C408.6	3	3	3	2	-	-	-	2	-	-	2	2
C409- GE8074/HUMAN RIGHTS												
C409.1	3	2	3	-	-	-	-	-	3	2	2	2
C409.2	3	2	2	-	-	-	-	-	3	2	2	3
C409.3	3	-	-	-	-	-	-	-	3	2	2	3
C409.4	3	2	-	-	-	-	-	-	3	2	2	2
C409.5	3	3	-	-	-	-	-	-	3	2	2	3
C409.6	2	2	2	-	-	-	-	2	2	2	-	-
C410- EE8010/POWER SYSTEM TRANSIENTS												
C410.1	3	2	3	2	-	-	-	-	-	-	3	-
C410.2	3	2	3	2	-	-	-	-	-	-	2	2
C410.3	2	2	2	2	-	-	-	-	-	-	-	-
C410.4	3	2	2	-	-	-	-	2	-	-	-	2
C410.5	3	3	3	-	-	-	-	2	-	-	-	2
C410.6	2	3	-	-	-	2	2	2	-	-	2	2
C411- EE8811 / PROJECT WORK												
C411.1	3	3	3	2	3	3	2	-	2	2	2	2
C411.2	3	2	3	2	3	2	2	-	2	-	2	2
C411.3	2	3	2	2	3	2	2	2	2	2	-	2
C411.4	2	2	2	2	2	2	-	-	-	-	-	2
C411.5	3	3	2	2	2	2	2	-	2	-	-	2


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REGULATION – 2017 - PG

M.E POWER ELECTRONICS AND DRIVES

S.No	COURSE OUTCOME	BT LEVEL
SEMESTER I		
C101-MA5155/APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERS		
C101.1	Ability to apply the concepts of Linear programming in Electrical Engineering problems.	K3
C101.2	Ability to achieve an understanding of the basic concepts of one dimensional random variables and apply in electrical engineering problems.	K3
C101.3	Ability to familiarize the students in calculus of variations and solve problems using Fourier transforms associated with engineering applications.	K2
C101.4	Ability to understand the matrix theory in electrical engineering problems.	K2
C101.5	Ability to apply the concept of Fourier series in electrical engineering problems.	K3
C101.6	Ability to analyze the power spectrum in electrical engineering problems.	K4
C102-PX5101/POWER SEMICONDUCTOR DEVICES		
C102.1	Able to improve power semiconductor device structures for adjustable speed motor control applications.	K3
C102.2	Able to understand the static and dynamic characteristics of current controlled power semiconductor devices	K2
C102.3	Able to understand the static and dynamic characteristics of voltage controlled power semiconductor devices	K2
C102.4	Enable the students for the selection of devices for different power electronics applications	K3
C102.5	Able to understand the control and firing circuit for different devices.	K2
C102.6	Able to understand the thermal protection in power semiconductor devices.	K2
C103-PX5151/ANALYSIS OF ELECTRICAL MACHINES		
C103.1	Ability to have knowledge about the fundamentals of magnetic circuits, energy, force and torque of multi-excited systems.	K2
C103.2	Ability to analyze the steady state and dynamic state operation of DC machine through mathematical modeling and simulation in digital computer.	K4


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C103.3	Ability to understand the theory of transformation of three phase variables to two phase variables.	K2
C103.4	Ability to analyze the steady state and dynamic state operation of three-phase induction machines using transformation theory based mathematical modeling.	K4
C103.5	Ability to analyze the steady state and dynamic state operation of three-phase synchronous machines using transformation theory based mathematical modeling	K4
C103.6	Ability to apply digital computer simulation for PMSM and D.C shunt motor.	K3
C104-PX5152/ANALYSIS AND DESIGN OF POWER CONVERTERS		
C104.1	Able to understand the electrical circuit concepts behind the different working modes of power converters so as to enable deep understanding of their operation.	K2
C104.2	Able to acquire skills to derive the criteria for the design of power converters starting from basic fundamentals.	K3
C104.3	Able to analyze and comprehend the various operating modes of different configurations of power converters.	K4
C104.4	Able to design different power converters namely AC to DC, DC to DC and AC to AC converters.	K3
C104.5	Ability to analyze the voltage controllers with R and R-L loads.	K4
C104.6	Able to understand the difference between single phase and three phase cyclo converters.	K2
C105-IN5152/SYSTEM THEORY		
C105.1	Able to understand the fundamentals of physical systems in terms of its linear and nonlinear models.	K2
C105.2	Able to find solution on representing systems in state variable form.	K3
C105.3	Able to analysis on solving linear and non-linear state equations.	K3
C105.4	Able to estimate the properties of linear systems such as controllability and observability.	K3
C105.5	Able to study the stability analysis of systems using Lyapunov's theory.	K2
C105.6	Able to understand the model concepts and design of state and output feedback controllers and estimators.	K2
C106-IN5091/SOFT COMPUTING TECHNIQUES		
C106.1	Able to expose the concepts of feed forward neural networks.	K3

C106.2	Able to provide adequate knowledge about feedback neural networks.	K2
C106.3	Able to teach about the concept of fuzziness involved in various systems.	K3
C106.4	Able to expose the ideas about genetic algorithm.	K3
C106.5	Able to provide adequate knowledge about of FLC and NN toolbox.	K2
C106.6	Able to implement fuzzy logic controller in stability analysis.	K3
C107-PX5111/POWER ELECTRONICS CIRCUITS LABORATORY		
C107.1	Able to familiar with the digital tools used in generation of gate pulses for the power electronic switches.	K2
C107.2	Able to implementing analog interfacing as well as control circuits used in a closed-loop control for power electronic system.	K3
C107.3	Able to acquire knowledge on mathematical modeling of power electronic circuits and implementing the same using simulation tools.	K3
C107.4	Able to design and fabricate a power converter circuits at appreciable voltage/power levels.	K3
C107.5	Able to develop skills on PCB design and fabrication.	K3
C107.6	Able to get an insight on the switching behaviours of power electronic switches.	K2
SEMESTER II		
C108- PX5201/ANALYSIS AND DESIGN OF INVERTERS		
C108.1	Able to understand the concepts behind the different working modes of inverters so as to enable deep understanding of their operation.	K2
C108.2	Able to acquire skills to derive the criteria for the design of power converters for UPS, Drives etc.,	K3
C108.3	Able to analyze and comprehend the various operating modes of different configurations of power converters.	K4
C108.4	Able to design different single phase and three phase inverters.	K3
C108.5	Able to understand series and parallel resonant inverters.	K2
C108.6	Able to analyze PWM techniques for MLI.	K4

C109- PX5202/SOLID STATE DRIVES		
C109.1	Able to understand various operating regions of the induction motor drives.	K2
C109.2	Able to study and analyze the operation of VSI & CSI fed induction motor control.	K4
C109.3	Able to understand the speed control of induction motor drive from the rotor side.	K2
C109.4	Able to understand the field oriented control of induction machine.	K2
C109.5	Able to understand the control of synchronous motor drives.	K2
C109.6	Able to apply DTC control strategy in three phase induction motor.	K3
C110- PX5251/SPECIAL ELECTRICAL MACHINES		
C110.1	Able to review the fundamental concepts of permanent magnets and the operation of permanent magnet brushless DC motors.	K2
C110.2	Able to introduce the concepts of permanent magnet brushless synchronous motors and synchronous reluctance motors.	K2
C110.3	Able to develop the control methods and operating principles of switched reluctance motors.	K3
C110.4	Able to introduce the concepts of stepper motors and its applications.	K2
C110.5	Able to understand the basic concepts of other special machines.	K2
C110.6	Able to understand the torque speed characteristics of synchronous reluctance motor.	K2
C111-PX5252/POWER QUALITY		
C111.1	Able to understand the various power quality issues.	K2
C111.2	Able to understand the concept of power and power factor in single phase and three phase systems supplying non linear loads	K2
C111.3	Able to understand the conventional compensation techniques used for power factor correction and load voltage regulation.	K2
C111.4	Able to understand the active compensation techniques used for power factor correction.	K2
C111.5	Able to understand the active compensation techniques used for load voltage regulation.	K2

C111.6	Able to realize and control of DSTATCOM in voltage control.	K3
C112-PX5003/FLEXIBLE AC TRANSMISSION SYSTEMS		
C112.1	Able to expose the concepts of feed forward neural networks.	K2
C112.2	Able to provide adequate knowledge about feedback neural networks.	K2
C112.3	Able to teach about the concept of fuzziness involved in various systems.	K2
C112.4	Able to expose the ideas about genetic algorithm.	K2
C112.5	Able to provide adequate knowledge about of FLC and NN toolbox.	K2
C112.6	Able to implement fuzzy logic controller in stability analysis.	K3
C113-PS5071/DISTRIBUTED GENERATION AND MICROGRID		
C113.1	Able to illustrate the concept of distributed generation.	K3
C113.2	Able to analyze the impact of grid integration.	K4
C113.3	Able to understand the concept of Micro grid and its configuration.	K2
C113.4	Able to know the power electronics interfaces in DC and AC microgrids.	K2
C113.5	Able to study the power quality issues in micogrids.	K2
C113.6	Able to find non conventional energy resources.	K3
C114-PX5211/ELECTRICAL DRIVES LABORATORY		
C114.1	Able to design and analyze the various DC and AC drives.	K3
C114.2	Able to generate the firing pulses for converters and inverters using digital processors.	K3
C114.3	Able to design of controllers for linear and nonlinear systems.	K3
C114.4	Able to implement of closed loop system using hardware simulation.	K3
C114.5	Able to design Cyclo-converter fed Induction motor drives.	K3
C114.6	Able to design Single phase Multi Level Inverter based induction motor drive.	K3

C115-PX5212/MINI PROJECT		
C115.1	Able to solve a specific problem right from its identification and literature review till the successful solution of the same.	K3
C115.2	Able to acquire practical knowledge within the chosen area of technology for project development.	K3
C115.3	Able to Identify, analyze, formulate and handle programming projects with a comprehensive and systematic approach.	K3
C115.4	Able to contribute as an individual or in a team in development of technical projects.	K3
C115.5	Able to develop effective communication skills for presentation of project related activities.	K3
C115.6	Able to prepare a project reports and to face reviews and viva voce examination.	K3
SEMESTER III		
C201-PS5092/SOLAR AND ENERGY STORAGE SYSTEMS		
C201.1	Able to know the characteristics of sunlight and their properties.	K2
C201.2	Able to Study about solar modules and PV system design and their applications.	K2
C201.3	Able to Deal with grid connected PV systems.	K2
C201.4	Able to discuss about different energy storage systems.	K2
C201.5	Able to find out the applications in water pumping, battery chargers and other solar cars etc.,	K3
C201.6	Able to know the international PV programs.	K2
C202- PX5071/WIND ENERGY CONVERSION SYSTEMS		
C202.1	Able to learn the design and control principles of Wind turbine.	K2
C202.2	Able to understand the concepts of fixed speed and variable speed, wind energy conversion systems.	K2
C202.3	Able to analyze the grid integration issues.	K4
C202.4	Able to understand the concept of variable speed systems.	K2
C202.5	Able to know grid connected systems.	K2
C202.6	Able to analyze the steady state and dynamic performance of power system.	K4

C203-PX5072/POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS		
C203.1	Able to Provide knowledge about the stand alone and grid connected renewable energy systems.	K2
C203.2	Able to equip with required skills to derive the criteria for the design of power converters for renewable energy applications.	K3
C203.3	Able to analyze and comprehend the various operating modes of wind electrical generators and solar energy systems.	K4
C203.4	Able to design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems.	K3
C203.5	Able to develop maximum power point tracking algorithms.	K3
C203.6	Able to analyze the grid integrated PMSG and SCIG based WECS.	K4

CO-PO MAPPING												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101- MA5155/APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERS												
C101.1	2	-	-	-	-	2	2	-	2	3	-	2
C101.2	2	-	-	-	-	2	2	-	2	3	-	2
C101.3	3	-	-	-	-	3	2	-	2	3	-	2
C101.4	3	-	-	-	-	3	2	-	2	3	-	2
C101.5	2	-	-	-	-	2	3	-	2	3	-	2
C101.6	2	-	-	-	-	2	3	-	2	3	-	2
C102- PX5101/POWER SEMICONDUCTOR DEVICES												
C102.1	3	2	2	2	-	-	-	-	-	2	2	2
C102.2	3	2	2	2	-	-	-	-	-	2	2	2
C102.3	3	2	2	2	-	-	-	-	-	2	2	2
C102.4	3	2	2	2	-	-	-	-	-	2	2	2
C102.5	3	2	2	2	-	-	-	-	-	2	2	2
C102.6	3	2	2	2	-	-	-	-	-	2	2	2


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C103- PX5151/ANALYSIS OF ELECTRICAL MACHINES												
C103.1	3	2	2	2	-	-	-	-	-	2	2	2
C103.2	3	2	2	2	-	-	-	-	-	2	2	2
C103.3	3	2	2	2	-	-	-	-	-	2	2	2
C103.4	3	2	2	2	-	-	-	-	-	2	2	2
C103.5	3	2	2	2	-	-	-	-	-	2	2	2
C103.6	3	2	2	2	-	-	-	-	-	2	2	2
C104- PX5152/ANALYSIS AND DESIGN OF POWER CONVERTERS												
C104.1	3	3	3	2	2	-	-	-	-	-	3	-
C104.2	3	2	3	2	2	-	-	-	-	-	2	-
C104.3	3	2	2	2	2	-	-	-	-	-	2	-
C104.4	3	3	2	2	3	-	-	-	-	-	2	-
C104.5	3	3	3	2	2	-	-	-	-	-	2	-
C104.6	2	2	3	2	3	-	-	-	-	-	2	-
C105-IN5152/SYSTEM THEORY												
C105.1	3	3	3	2	2	2	-	2	2	2	3	-
C105.2	3	2	3	2	2	-	-	-	-	3	2	2
C105.3	3	2	2	2	2	-	-	-	-	2	2	-
C105.4	3	3	2	2	3	-	2	-	-	2	2	-
C105.5	3	3	3	2	2	-	-	-	-	3	2	-
C105.6	2	2	3	2	3	-	-	2	-	2	2	-
C106-IN5091/SOFT COMPUTING TECHNIQUES												
C106.1	3	2	2	2	-	-	-	-	-	2	2	2
C106.2	3	2	2	2	-	-	-	-	-	2	2	2
C106.3	3	2	2	2	-	-	-	-	-	2	2	2
C106.4	3	2	2	2	-	-	-	-	-	2	2	2
C106.5	3	2	2	2	-	-	-	-	-	2	2	2
C106.6	3	2	2	2	-	-	-	-	-	2	2	2


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C107-PX5111/POWER ELECTRONICS CIRCUITS LABORATORY												
C107.1	3	3	3	2	-	-	-	2	-	-	3	2
C107.2	3	2	3	2	-	-	-	2	-	-	2	2
C107.3	3	2	2	2	-	-	-	2	-	-	2	2
C107.4	3	3	2	2	-	-	-	2	-	-	2	2
C107.5	3	3	3	2	-	-	-	2	-	-	2	2
C107.6	3	3	3	2	-	-	-	2	-	-	2	2
C108-PX5201/ANALYSIS AND DESIGN OF INVERTERS												
C108.1	3	3	2	2	2	-	-	-	-	-	-	3
C108.2	3	3	3	3	3	-	-	-	-	-	-	3
C108.3	3	2	3	2	3	-	-	-	-	-	-	2
C108.4	3	3	2	2	2	-	-	-	-	-	-	2
C108.5	3	3	2	2	3	-	-	-	-	-	-	3
C108.6	3	2	2	2	3	-	-	-	-	-	-	3
C109-PX5202/SOLID STATE DRIVES												
C109.1	3	2	3	-	-	-	-	-	3	2	2	2
C109.2	3	2	2	-	-	-	-	-	3	2	2	3
C109.3	3	3	2	-	-	-	-	-	3	2	2	3
C109.4	3	2	2	-	-	-	-	-	3	2	2	2
C109.5	3	3	2	-	-	-	-	-	3	2	2	3
C109.6	3	2	2	-	-	-	-	-	3	2	2	2
C110-PX5251/SPECIAL ELECTRICAL MACHINES												
C110.1	3	3	3	2	2	2	-	-	-	-	3	-
C110.2	3	2	3	2	2	-	3	-	2	-	2	-
C110.3	3	2	2	2	2	3	-	-	-	3	2	-
C110.4	3	3	2	2	3	-	2	-	-	-	2	-
C110.5	3	3	3	2	2	-	-	3	-	2	2	-
C110.6	2	2	3	2	3	-	-	-	-	-	2	-


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C111-PX5252/POWER QUALITY												
C111.1	3	2	2	2	-	2	-	-	-	2	-	2
C111.2	3	3	2	2	-	2	-	-	-	2	-	2
C111.3	3	2	3	2	-	2	-	-	-	2	-	2
C111.4	3	2	2	2	-	2	-	-	-	2	-	2
C111.5	3	2	3	2	-	2	-	-	-	2	-	2
C111.6	3	2	2	2	-	2	-	-	-	2	-	2
C112-PX5003/FLEXIBLE AC TRANSMISSION SYSTEMS												
C112.1	2	2	2	3	-	-	-	-	-	2	2	3
C112.2	3	2	2	3	-	-	-	-	-	2	2	3
C112.3	2	2	2	3	-	-	-	-	-	2	2	3
C112.4	2	2	2	3	-	-	-	-	-	2	2	3
C112.5	3	2	2	3	-	-	-	-	-	2	2	3
C112.6	2	2	2	3	-	-	-	-	-	2	2	3
C113-PS5071/DISTRIBUTED GENERATION AND MICROGRID												
C113.1	2	-	2	-	-	3	-	3	-	2	-	2
C113.2	2	-	2	-	-	3	-	3	-	2	-	2
C113.3	2	-	2	-	-	3	-	3	-	2	-	2
C113.4	2	-	2	-	-	3	-	3	-	2	-	2
C113.5	2	-	2	-	-	3	-	3	-	2	-	2
C113.6	2	-	2	-	-	3	-	3	-	2	-	2
C114-PX5211/ELECTRICAL DRIVES LABORATORY												
C114.1	3	3	3	2	3	3	2	2	2	2	2	2
C114.2	3	2	3	2	3	2	2		2		2	2
C114.3	2	3	2	2	3	2	2	2	2	2	-	-
C114.4	2	2	2	2	2	2	-	-	-	-	-	2
C114.5	3	3	2	2	2	2	2	-	2	-	2	2
C114.6	2	2	2	2	2	2	2	2	2	2	-	2
C115-PX5212/MINI PROJECT												


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C115.1	3	3	3	2	2	2	-	2	2	2	3	-
C115.2	3	2	3	2	2	-	-	-	-	3	2	2
C115.3	3	2	2	2	2	-	-	-	-	2	2	-
C115.4	3	3	2	2	3	-	2	-	-	2	2	-
C115.5	3	3	3	2	2	-	-	-	-	3	2	-
C115.6	3	3	3	-	-	-	-	-	-	3	2	2
C201-PS5092/SOLAR AND ENERGY STORAGE SYSTEMS												
C201.1	3	3	3	2	2	-	-	-	-	-	3	3
C201.2	3	2	3	2	2	-	-	-	-	-	2	3
C201.3	3	2	2	2	2	-	-	-	-	-	2	2
C201.4	3	3	2	2	3	-	-	-	-	-	2	2
C201.5	3	3	3	2	2	-	-	-	-	-	2	3
C201.6	2	2	3	2	3	-	-	-	-	-	2	3
C202-PX5071/WIND ENERGY CONVERSION SYSTEMS												
C202.1	2	-	-	-	-	2	2	-	2	3	-	2
C202.2	2	-	-	-	-	2	2	-	2	3	-	2
C202.3	3	-	-	-	-	3	2	-	2	3	-	2
C202.4	3	-	-	-	-	3	2	-	2	3	-	2
C202.5	2	-	-	-	-	2	3	-	2	3	-	2
C202.6	2	-	-	-	-	2	3	-	2	3	-	2
C203-PX5072/POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS												
C203.1	3	3	2	-	2	2	2	2	-	2	2	2
C203.2	3	2	3	-	2	2	2	2	-	2	2	2
C203.3	2	2	2	-	2	2	2	2	-	2	2	2
C203.4	2	2	2	2	2	2	2	2	-	2	2	2
C203.5	2	2	2	2	2	2	2	2	-	2	2	2
C203.6	2	2	2	2	2	2	2	3	-	2	2	2


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ELECTRONICS AND COMMUNICATION ENGINEERING



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REGULATION – 2017 - UG

S.NO	COURSE OUTCOME	BT LEVEL
SEMESTER III		
C201 / MA8352/LINEAR ALGEBRA AND PARTIAL DIFFERENTIAL EQUATIONS		
C201.1	Analyze Partial Differential Equations in various methods.	K3
C201.2	Solving Fourier Series for different types of functions.	K3
C201.3	Computing the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions	K2
C201.4	Deduce the Gaussian function in Self reciprocal form using Fourier Transforms.	K3
C201.5	Formation of finite difference method in Z-transforms.	K2
C202/ EC8393/FUNDAMENTALS OF DATA STRUCTURES IN C		
C202.1	Do simple programs using basic concepts of C.	K3
C202.2	Design programs with derived data type and files.	K3
C202.3	Solve the problem by applying linear data structures.	K3
C202.4	Finding solutions to various problems using FIFO& LIFO.	K2
C202.5	Sort and search the data by applying various algorithms.	K3
C202.6	Develop applications in C and Solve problems using various linear data structures algorithms.	K3
C203/ EC8351/ELECTRONIC CIRCUITS- I		
C203.1	Acquire knowledge of Working principles, characteristics and applications of BJT and FET	K2
C203.2	Acquire knowledge of Frequency response characteristics of BJT and FET amplifiers	K2
C203.3	Analyze the performance of small signal BJT and FET amplifiers -single stage and multi stage amplifiers	K3
C203.4	Apply the knowledge gained in the design of Electronic circuits	K3
C203.5	Analyze Amplifier frequency response	K2
C203.6	Acquire knowledge Cascade, Cascade configurations	K2
C204/ EC8352/SIGNALS AND SYSTEMS		
C204.1	Categorize the signals based on their properties.	K2
C204.2	Analyze the Continuous Time & Discrete Time systems.	K2


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C204.3	Apply Laplace and Fourier Transform to Analyze Continuous Time signals.	K3
C204.4	Apply Laplace Transform and convolution integral to Analyze Continuous Time LTI systems.	K3
C204.5	Apply Discrete Time Fourier Transform and Z-transform to Analyze Discrete Time LTI signals.	K3
C204.6	Describe the mathematical modelling of DT systems.	K2
C205 / EC8392/DIGITAL ELECTRONICS		
C205.1	Apply the laws of Boolean algebra to simplify circuits and Boolean algebra expressions	K1
C205.2	analyze the different methods used for simplifications of Boolean expressions and digital logic families	K2
C205.3	Design and implement Combinational circuits.	K3
C205.4	Design and implement Sequential circuits	K3
C205.5	Study the various types of memory devices and understand the concept PLD's	K2
C205.6	Design and implement synchronous and asynchronous sequential circuits	K3
C206 / EC8391/CONTROL SYSTEMS ENGINEERING		
C206.1	Analyze various types of feedback amplifiers.	K2
C206.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.	K3
C206.3	Demonstrate the feedback amplifiers using SPICE Tool.	K3
C206.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.	K3
C206.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.	K3
C206.6	Demonstrate the voltage and current time base circuits using SPICE Tool.	K3
C207/ EC8381/FUNDAMENTALS OF DATA STRUCTURES IN C LABORATORY		
C207.1	Do simple programs using basic concepts of C.	K2
C207.2	Design programs with derived data type and files.	K3
C207.3	Solve the problem by applying linear data structures.	K3
C207.4	Finding solutions to various problems using FIFO& LIFO.	K3
C207.5	Sort and search the data by applying various algorithms.	K2
C207.6	Develop applications in C and Solve problems using various linear data structures algorithms.	K3

C208 / EC8361/ANALOG AND DIGITAL CIRCUITS LABORATORY		
C208.1	Design and test BJT/JFET Amplifiers	K2
C208.2	Differentiate cascade and cascade amplifiers	K2
C208.3	Analyze the limitation in bandwidth of single stage and multistage amplifier	K3
C208.4	Simulate and analyze amplifiers circuits using pspice	K3
C208.5	Design and test the combinational digital logic circuits	K3
C208.6	Design and test the sequential digital logic circuits	K3
C209/ HS8381/ INTERPERSONAL SKILLS / LISTENING & SPEAKING		
C209.1	Take international examination such as IELTS and TOEFL	K3
C209.2	Participate in Group Discussion.	K3
C209.3	Successfully answer questions in Interviews.	K3
C209.4	Make effective Presentations.	K2
C209.5	Participate confidently and appropriately in conversations both formal and informal	K2
SEMESTER IV		
C210 / MA8451/PROBABILITY AND RANDOM PROCESSES		
C210.1	The method of analyzing of feedback amplifiers	K2
C210.2	Design LC and RC oscillators and analyze its performance	K3
C210.3	Analyze performance of tuned amplifiers.	K3
C210.4	The concept and working of wave shaping circuits	K2
C210.5	To design and analyze the functions of multivibrators	K3
C210.6	The fundamentals of blocking oscillators and time base generators	K2
C211/ EC8452/ELECTRONIC CIRCUITS II		
C211.1	The method of analyzing of feedback amplifiers	K2
C211.2	Design LC and RC oscillators and analyze its performance	K3
C211.3	Analyze performance of tuned amplifiers.	K2
C211.4	The concept and working of wave shaping circuits	K2
C211.5	To design and analyze the functions of multivibrators	K3
C211.6	The fundamentals of blocking oscillators and time base generators	K2

C212/ EC8491/COMMUNICATION THEORY		
C212.1	Can be able to design different types of AM system	K2
C212.2	Design angle modulated communication systems.	K3
C212.3	Apply the concepts of Random Process to design a Communication systems	K3
C212.4	Analyze the noise performance of AM and FM systems	K3
C212.5	Able to understand various source coding technique	K2
C212.6	Could analyze the different types of receivers.	K2
C213 / EC8451/ELECTROMAGNETIC FIELDS		
C213.1	Analyze field potentials due to static electric fields	K3
C213.2	Explain how materials affect electric fields	K2
C213.3	Analyze field potentials due to static magnetic fields	K3
C213.4	Explain how materials affect magnetic fields.	K2
C213.5	Perform the relation between the fields under time varying Situations	K3
C213.6	Discuss the principles of propagation of uniform plane waves	K2
C214 / EC8453/LINEAR INTEGRATED CIRCUITS		
C214.1	Able to learn the basic building blocks of linear integrated circuits such as op-amps.	K2
C214.2	Design linear and non linear applications of operational amplifiers	K3
C214.3	Design applications using analog multiplier and PLL	K3
C214.4	Design ADC and DAC using operational amplifiers	K3
C214.5	Analyze special function ICs	K2
C214.6	Generate waveforms using operational amplifiers Circuits	K3
C215 / GE8291/ ENVIRONMENTAL SCIENCE AND ENGINEERING		
C215.1	Realize the importance of ecosystems and the importance of biodiversity.	K2
C215.2	Describe about Environmental pollution and their effects.	K2
C215.3	Design the techniques which require optimum use of natural resources in future.	K3
C215.4	Understand that Environmental Pollution / problems cannot be solved by mere laws.	K2
C215.5	Explain importance of women and child education and HIV /AIDS.	K2

C216 / EC8461/CIRCUITS DESIGN AND SIMULATION LABORATORY		
C216.1	Analyze various types of feedback amplifiers.	K2
C216.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.	K3
C216.3	Demonstrate the feedback amplifiers using SPICE Tool.	K3
C216.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.	K3
C216.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.	K3
C216.6	Demonstrate the voltage and current time base circuits using SPICE Tool.	K3
C217 / EC8462/LINEAR INTEGRATED CIRCUITS LABORATORY		
C217.1	Design amplifiers, oscillators, D-A converters using operational amplifiers.	K2
C217.2	Construct and design integrator and differentiator circuit using IC 741	K3
C217.3	Design filters using op-amp and performs an experiment on frequency response.	K3
C217.4	Analyze the working of PLL and describe its application as a frequency multiplier	K3
C217.5	Design DC power supply using ICs.	K3
C217.6	Analyze the performance of filters, multivibrators, A/D converter and analog multiplier using SPICE	K2
SEMESTER V		
C301 / EC8501/DIGITAL COMMUNICATION		
C301.1	Understanding The Principles Of Sampling & Quantization	K2
C301.2	Knowing about The Various Waveform Coding Schemes	K2
C301.3	Learn and analyze The Various Baseband Transmission Schemes	K2
C301.4	Analyzing Digital Modulation Schemes	K3
C301.5	Understanding The Various Band Pass Signalling Schemes	K3
C301.6	Remembering The Fundamentals Of Channel Coding	K1
C302 / EC8553/DISCRETE-TIME SIGNAL PROCESSING		
C302.1	Apply DFT and FFT for the analysis of digital signals & systems.	K3
C302.2	Design an analog to digital IIR filters and its realization.	K2
C302.3	Design of digital FIR filters using the windowing techniques and frequency sampling method and to realize their structures.	K2
C302.4	Characterize finite Word length effect on filters.	K2

C302.5	Implement the Multirate Filters and Apply Adaptive Filters to equalization	K3
C302.6	An understanding of sampling conversion technique in signal processing and its applications.	K2
C303 / EC8552/COMPUTER ARCHITECTURE AND ORGANIZATION		
C303.1	Use various metrics to calculate the performance of a computer system.	K2
C303.2	Identify the addressing mode of instructions and to Determine which hardware blocks and control lines are used for specific instructions.	K2
C303.3	Demonstrate how to add and multiply integers and floating -point numbers using two's complement and IEEE floating point representation.	K3
C303.4	Analyze clock periods, performance, and instruction throughput of single-cycle, multi-cycle, and pipelined implementations of a simple instruction set.	K3
C303.5	Detect pipeline hazards and identify possible solutions to those hazards	K2
C303.6	Show how cache design parameters affect cache hit rate and to Map a virtual address into a physical address	K2
C304/ EC8551/COMMUNICATION NETWORKS		
C304.1	Explain the components requirement of networks and link layer service	K2
C304.2	Classify the Media Access Control Protocols and different Internetworking	K2
C304.3	Demonstrate various types of routing techniques	K2
C304.4	Outline the mechanisms involved in transport layer	K2
C304.5	Experiment with different application layer protocols	K3
C304.6	Analyze various routing algorithms	K2
C305 / GE8077/TOTAL QUALITY MANAGEMENT		
C305.1	Describe the dimensional barrier regarding Quality.	K1
C305.2	Summarize the Total quality principles.	K2
C305.3	Demonstrate the tools utilization for quality improvement.	K2
C305.4	Discover the new decision of principle in real time projects.	K2
C305.5	Analyze the various types of techniques are used to measure quality.	K3
C305.6	Apply the various quality systems in implementation of Total quality management.	K3
C306/ OMD551/BASIC OF BIOMEDICAL INSTRUMENTATION		
C306.1	Analyze and evaluate the effect of different diagnostic and therapeutic methods, their risk potential, physical principles, opportunities and possibilities for	K2

	different medical procedures.	
C306.2	Measure the various electrical signals from human system.	K3
C306.3	Examine biochemical and various physiological information.	K3
C306.4	Describe the working of units which will help to restore normal functioning.	K2
C306.5	Understand the position of biomedical instrumentation in modern Hospital care	K2
C306.6	Construct a system for telemedicine and electrical safety.	K2
C307 / EC8562/DIGITAL SIGNAL PROCESSING LABORATORY		
C307.1	Demonstrate the simulation of DSP systems.	K2
C307.2	Demonstrate the abilities of digital signal processor based DSP systems implementation.	K2
C307.3	Analyze the finite word length effect on DSP systems.	K3
C307.4	Demonstrate the applications of FFT to DSP systems.	K3
C307.5	Analyze the MAC operation using various addressing modes on DSP systems.	K2
C307.6	Apply the adaptive filters for various applications of DSP systems.	K3
C308 / EC8561/COMMUNICATION SYSTEMS LABORATORY		
C308.1	Simulate &validate the various functional modules of a communication system	K3
C308.2	Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes	K2
C308.3	Apply various channel coding schemes &demonstrate their capabilities towards the improvement of the noise performance of communication system	K2
C308.4	Simulation of Convolutional coding scheme	K3
C308.5	Simulation of ASK, FSK and BPSK detection schemes	K3
C308.6	Simulate end-to-end communication Link	K3
C309/ EC8563/COMMUNICATION NETWORKS LABORATORY		
C309.1	Explain the components requirement of networks and link layer service	K2
C309.2	Classify the Media Access Control Protocols and different Internetworking	K2
C309.3	Demonstrate various types of routing techniques	K3
C309.4	Outline the mechanisms involved in transport layer	K2
C309.5	Experiment with different application layer protocols	K3
C309.6	Analyze various routing algorithms	K2


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SEMESTER VI		
C310 / EC8691/MICROPROCESSORS AND MICROCONTROLLERS		
C310.1	Understanding the Architecture of 8086 microprocessor	K2
C310.2	Realizing the design aspects of I/O and Memory Interfacing circuits.	K3
C310.3	Applying the knowledge about Interfacing of microprocessors with supporting chips.	K3
C310.4	Understanding the Architecture of 8051 microcontroller.	K2
C310.5	Apply and design a microcontroller based system	K3
C310.6	Analyze and learn Multiprocessor configurations, Introduction to advanced processors.	K3
C311/ EC8095/VLSI DESIGN		
C311.1	Recollect all concepts of device characteristics of MOS and basic of Digital Electronics.	K1
C311.2	Construct various types of digital circuits in different logic styles.	K1
C311.3	Enumerate the various issues which has to be taken care off while designing a combinational or sequential circuits	K2
C311.4	Link simple logic circuit to complex block of a processor	K3
C311.5	Implementing strategies and basic architecture of leading FPGA and design steps.	K2
C311.6	Familiarized with the steps of fabrication and verification of layout of the circuit.	K2
C312 / EC8652/WIRELESS COMMUNICATION		
C312.1	Explain the Characteristics of fading in wireless channels	K1
C312.2	Describe the fundamentals of Cellular Architecture	K2
C312.3	Use various signaling schemes for wireless communication channels	K2
C312.4	Compare the performance of channel using various propagation models	K2
C312.5	Analyze the various mitigation techniques to address fading and interference in multipath propagation.	K3
C312.6	Design MIMO Systems in fading and nonfading channels	K2
C313/ MG8591/PRINCIPLES OF MANAGEMENT		
C313.1	Identifies the global context for taking managerial organization.	K2
C313.2	Predict the global opportunity that will impact the management of an organization.	K2

C313.3	Prepare the management principles into management practices.	K2
C313.4	Analyze the managerial problem with ethical practice standards.	K3
C313.5	Breakdown the managerial task executed in the variety of circumstances.	K2
C313.6	Identify the most effective Action to take in the specific situation of addressing issues.	K2
C314 / EC8651/TRANSMISSION LINES AND RF SYSTEMS		
C314.1	Explain the characteristics of transmission lines and its losses	K1
C314.2	Write about the standing wave ratio and input impedance in high frequency transmission lines	K2
C314.3	Analyze impedance matching by stubs using smith charts	K3
C314.4	Analyze the characteristics of TE and TM waves	K3
C314.5	Design a RF transceiver system for wireless communication	K2
C314.6	Explain the characteristics of transmission lines and its losses	K1
C315 / EC8004/WIRELESS NETWORKS		
C315.1	Conversant with the latest 3G/4G networks and its architecture	K2
C315.2	Design and implement wireless network environment for any application using latest wireless protocols and standards	K2
C315.3	Ability to select the suitable network depending on the availability and requirement	K1
C315.4	Implement different type of applications for smart phones and mobile devices with latest network strategies	K2
C315.5	Analyze the latest wireless protocols for the problems associated with Wireless Networks.	K3
C315.6	Interpret the latest 4G networks and its architecture.	K2
C316 / EC8681/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY		
C316.1	Understanding the Architecture of 8086 microprocessor	K2
C316.2	Realizing the design aspects of I/O and Memory Interfacing circuits.	K2
C316.3	Applying the knowledge about Interfacing of microprocessors with supporting chips.	K3
C316.4	Understanding the Architecture of 8051 microcontroller.	K2
C316.5	Apply and design a microcontroller based system	K3
C316.1	Analyze and learn Multiprocessor configurations, Introduction to advanced processors.	K2

C317 /EC8661/VLSI Design Laboratory		
C317.1	Recollect all concepts of device characteristics of MOS and basic of Digital Electronics.	K1
C317.2	Construct various types of digital circuits in different logic styles.	K3
C317.3	Enumerate the various issues which has to be taken care off while design a combinational or sequential circuits	K3
C317.4	They can easily link simple logic circuit to complier block of a processor	K3
C317.5	Implementing strategies and basic architecture of leading FPGA and design steps.	K3
C317.6	Familiarized with the steps of fabrication and verification of layout of the circuit.	K1
C318 /EC8611/Technical Seminar		
C318.1	Enrich the communication skills of the student technical topics of interest	K2
C318.2	Familiarize the preparation of content of technical writing	K2
C318.3	Enrich the presentations skills of the student technical topics of interest	K3
C318.4	Participate confidently and appropriately in conversations both formal and informal	K3
C318.5	Participate in technical group discussion.	K3
C318.6	Participate in technical quiz programs	K3
C319 /HS8581/PROFESSIONAL COMMUNICATION		
C319.1	Take international examination such as IELTS and TOEFL	K3
C319.2	Participate in Group Discussion.	K3
C319.3	Successfully answer questions in Interviews.	K2
C319.4	Make effective Presentations.	K2
C319.5	Participate confidently and appropriately in conversations both formal and informal	K3
C319.6	Take international examination such as IELTS and TOEFL	K2
SEMESTER VII		
C401/EC8701/ANTENNAS AND MICROWAVE ENGINEERING		
C401.1	Apply the basic principles and evaluate antenna parameters and link power budgets	K2
C401.2	Design and assess the performance of various antennas	K3

C401.3	Design a microwave system given the application specifications	K3
C401.4	Design a microwave system	K3
C401.5	Design a various antennas	K3
C402/EC8751/OPTICAL COMMUNICATION		
C402.1	Realize basic elements in optical fibers, different modes and configurations.	K1
C402.2	Analyze the transmission characteristics associated with dispersion and polarization techniques.	K3
C402.3	Design optical sources and detectors with their use in optical communication system.	K3
C402.4	Construct fiber optic receiver systems, measurements and coupling techniques.	K3
C402.5	Design optical communication systems and its networks.	K1
C402.6	Analyze Optical power measurement-attenuation measurement-dispersion measurement	K2
C403 / EC8791/EMBEDDED AND REAL TIME SYSTEMS		
C403.1	Describe the architecture and programming of ARM processor	K2
C403.2	Outline the concepts of embedded systems	K2
C403.3	Explain the basic concepts of real time operating system design	K2
C403.4	Differentiate between the general purpose operating system and the real time operating system	K2
C403.5	Explain the concept of design methodologies techniques for embedded system.	K3
C403.6	Model real-time applications using embedded-system concepts	K3
C404 / EC8702/AD HOC AND WIRELESS SENSOR NETWORKS		
C404.1	Know the basics of Ad hoc networks and Wireless Sensor Networks	K2
C404.2	Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement	K3
C404.3	Apply the knowledge to identify appropriate physical and MAC layer protocols	K3
C404.4	Understand the transport layer and security issues possible in Ad hoc and sensor networks	K2
C404.5	Be familiar with the OS used in Wireless Sensor Networks and build basic modules	K2
C404.6	Apply Layer wise attacks in wireless sensor networks	K3

C405 / EC8092/ADVANCED WIRELESS COMMUNICATION		
C404.1	Discuss the cellular system design and technical challenges.	K2
C404.2	Analyze the Mobile radio propagation, fading, diversity concepts and the channel modeling.	K2
C404.3	Analyze the design parameters, link design, smart antenna, beam forming and MIMO systems.	K3
C404.4	Analyze Multiuser Systems, CDMA, WCDMA network planning and OFDM Concepts.	K3
C404.5	Summarize the principles and applications of wireless systems and standards	K2
C404.6	Appreciate the various methods for improving the data rate of wireless communication system	K2
C406/ OIC751/TRANSDUCER ENGINEERING		
C406.1	Concept behind working of measurement systems and different types of sensors and transducers	K1
C406.2	Sensor to measure various physical parameters used in Industry and normal measurement applications	K2
C406.3	Sensor to measure various physical parameters used in Industry and normal measurement applications	K1
C406.4	Working principle of resistive, inductive and capacitive transducers and their applications	K3
C406.5	Understanding of thermocouples, piezoelectric and pyro-electric transducers and their applications	K2
C406.6	Understanding of acoustic, optical sensors and other sensors and their applications.	K2
C407 / EC8711/EMBEDDED LABORATORY		
C407.1	Write programs in ARM for a specific Application	K3
C407.2	Interface memory and Write programs related to memory operations	K3
C407.3	Interface A/D and D/A convertors with ARM system	K3
C407.4	Analyze the performance of interrupt	K2
C407.5	Write programs for interfacing keyboard, display and motor	K3
C407.6	Formulate a mini project using embedded system	K3
C408 / EC8761/ADVANCED COMMUNICATION LABORATORY		
C408.1	Analyze the performance of simple optical link by measurement of losses and Analyzing the mode characteristics of fiber	K2


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C408.2	Analyze the Eye Pattern, Pulse broadening of optical fiber and the impact on BER.	K2
C408.3	Estimate the Wireless Channel Characteristics and Analyze the performance of Wireless Communication System	K3
C408.4	Understand the intricacies in Microwave System design	K2
SEMESTER VIII		
C409 / EC8093/DIGITAL IMAGE PROCESSING		
C409.1	Know and understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D-transforms.	K2
C409.2	Operate on images using the techniques of smoothing, sharpening and enhancement.	K3
C409.3	Understand the restoration concepts and filtering techniques.	K2
C409.4	Learn the basics of segmentation, features extraction, compression and recognition methods for color models.	K2
C409.5	Use various coding techniques for image compression.	K3
C409.6	Analyze various image descriptors and features of image representation techniques.	K2
C410 / EC8094/SATELLITE COMMUNICATION		
C410.1	Analyze the satellite orbits	K2
C410.2	Analyze the earth segment	K2
C410.3	Analyze the satellite Link design	K2
C410.4	Design various satellite applications	K3
C410.5	Analyze the space segment	K2
C411 / EC8811/PROJECT WORK		
C411.1	Demonstrate profound technical knowledge of the project.	K3
C411.2	Identify a real world problem, review literature and suggest its solution.	K3
C411.3	Demonstrate solutions to complex engineering problems utilizing a systems approach	K3
C411.4	Provide solutions to meet the specified needs of the society.	K3
C411.5	Create a system and validate its conformance	K3
C411.6	Perform data analysis, interpret and provide valid conclusions.	K3

CO-PO MAPPING												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C201/MA8352- LINEAR ALGEBRA AND PARTIAL DIFFERENTIAL EQUATIONS												
C201.1	3	2	2	-	-	2	-	-	-	3	-	2
C201.2	2	3	2	-	-	-	-	-	-	-	-	-
C201.3	3	2	2	-	-	-	-	-	-	2	-	-
C201.4	3	2	3	2	2	-	-	2	-	2	-	-
C201.5	3	3	2	2	-	2	-	-	-	-	-	2
C201.6	3	2	2	2	2	2	-	2	-	-	2	2
C202/EC8393- FUNDAMENTALS OF DATA STRUCTURES IN C												
C202.1	3	2	2	2	-	-	-	-	-	2	2	2
C202.2	3	2	2	2	2	-	-	-	-	2	2	2
C202.3	3	2	2	2	-	-	-	-	-	2	2	2
C202.4	3	2	2	2	-	-	-	-	-	2	2	2
C202.5	3	2	2	2	2	-	-	-	-	2	2	2
C202.6	3	2	2	2	3	-	-	-	-	2	2	2
C203/EC8351- ELECTRONIC CIRCUITS- I												
C203.1	3	3	3	2	2	2	-	2	2	2	3	2
C203.2	3	2	3	2	2	-	-	-	-	3	2	2
C203.3	3	2	2	2	2	-	-	-	-	2	2	2
C203.4	3	3	2	2	3	-	2	-	-	2	2	2
C203.5	3	3	3	2	2	-	-	-	-	3	2	2
C203.6	2	2	3	2	3	-	-	2	-	2	2	2
C204/EC8352- SIGNALS AND SYSTEMS												
C204.1	2	2	2	2	-	2	2	2	3	3	3	3
C204.2	2	-	2	2	2	2	-	2	3	3	2	2
C204.3	2	2	2	2	2	2	-	2	2	3	2	2
C204.4	2	-	2	-	2	2	-	2	2	2	2	2
C204.5	2	2	2	2	2	2	-	2	3	3	2	2


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C204.6	2	2	2	2	2	2	-	2	3	3	2	2
C205/EC8392- DIGITAL ELECTRONICS												
C205.1	3	3	3	2	2	-	-	-	-	-	-	2
C205.2	3	3	3	3	3	-	-	-	-	-	-	2
C205.3	3	3	2	3	2	-	-	-	-	-	-	2
C205.4	3	2	2	2	2	-	-	-	-	-	-	2
C205.5	3	2	2	2	3	-	-	-	-	-	-	2
C205.6	3	3	3	3	3	-	-	-	-	-	-	2
C206/EC8391- CONTROL SYSTEMS ENGINEERING												
C206.1	3	-	2	-	-	-	-	-	-	-	2	2
C206.2	3	-	2	-	-	-	-	-	2	-	2	2
C206.3	3	2	2	2	-	-	2	-	2	-	2	2
C206.4	3	2	2	2	-	-	2	-	2	-	2	2
C206.5	3	-	2	2	-	-	2	-	2	-	2	2
C206.6	3	-	2	2	-	2	2	-	2	-	2	2
C207/EC8381- FUNDAMENTALS OF DATA STRUCTURES IN C LABORATORY												
C207.1	3	2	2	3	2	-	-	-	-	-	2	2
C207.2	3	2	2	3	2	-	-	-	-	-	2	2
C207.3	3	2	2	2	2	-	-	-	-	-	2	2
C207.4	3	2	2	2	2	-	-	-	-	-	2	2
C207.5	3	2	2	2	2	-	-	-	-	-	2	2
C207.6	3	2	2	3	3	-	-	-	-	-	2	2
C208/EC8361- ANALOG AND DIGITAL CIRCUITS LABORATORY												
C208.1	3	3	-	-	-	2	-	-	-	-	2	2
C208.2	3	3	-	-	-	2	-	-	-	-	2	2
C208.3	3	2	-	-	-	2	-	-	-	-	2	2
C208.4	3	2	-	-	-	2	-	-	-	-	2	2
C208.5	3	2	-	-	-	2	-	-	-	-	2	2
C208.6	3	2	-	-	-	2	-	-	-	-	2	2


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C209/HS8381- INTERPERSONAL SKILLS/LISTENING & SPEAKING												
C209.1	3	3	-	2	2	-	-	-	-	-	-	2
C209.2	3	2	-	2	2	-	-	-	-	-	-	2
C209.3	3	3	-	3	2	-	-	-	-	-	-	2
C209.4	3	2	2	-	-	-	-	-	-	-	-	2
C209.5	3	2	2	-	-	-	-	-	-	-	-	2
C209.6	2	2	2	-	-	-	-	-	-	-	-	2
C210/MA8451- PROBABILITY AND RANDOM PROCESSES												
C210.1	3	3	2	2	-	-	-	-	-	-	-	2
C210.2	3	3	3	2	-	-	-	-	-	-	-	2
C210.3	3	3	3	2	-	-	-	-	-	-	-	2
C210.4	3	3	2	2	-	-	-	-	-	-	-	2
C210.5	3	3	3	2	-	-	-	-	-	-	-	2
C210.6	3	3	3	2	-	-	-	-	-	-	-	2
C211/EC8452- ELECTRONIC CIRCUITS II												
C211.1	3	2	2	-	-	-	-	-	-	-	-	2
C211.2	2	2	2	-	-	-	-	-	-	-	-	2
C211.3	2	2	2	-	-	-	-	-	-	-	-	-
C211.4	3	3	-	-	-	-	-	-	-	-	-	3
C211.5	2	3	-	-	-	-	-	-	-	-	-	3
C211.6	2	-	2	-	-	-	-	-	-	-	-	2
C212/EC8491- COMMUNICATION THEORY												
C212.1	2	2	2	2	2	-	-	3	-	-	3	-
C212.2	3	2	3	2	2	-	-	-	-	-	2	-
C212.3	3	2	2	2	2	-	-	-	-	-	2	2
C212.4	3	3	2	2	3	2	-	-	2	-	2	-
C212.5	3	3	3	2	2	-	-	3	-	-	2	3
C212.6	2	2	2	2	3	-	-	-	-	2	2	-


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C2013/EC8451- ELECTROMAGNETIC FIELDS												
C213.1	3	2	2	-	2	-	-	-	-	-	-	2
C213.2	3	2	2	-	2	-	-	-	-	-	-	2
C213.3	3	2	2	-	2	-	-	-	-	-	-	2
C213.4	3	2	2	-	2	-	-	-	-	-	-	2
C213.5	3	2	2	-	2	-	-	-	-	-	-	2
C213.6	3	2	2	-	2	-	-	-	-	-	-	2
C214/EC8453- LINEAR INTEGRATED CIRCUITS												
C214.1	3	3	2	2	2	-	-	-	-	-	-	3
C214.2	3	3	3	3	3	-	-	-	-	-	-	3
C214.3	3	2	3	2	3	-	-	-	-	-	-	2
C214.4	3	3	2	2	2	-	-	-	-	-	-	2
C214.5	3	3	2	2	3	-	-	-	-	-	-	3
C214.6	3	2	2	2	3	-	-	-	-	-	-	3
C215/GE8291- ENVIRONMENTAL SCIENCE AND ENGINEERING												
C215.1	3	2	2	-	-	-	-	-	-	-	-	2
C215.2	2	2	2	-	-	-	-	-	-	-	-	2
C215.3	2	2	2	-	-	-	-	-	-	-	-	2
C215.4	3	3	3	-	-	-	-	-	-	-	-	3
C215.5	2	3	3	-	-	-	-	-	-	-	-	3
C215.6	2	2	2	-	-	-	-	-	-	-	-	2
C216/EC8461- CIRCUITS DESIGN AND SIMULATION LABORATORY												
C216.1	3	3	3	-	2	2	-	2	2	-	-	2
C216.2	3	2	3	-	2	-	-	-	-	-	-	3
C216.3	3	2	2	-	2	-	-	-	-	2	-	2
C216.4	3	3	2	-	3	-	2	-	-	-	-	3
C216.5	3	3	3	2	2	-	-	-	-	-	2	2
C216.6	2	2	3	-	3	-	-	2	-	-	-	2


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C217/EC8462- LINEAR INTEGRATED CIRCUITS LABORATORY												
C217.1	3	2	2	2	-	2	-	-	-	2	-	2
C217.2	3	3	2	2	-	2	-	-	-	2	-	2
C217.3	3	2	3	2	-	2	-	-	-	2	-	2
C217.4	3	2	2	2	-	2	-	-	-	2	-	2
C217.5	3	2	3	2	-	2	-	-	-	2	-	2
C217.6	3	2	2	2	-	2	-	-	-	2	-	2
C301 / EC8501/DIGITAL COMMUNICATION												
C301.1	3	3	2	2	2	-	-	-	-	-	-	3
C301.2	3	3	3	3	3	-	-	-	-	-	-	3
C301.3	3	2	3	2	3	-	-	-	-	-	-	2
C301.4	3	3	2	2	2	-	-	-	-	-	-	2
C301.5	3	3	2	2	3	-	-	-	-	-	-	3
C301.6	3	2	2	2	3	-	-	-	-	-	-	3
C302 / EC8553/DISCRETE-TIME SIGNAL PROCESSING												
C302.1	3	2	3	2	2	3	2	3	2	2	2	2
C302.2	3	2	3	2	3	3		3	2			2
C302.3	3	2	3	2	2	2	2	2	2	2	2	
C302.4	3	2	2	2	2	2	2	2		2	2	2
C302.5	3	2	2	2	2	2	2	2	2	2		2
C302.6	3	2	2	2	2	2	2		2	2	2	2
C303 / EC8552/COMPUTER ARCHITECTURE AND ORGANIZATION												
C303.1	3	2	2	2	-	-	-	-	-	2	2	2
C303.2	3	2	2	2	-	-	-	-	-	2	2	2
C303.3	3	2	2	2	-	-	-	-	-	2	2	2
C303.4	3	2	2	2	-	-	-	-	-	2	2	2
C303.5	3	2	2	2	-	-	-	-	-	2	2	2
C303.6	3	2	2	2	-	-	-	-	-	2	2	2


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C304/ EC8551/COMMUNICATION NETWORKS												
C304.1	3	2	2	2	-	-	-	-	-	2	2	2
C304.2	3	2	2	2	-	-	-	-	-	2	2	2
C304.3	3	2	2	2	-	-	-	-	-	2	2	2
C304.4	3	2	2	2	-	-	-	-	-	2	2	2
C304.5	3	2	2	2	-	-	-	-	-	2	2	2
C304.6	3	2	2	2	-	-	-	-	-	2	2	2
C305 / GE8077/TOTAL QUALITY MANAGEMENT												
C305.1	3	3	3	2	3	3	2	-	2	2	2	2
C305.2	3	2	3	2	3	2	2	-	2	-	2	2
C305.3	2	3	2	2	3	2	2	2	2	2	-	2
C305.4	2	2	2	2	2	2	-	-	-	-	-	2
C305.5	3	3	2	2	2	2	2	-	2	-	-	2
C305.6	2	2	2	2	2	2	2	2	2	2	-	2
C306/ OMD551/BASIC OF BIOMEDICAL INSTRUMENTATION												
C306.1	3	2	2	2	-	-	-	-	-	2	2	2
C306.2	3	2	2	2	-	-	-	-	-	2	2	2
C306.3	3	2	2	2	-	-	-	-	-	2	2	2
C306.4	3	2	2	2	-	-	-	-	-	2	2	2
C306.5	3	2	2	2	-	-	-	-	-	2	2	2
C306.6	3	2	2	2	-	-	-	-	-	2	2	2
C307 / EC8562/DIGITAL SIGNAL PROCESSING LABORATORY												
C307.1	3	3	3	-	2	2	-	2	2	-	-	2
C307.2	3	2	3	-	2	-	-	-	-	-	-	3
C307.3	3	2	2	-	2	-	-	-	-	2	-	2
C307.4	3	3	2	-	3	-	2	-	-	-	-	3
C307.5	3	3	3	2	2	-	-	-	-	-	2	2
C307.6	2	2	3	-	3	-	-	2	-	-	-	2


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C308 / EC8561/COMMUNICATION SYSTEMS LABORATORY												
C308.1	3	2	3	-	-	-	-	-	3	2	2	2
C308.2	3	2	2	-	-	-	-	-	3	2	2	3
C308.3	3	3	2	-	-	-	-	-	3	2	2	3
C308.4	3	2	2	-	-	-	-	-	3	2	2	2
C308.5	3	3	2	-	-	-	-	-	3	2	2	3
C308.6	3	2	2	-	-	-	-	-	3	2	2	2
C309/ EC8563/COMMUNICATION NETWORKS LABORATORY												
C309.1	3	3	3	2	-	-	-	2	-	-	3	2
C309.2	3	2	3	2	-	-	-	2	-	-	2	2
C309.3	3	2	2	2	-	-	-	2	-	-	2	2
C309.4	3	3	2	2	-	-	-	2	-	-	2	2
C309.5	3	3	3	2	-	-	-	2	-	-	2	2
C309.6	3	3	3	2	-	-	-	2	-	-	2	2
C310 / EC8691/MICROPROCESSORS AND MICROCONTROLLERS												
C310.1	3	3	2	2	-	-	-	-	-	-	-	2
C310.2	3	3	3	2	-	-	-	-	-	-	-	2
C310.3	3	3	3	2	-	-	-	-	-	-	-	2
C310.4	3	3	2	2	-	-	-	-	-	-	-	2
C310.5	3	3	3	2	-	-	-	-	-	-	-	2
C310.6	3	3	3	2	-	-	-	-	-	-	-	2
C311/ EC8095/VLSI DESIGN												
C311.1	3	3	3	2	2	-	-	-	-	-	3	-
C311.2	3	2	3	2	2	-	-	-	-	-	2	-
C311.3	3	2	2	2	2	-	-	-	-	-	2	-
C311.4	3	3	2	2	3	-	-	-	-	-	2	-
C311.5	3	3	3	2	2	-	-	-	-	-	2	-
C311.6	2	2	3	2	3	-	-	-	-	-	2	-
C312 / EC8652/WIRELESS COMMUNICATION												
C312.1	3	3	2	-	2	2	2	2	-	2	2	2


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C312.2	3	2	3	-	2	2	2	2	-	2	2	2
C312.3	2	2	2	-	2	2	2	2	-	2	2	2
C312.4	2	2	2	2	2	2	2	2	-	2	2	2
C312.5	2	2	2	2	2	2	2	2	-	2	2	2
C312.6	2	2	2	2	2	2	2	3	-	2	2	2
C313/ MG8591/PRINCIPLES OF MANAGEMENT												
C313.1	2	-	-	-	-	2	2	-	2	3	-	2
C313.2	2	-	-	-	-	2	2	-	2	3	-	2
C313.3	3	-	-	-	-	3	2	-	2	3	-	2
C313.4	3	-	-	-	-	3	2	-	2	3	-	2
C313.5	2	-	-	-	-	2	3	-	2	3	-	2
C313.6	2	-	-	-	-	2	3	-	2	3	-	2
C314 / EC8651/TRANSMISSION LINES AND RF SYSTEMS												
C314.1	3	2	2	2	-	-	-	-	-	2	2	2
C314.2	3	2	2	2	-	-	-	-	-	2	2	2
C314.3	3	2	2	2	-	-	-	-	-	2	2	2
C314.4	3	2	2	2	-	-	-	-	-	2	2	2
C314.5	3	2	2	2	-	-	-	-	-	2	2	2
C314.6	3	2	2	2	-	-	-	-	-	2	2	2
C315 / EC8004/WIRELESS NETWORKS												
C315.1	-	-	2	2	-	3	3	3	3	3	2	2
C315.2	-	-	2	2	-	2	3	3	3	3	2	2
C315.3	-	-	3	2	-	3	3	3	3	2	2	2
C315.4	-	-	2	2	-	2	3	3	3	-	2	2
C315.5	-	-	3	2	-	3	3	3	3	-	2	2
C315.6	-	-	2	2	-	2	3	3	3	2	2	2
C316 / EC8681/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY												
C316.1	3	3	3	2	2	-	-	-	-	-	3	-


PRINCIPAL
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C316.2	3	2	3	2	2	-	-	-	-	-	2	-
C316.3	3	2	2	2	2	-	-	-	-	-	2	-
C316.4	3	3	2	2	3	-	-	-	-	-	2	-
C316.5	3	3	3	2	2	-	-	-	-	-	2	-
C316.6	2	2	3	2	3	-	-	-	-	-	2	-
C317 /EC8661/VLSI Design Laboratory												
C317.1	3	3	2	2	2	-	-	-	-	-	-	3
C317.2	3	3	3	3	3	-	-	-	-	-	-	3
C317.3	3	2	3	2	3	-	-	-	-	-	-	2
C317.4	3	3	2	2	2	-	-	-	-	-	-	2
C317.5	3	3	2	2	3	-	-	-	-	-	-	3
C317.6	3	2	2	2	3	-	-	-	-	-	-	3
C318 /EC8611/Technical Seminar												
C318.1	3	3	2	2	3	-	-	-	-	-	-	-
C318.2	3	3	2	2	3	-	-	-	-	-	-	-
C318.3	3	3	2	2	3	-	-	-	-	-	-	-
C318.4	3	3	2	2	3	-	-	-	-	-	-	-
C318.5	3	3	2	2	3	-	-	-	-	-	-	-
C318.6	3	3	2	2	3	-	-	-	-	-	-	-
C319 /HS8581/PROFESSIONAL COMMUNICATION												
C319.1	3	2	3	-	-	-	-	-	3	2	2	2
C319.2	3	2	2	-	-	-	-	-	3	2	2	3
C319.3	3	3	2	-	-	-	-	-	3	2	2	3
C319.4	3	2	2	-	-	-	-	-	3	2	2	2
C319.5	3	3	2	-	-	-	-	-	3	2	2	3
C319.6	3	2	2	-	-	-	-	-	3	2	2	2


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C401/EC8701/ANTENNAS AND MICROWAVE ENGINEERING												
C401.1	3	3	3	2	2	2	-	-	-	-	3	-
C401.2	3	2	3	2	2	-	3	-	2	-	2	-
C401.3	3	2	2	2	2	3	-	-	-	3	2	-
C401.4	3	3	2	2	3	-	2	-	-	-	2	-
C401.5	3	3	3	2	2	-	-	3	-	2	2	-
C401.6	2	2	3	2	3	-	-	-	-	-	2	-
C402/EC8751/OPTICAL COMMUNICATION												
C402.1	3	2	2	2	-	2	-	-	-	2	-	2
C402.2	3	3	2	2	-	2	-	-	-	2	-	2
C402.3	3	2	3	2	-	2	-	-	-	2	-	2
C402.4	3	2	2	2	-	2	-	-	-	2	-	2
C402.5	3	2	3	2	-	2	-	-	-	2	-	2
C402.6	3	2	2	2	-	2	-	-	-	2	-	2
C403 / EC8791/EMBEDDED AND REAL TIME SYSTEMS												
C403.1	2	2	2	3	-	-	-	-	-	2	2	3
C403.2	3	2	2	3	-	-	-	-	-	2	2	3
C403.3	2	2	2	3	-	-	-	-	-	2	2	3
C403.4	2	2	2	3	-	-	-	-	-	2	2	3
C403.5	3	2	2	3	-	-	-	-	-	2	2	3
C403.6	2	2	2	3	-	-	-	-	-	2	2	3
C404 / EC8702/AD HOC AND WIRELESS SENSOR NETWORKS												
C404.1	2	2	-	-	-	2	2	-	-	-	-	2
C404.2	2	3	-	-	-	2	2	2	-	-	-	2
C404.3	2	3	-	-	-	2	2	2	-	-	2	2
C404.4	2	3	2	-	-	2	2	2	-	-	2	2
C404.5	2	3	2	-	-	2	2	3	-	-	2	2
C404.6	2	3	-	-	-	2	2	2	-	-	2	2


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C405 / EC8092/ADVANCED WIRELESS COMMUNICATION												
C405.1	3	3	2	-	2	2	2	2	-	2	2	2
C405.2	3	2	3	-	2	2	2	2	-	2	2	2
C405.3	2	2	2	-	2	2	2	2	-	2	2	2
C405.4	2	2	2	2	2	2	2	2	-	2	2	2
C405.5	2	2	2	2	2	2	2	2	-	2	2	2
C405.6	2	2	2	2	2	2	2	3	-	2	2	2
C406/ OIC751/TRANSDUCER ENGINEERING												
C406.1	3	3	3	2	2	2	-	2	2	2	3	-
C406.2	3	2	3	2	2	-	-	-	-	3	2	2
C406.3	3	2	2	2	2	-	-	-	-	2	2	-
C406.4	3	3	2	2	3	-	2	-	-	2	2	-
C406.5	3	3	3	2	2	-	-	-	-	3	2	-
C407 / EC8711/EMBEDDED LABORATORY												
C407.1	3	3	3	2	2	-	-	-	-	-	3	3
C407.2	3	2	3	2	2	-	-	-	-	-	2	3
C407.3	3	2	2	2	2	-	-	-	-	-	2	2
C407.4	3	3	2	2	3	-	-	-	-	-	2	2
C407.5	3	3	3	2	2	-	-	-	-	-	2	3
C407.6	2	2	3	2	3	-	-	-	-	-	2	3
C408 / EC8761/ADVANCED COMMUNICATION LABORATORY												
C408.1	2	-	-	-	-	2	2	-	2	3	-	2
C408.2	2	-	-	-	-	2	2	-	2	3	-	2
C408.3	3	-	-	-	-	3	2	-	2	3	-	2
C408.4	3	-	-	-	-	3	2	-	2	3	-	2
C408.5	2	-	-	-	-	2	3	-	2	3	-	2
C408.6	2	-	-	-	-	2	3	-	2	3	-	2
C409 / EC8093/DIGITAL IMAGE PROCESSING												
C409.1	2	-	2	-	-	3	-	3	-	2	-	2
C409.2	2	-	2	-	-	3	-	3	-	2	-	2


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C409.3	2	-	2	-	-	3	-	3	-	2	-	2
C409.4	2	-	2	-	-	3	-	3	-	2	-	2
C409.5	2	-	2	-	-	3	-	3	-	2	-	2
C409.6	2	-	2	-	-	3	-	3	-	2	-	2
C410 / EC8094/SATELLITE COMMUNICATION												
C410.1	2	-	2	-	-	3	-	3	-	2	-	2
C410.2	2	-	2	-	-	3	-	3	-	2	-	2
C410.3	2	-	2	-	-	3	-	3	-	2	-	2
C410.4	2	-	2	-	-	3	-	3	-	2	-	2
C410.5	2	-	2	-	-	3	-	3	-	2	-	2
C410.6	2	-	2	-	-	3	-	3	-	2	-	2
C411 /EC8811/PROJECT WORK												
C413.1	3	3	3	2	3	3	2	-	2	2	2	2
C413.2	3	2	3	2	3	2	2	-	2	-	2	2
C413.3	2	3	2	2	3	2	2	2	2	2	-	2
C413.4	2	2	2	2	2	2	-	-	-	-	-	2
C413.5	3	3	2	2	2	2	2	-	2	-	-	2
C413.6	2	2	2	2	2	2	2	2	2	2	-	2

REGULATION - 2017

M.E. - VLSI DESIGN

S.No	COURSE OUTCOME	BT LEVEL
SEMESTER I		
C101/ MA5152/ APPLIED MATHEMATICS FOR ELECTRONICS ENGINEERS		
C101.1	To develop efficient algorithms for solving dynamic programming problems, to acquire skills in handling situation involving random variable.	K2
C101.2	To learn the basics and gained the skill for specialized studies and research.	K1
C101.3	To exposed the basic characteristic features of a queuing system and acquire	K2


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	skills in analyzing queuing models.	
C101.4	To understands the basic principles of fuzzy logic.	K2
C101.5	Using discrete time Markov chains to model computer systems	K2
C102/ AP5151/ADVANCED DIGITAL SYSTEM DESIGN		
C102.1	Analysis and Design of Synchronous and Asynchronous sequential machines	K2
C102.2	Draw a ASM chart for digital designs	K2
C102.3	Detect and diagnosis different faults in digital circuits	K2
C102.4	Have knowledge of PLD"s and architecture of FPGA"s	K2
C102.5	Design the digital systems through VHDL programming.	K3
C103/ VL5101/ CMOS DIGITAL VLSI DESIGN		
C103.1	Carry out transistor level design of the most important building blocks used in digital CMOS VLSI circuits.	K2
C103.2	Discuss design methodology of arithmetic building block	K2
C103.3	Analyze tradeoffs of the various circuit choices for each of the building block	K3
C103.4	Discuss design sequential logic circuits	K2
C103.5	Arithmetic Building Blocks And Memory Architectures	K2
C104/ VL5191/ DSP INTEGRATED CIRCUITS		
C104.1	Implement various signal processing algorithms.	K2
C104.2	Diagnose the design and methodologies in hardware and software design. Identify new developments in Application specific processors	K2
C104.3	Implement various signal processing algorithms.	K3
C104.4	Concept behind multi rate systems is understood	K2
C104.5	Get familiar with the DSP processor architectures and how to perform synthesis of processing	K2
C105 / VL5102 / CAD FOR VLSI CIRCUITS		
C105.1	Design advanced electronics systems	K2
C105.2	Evaluate and analyze the systems in VLSI design environments.	K2
C105.3	Apply advanced technical knowledge in multiple contexts	K3
C105.4	Conduct an organized and systematic study on significant research topic within the field of VLSI and its allied field.	K2

C105.5	Discuss the hardware models for high level synthesis	K2
C106 / VL5103 / ANALOG IC DESIGN		
C106.1	Learn the basics of CMOS and BICMOS circuit techniques.	K2
C106.2	Gain a well founded knowledge on filters and converters.	K2
C106.3	Obtain knowledge on testability and VLSI interconnects.	K2
C106.4	Grasp the concept of statistical modeling and simulation	K2
C106.5	Gain knowledge analog filters and converters	K2
C107 / VL5111 / VLSI DESIGN LABORATORY I		
C107.1	Have knowledge about sequential & combinational digital system designs CO3.Have knowledge of hardware implementation of digital signal processing circuits	K3
C107.2	Perform Transient ,DC analysis and Power analysis of transistor level designs	K2
C107.3	Have knowledge of hardware implementation of digital signal processing circuits	K2
C107.4	Design a microcontroller based systems	K2
C107.5	Analyze Stability, frequency response, and Noise in MOS amplifiers	K3
SEMESTER II		
C108 / VL5201/ TESTING OF VLSI CIRCUITS		
C108.1	Prepare design for testability Discuss test algorithms	K1
C108.2	Explain fault diagnosis	K1
C108.3	Apply the concepts in testing which can help them design a better yield in IC design	K3
C108.4	Understanding of the various fault diagnosis methods in logic systems	K2
C108.5	Discuss algorithms for memory and logic circuits	K2
C109 / VL5291/ VLSI SIGNAL PROCESSING		
C109.1	Ability to modify the existing or new DSP architectures suitable for VLSI.	K1
C109.2	To learn performance optimization techniques in VLSI signal processing,	K2
C109.3	Transformations for high speed and power reduction using pipelining, retiming, parallel processing techniques, supply voltage reduction as well as for strength or capacitance reduction	K3
C109.4	Area reduction using folding techniques, Strategies for arithmetic	K2


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	implementation,	
C109.5	Synchronous, wave, and asynchronous pipelining	K1
C110 / VL5202/ LOW POWER VLSI DESIGN		
C110.1	Understand the concepts of low power design and physics of power dissipation.	K2
C110.2	Develop logical level and circuit level power optimization techniques.	K2
C110.3	Apply advanced techniques and special techniques for reducing power	K3
C110.4	Understanding of the synthesis and software design for low power	K2
C110.5	Knowledge on low power design and power estimation techniques in CMOS	K2
C111 /VL5001 /DEVICE MODELING – I		
C111.1	Know about the basics of MOSFET device modeling and noise modeling.	K2
C111.2	Understand and apply the concepts of noise modeling in system design	K2
C111.3	Apply the mathematical techniques for device simulations	K3
C111.4	Realize concepts about process variation and quality assurance	K2
C111.5	To gain knowledge in arithmetic building blocks and memory architectures	K3
C112/ DS5191/ DSP PROCESSOR ARCHITECTURE AND PROGRAMMING		
C112.1	Become Digital Signal Processor specialized engineer	K2
C112.2	DSP based System Developer	K2
C112.3	Analyze and learn to implement the signal processing algorithms in DSPs.	K3
C112.4	Recognize the fundamentals of fixed and floating point architectures of various DSPs	K2
C112.5	Learn the architecture details and instruction sets of fixed and floating point DSPs	K2
C113 / AP5191 /EMBEDDED SYSTEM DESIGN		
C113.1	Know about various Requirements, Specification and Architectural Design for Embedded system design process.	K2
C113.2	Understand and apply interfacing concepts of SHARC and ARM processors.	K3
C113.3	Realize concepts about various Embedded Network using I2C, CAN Bus and SHARC bus for industry based applications.	K2
C113.4	Apply the programming skills for peripheral interfacing and real time applications..	K3
C113.5	Apply the concepts of RTOS for real-time systems design.	K3
C114/ VL5211 /VLSI DESIGN LABORATORY II		

C114.1	Have knowledge about digital system design and implementation in FPGAs	K1
C114.2	Have analysis knowledge of various parameters by T-SPICE tool	K1
C114.3	Design and implement the Embedded systems. CO4. Have knowledge of layout level design entries	K2
C114.4	Use EDA tools like Cadence, Xilinx and Quartus	K3
C114.5	Ability to design using FPGA/CPLD devices	K3
C115/ CP5281 /TERM PAPER WRITING AND SEMINAR		
C115.1	Read and review the research articles and publish a technical Paper.	K4
C115.2	Acquire practical knowledge within the chosen area of technology for project development	K2
C115.3	Identify, analyze, formulate and handle programming with a comprehensive and systematic approach	K3
C115.4	Generate a high level analysis document based on requirement specification	K3
C115.5	Understand basics and importance of real time system	K2
SEMESTER /III		
C201/VL5301/ANALOG TO DIGITAL INTERFACES		
C201.1	Design Analog to Digital and Digital to Analog data converters based on data precision requirements	K2
C201.2	Calibration techniques for achieving precision during data	K2
C201.3	Digitization and enabling circuit architectures	K3
C201.4	Analyze analog circuits	K3
C201.5	Understand basics and importance of digital interfaces	K2
C202 / AP5292/DIGITAL IMAGE PROCESSING		
C202.1	Discuss image enhancement techniques	K2
C202.2	Explain color image processing	K2
C202.3	Compare image compression schemes	K1
C202.4	Exposure to video processing	K2
C202.5	Exposure to various image processing compression techniques	K2

C203/ VL5091/MEMS AND NEMS		
C203.1	Discuss micro sensors Explain micro actuators	K2
C203.2	Outline nanosystems and Quantum mechanics	K2
C203.3	Fabrication process of Microsystems.	K2
C203.4	Knowledge on electrical and mechanical concepts of MEMS and on various	K2
C203.5	Introduction to optical and MEMS and various case studies	K2
C204/VL5311/PROJECT WORK PHASE-I		
C204.1	Demonstrate a sound technical knowledge of their selected project topic.	K3
C204.2	Undertake problem identification, formulation and solution.	K4
C204.3	Design engineering solutions to complex problems utilising a systems	K4
C204.4	An understanding of technical dissertation presentation and writing.	K3
C204.5	Design engineering solutions to complex problems utilising a systems	K4
SEMESTER IV		
C205/ VL5411/PROJECT WORK PHASE-II		
C205.1	Demonstrate a sound technical knowledge of their selected project topic.	K3
C205.2	Undertake problem identification, formulation and solution.	K4
C205.3	Design engineering solutions to complex problems utilizing a systems approach.	K4
C205.4	Confidence to take up a project independently.	K3
C205.5	An understanding of technical dissertation presentation and writing	K4

S.NO	CO-PO MAPPING											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101/ MA5152/ APPLIED MATHEMATICS FOR ELECTRONICS ENGINEERS												
C101.1	2	-	3	-	-	2	2	-	2	2	-	2
C101.2	-	-	3	-	-	2	2	-	2	2	-	2
C101.3	-	2	3	2	2	2	2	-	2	2	-	2
C101.4	2	2	3	-	-	2	2	-	2	2	-	2
C101.5	-	-	3	-	-	2	2	-	2	2	-	2
C102/ AP5151/ ADVANCED DIGITAL SYSTEM DESIGN												
C102.1	2	2	2	-	-	2	-	-	-	3	-	2
C102.2	2	3	2	-	-	-	-	-	-	-	-	-
C102.3	3	2	2	-	-	-	-	-	-	2	-	-
C102.4	3	2	3	2	2	-	-	2	-	2	-	-


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C102.5	2	2	2	2	-	2	-	-	-	-	-	2
C103/ VL5101/ CMOS DIGITAL VLSI DESIGN												
C103.1	3	2	2	3	2	2	-	-	-	-	-	3
C103.2	3	3	3	2	-	2	-	-	-	-	-	3
C103.3	3	2	-	-	-	-	-	-	-	-	-	3
C103.4	2	3	2	-	-	-	-	-	-	-	-	-
C103.5	3	2	2	-	-	-	-	-	-	2	-	-
C104/ VL5191/ DSP INTEGRATED CIRCUITS												
C104.1	2	2	2	2	2	-	3	-	2	-	2	3
C104.2	2	2	2	2	2	-	-	-	2	-	2	2
C104.3	2	2	2	2	2	-	2	-	2	-	2	2
C104.4	2	2	2	2	2	-	-	-	2	-	2	2
C104.5	2	2	2	2	2	-	2	-	2	-	2	2
C105 / VL5102 / CAD FOR VLSI CIRCUITS												
C105.1	3	2	-	-	-	-	-	-	-	-	-	-
C105.2	3	2	2	-	-	-	-	-	-	-	-	-
C105.3	3	2	2	-	-	-	-	-	-	-	-	-
C105.4	3	2	2	2	2	-	-	-	-	-	-	-
C105.5	3	2	2	2	2	-	-	-	-	-	-	-
C106 / VL5103 / ANALOG IC DESIGN												
C106.1	3	3	3	2	2	-	-	-	-	2	3	2
C106.2	3	3	3	2	2	-	-	-	-	3	2	2
C106.3	3	3	3	2	2	-	-	-	-	2	2	2
C106.4	3	3	3	2	3	-	-	-	-	2	2	2
C106.5	3	3	3	2	3	-	-	-	-	2	2	2
C107 / VL5111 / VLSI DESIGN LABORATORY I												
C107.1	3	-	-	-	-	-	-	-	-	-	-	-
C107.2	3	3	3	2	-	-	-	-	-	-	-	-
C107.3	3	3	3	2	-	-	-	-	-	-	-	-
C107.4	3	2	3	2	-	-	-	-	-	-	-	-
C107.5	3	2	3	2	-	-	-	-	-	-	-	-
C108 / VL5201/ TESTING OF VLSI CIRCUITS												
C108.1	3	2	3	-	-	-	-	-	3	2	2	2
C108.2	3	2	2	-	-	-	-	-	3	2	2	3
C108.3	3	3	2	-	-	-	-	-	3	2	2	3
C108.4	3	3	2	-	-	-	-	-	3	2	2	3
C108.5	3	3	2	-	-	-	-	-	3	2	2	3


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C109 / VL5291/ VLSI SIGNAL PROCESSING												
C109.1	2	2	-	-	-	2	2	-	2	3	-	2
C109.2	2	3	-	-	-	2	2	-	2	3	-	2
C109.3	2	2	-	-	-	2	2	-	2	3	-	2
C109.4	2	2	-	-	-	2	2	-	2	3	-	2
C109.5	2	3	-	-	-	2	2	-	2	3	-	2
C110 / VL5202/ LOW POWER VLSI DESIGN												
C110.1	3	3	3	3	2	2	-	-	-	2	-	-
C110.2	3	2	2	-	-	2	-	-	-	-	-	-
C110.3	3	3	3	-	-	2	-	2	-	2	-	2
C110.4	3	3	3	-	-	2	-	2	-	2	-	2
C110.5	3	3	3	-	-	2	-	2	-	2	-	2
C111 /VL5001 /DEVICE MODELING - I												
C111.1	2	2	-	-	-	-	-	-	-	-	-	-
C111.2	3	2	3	-	-	2	2	-	-	3	-	2
C111.3	3	3	3	3	-	2	2	-	-	3	-	2
C111.4	3	3	3	3	-	2	2	-	-	3	-	2
C111.5	3	3	3	3	-	2	2	-	-	3	-	2
C112/ DS5191/ DSP PROCESSOR ARCHITECTURE AND PROGRAMMING												
C112.1	2	2	2	-	2	-	-	-	-	-	2	2
C112.2	2	2	2	-	2	-	-	-	-	-	2	2
C112.3	2	2	2	-	2	-	-	-	-	-	2	2
C112.4	2	2	2	-	2	-	-	-	-	-	2	2
C112.5	2	2	2	-	2	-	-	-	-	-	2	2
C113 / AP5191 /EMBEDDED SYSTEM DESIGN												
C113.1	3	2	2	-	2	-	-	-	-	-	-	2
C113.2	3	2	2	-	2	-	-	-	-	-	-	2
C113.3	3	2	2	-	2	-	-	-	-	-	-	2
C113.4	3	2	2	-	2	-	-	-	-	-	-	2
C113.5	3	2	2	-	2	-	-	-	-	-	-	2
C114/ VL5211 /VLSI DESIGN LABORATORY II												
C114.1	3	3	3	2	2	2	-	2	2	2	3	2
C114.2	3	3	3	2	2	-	-	-	-	3	2	2
C114.3	3	3	3	2	2	-	-	-	-	2	2	2
C114.4	3	3	3	3	3	3	3	3	3	3	3	3


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C114.5	3	3	3	3	3	3	3	3	3	3	3	3
C115/ CP5281 /TERM PAPER WRITING AND SEMINAR												
C115.1	2	-	2	2	3	-	2	2	3	2	3	2
C115.2	2	-	2	2	3	-	2	2	3	2	3	2
C115.3	2	-	2	2	3	-	2	2	3	2	3	2
C115.4	2	-	2	2	3	-	2	2	3	2	3	2
C115.5	2	-	2	2	3	-	2	2	3	2	3	2
C201/VL5301 ANALOG TO DIGITAL INTERFACES												
C201.1	3	2	2	-	-	2	-	-	-	3	-	2
C201.2	2	3	2	-	-	-	-	-	-	-	-	-
C201.3	3	2	2	-	-	-	-	-	-	2	-	-
C201.4	3	2	2	-	-	-	-	-	-	2	-	-
C201.5	3	2	2	-	-	-	-	-	-	2	-	-
C202 / AP5292 DIGITAL IMAGE PROCESSING												
C202.1	3	2	2	2	-	-	-	-	-	2	2	2
C202.2	3	2	2	2	2	-	-	-	-	2	2	2
C202.3	3	2	2	2	-	-	-	-	-	2	2	2
C202.4	3	2	2	2	-	-	-	-	-	2	2	2
C202.5	3	2	2	2	-	-	-	-	-	2	2	2
C203/ VL5091 MEMS AND NEMS												
C203.1	3	3	3	2	2	2	-	2	2	2	3	2
C203.2	3	2	3	2	2	-	-	-	-	3	2	2
C203.3	3	2	2	2	2	-	-	-	-	2	2	2
C203.4	3	2	2	2	2	-	-	-	-	2	2	2
C203.5	3	2	2	2	2	-	-	-	-	2	2	2
C204/VL5311 PROJECT WORK PHASE-I												
C204.1	2	2	2	2	-	2	2	2	3	3	3	3
C204.2	2	-	2	2	2	2	-	2	3	3	2	2
C204.3	2	2	2	2	2	2	-	2	2	3	2	2
C204.4	2	2	2	2	2	2	-	2	2	3	2	2
C204.5	2	2	2	2	2	2	-	2	2	3	2	2


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C205/ VL5411 PROJECT WORK PHASE-II												
C205.1	3	3	3	2	2	-	-	-	-	-	-	2
C205.2	3	3	3	3	3	-	-	-	-	-	-	2
C205.3	3	3	2	3	2	-	-	-	-	-	-	2
C205.4	3	3	2	3	2	-	-	-	-	-	-	2
C205.5	3	3	2	3	2	-	-	-	-	-	-	2


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MECHANICAL ENGINEERING



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S.NO	COURSE OUTCOME	BT LEVEL
SEMESTER III		
C201/MA8353-TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS		
C201.1	Study the Partial Differential Equations in various methods.	K2
C201.2	Solving Fourier Series for different types of functions.	K3
C201.3	Computing the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions	K3
C201.4	Deduce the Gaussian function in Self reciprocal form using Fourier Transforms.	K3
C201.5	Formation of finite difference method in Z-transforms.	K2
C202/ME8391-ENGINEERING THERMODYNAMICS		
C202.1	Apply the basic concepts of thermodynamics for energy conversion phenomenon.	K3
C202.2	Calculate thermal efficiency and coefficient of performance for heat engines, refrigerators and heat pumps.	K3
C202.3	Evaluate the performance of steam power cycles.	K3
C202.4	Derive simple thermodynamic relations of ideal and real gases.	K3
C202.5	Calculate the properties of air vapor mixtures using psychometrics	K3
C202.6	Explain the performance of refrigeration systems and its environmental impacts.	K1
C203/CE8394-FLUID MECHANICS AND MACHINERY		
C203.1	Apply the concept of fluid properties with their effects on fluid flow.	K3
C203.2	Apply the concepts of general energy equations in fluid flow problems.	K3
C203.3	Calculate the major and minor losses in flow through pipes.	K3
C203.4	Apply the mathematical knowledge in boundary layer concepts.	K3
C203.5	Understand the working principle of pumps and turbines.	K2
C203.6	Determine the various performance characteristics of pumps and turbines.	K3
C204/ME8351-MANUFACTURING TECHNOLOGY - I		
C204.1	Understand the fundamentals of casting, Welding, Forging and Sheet metal process	K2


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C204.2	Understand the basic concepts of Fusion and Non-Fusion Welding process	K2
C204.3	Identify the different defects which occur in welding and casting process.	K1
C204.4	Explain the various forming operations can performed in sheet metal process	K1
C204.5	Compute the casting allowances and time taken for solidification in the process	K3
C204.6	Understand the concepts of thermo and thermo setting plastics used in plastic manufacturing components	K2
C205/EE8353-ELECTRICAL DRIVES AND CONTROLS		
C205.1	Use the rating and classes of duty of machines for particular application.	K3
C205.2	Explain the mechanical and braking characteristics of dc and ac machines.	K1
C205.3	Describe the starting methods of both dc and ac machines.	K1
C205.4	Clarify conventional and solid state speed control of dc drives.	K1
C205.5	Enlighten the speed control of dc and ac drive by conventional and solid state methods.	K3
C205.6	Illustrate the overview of semi conductor devices, design the rectifier and analyze its working	K2
C206/ME8361-MANUFACTURING TECHNOLOGY LABORATORY - I		
C206.1	Perform the taper turning operation in conventional lathe machine	K3
C206.2	Perform the various thread operations for the given specification.	K3
C206.3	Estimate the taper angle and machining time calculations in various machining operations.	K2
C206.4	Perform the hexagonal bolts and square studs using shaper machine	K3
C206.5	Calculate the eccentricity value to produce eccentric components	K3
C207/ME8381-COMPUTER AIDED MACHINE DRAWING		
C207.1	Construct the machine drawing as per standards, Fits and Tolerances	K2
C207.2	Identify proper computer graphics techniques for 2D drawing and 3D model.	K1
C207.3	Develop the part model for any machine components by using modeling software.	K3
C207.4	Develop the assembly model for machine components by using modeling software.	K3
C207.5	Develop the program code for CNC machines for simulation	K3
C207.6	Understand the concept of Machining the components by using CNC machine	K2


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C208/EE8361-ELECTRICAL ENGINEERING LABORATORY		
C208.1	Perform the load test, OCC, load characteristics and speed control of DC shunt and DC series motor	K3
C208.2	Perform the load test, OC and SC test on a single phase transformer	K3
C208.3	Examine the regulation of an alternator by EMF and MMF methods	K3
C208.4	Conduct the load test, speed control on various phase of induction motor	K2
C208.5	Explore the DC and AC starters	K3
C208.6	Perform the load test, OCC, load characteristics and speed control of DC shunt and DC series motor	K3
C209/HS8381-INTERPERSONAL SKILLS / LISTENING & SPEAKING		
C209.1	Take international examination such as IELTS and TOEFL	K3
C209.2	Participate in Group Discussion.	K3
C209.3	Successfully answer questions in Interviews.	K3
C209.4	Make effective Presentations.	K3
C209.5	Participate confidently and appropriately in conversations both formal and informal	K3
SEMESTER IV		
C210/MA8452-STATISTICS AND NUMERICAL METHODS		
C210.1	Define null and alternative hypothesis, Apply test statistic, level of significance and decision rule, Distinguish between Type I error and Type II errors to Explain the difference between one and two sided tailed of hypothesis.	K1
C210.2	Explain the concept of analysis of variance to Distinguish between one and two factor analysis of variance tests.	K1
C210.3	Solve Algebraic and Transcendental equations by various methods, Simultaneous linear equations using Direct and Indirect methods. Compute Eigen value of a matrix by power method.	K3
C210.4	Interpret the data for Interpolation using various methods and compute the Numerical differentiation for Equal & Unequal intervals. Using Trapezoidal and Simpsons method for Numerical Integration solution.	K3
C210.5	Solving first order differential equations using various types of single and multi step methods.	K3
C210.6	Applying finite difference methods for solving II order differential equations.	K3
C211/ME8492-KINEMATICS OF MACHINERY		
C211.1	Understand the various kinematic concepts in different mechanisms.	K2

C211.2	Understand the velocity and acceleration of links at any point in various mechanisms.	K2
C211.3	Construct the various cam profiles with follower motion.	K3
C211.4	Solve the problems on gear and gear trains	K3
C211.5	Recognize the effect of friction in different friction drives.	K3
C211.6	Design the various motion transmission elements with their relative movements.	K3
C212/ME8451-MANUFACTURING TECHNOLOGY- II		
C212.1	Understand the constructional features of lathe and special machines	K2
C212.2	Explain the various mechanism used in special machines	K1
C212.3	Develop the part program in CNC milling and turning centers.	K3
C212.4	Compute the tool nomenclature and tool life calculation in metal cutting process	K3
C212.5	Select the suitable grinding wheels used in different grinding process	K1
C212.6	Identify the suitable process to manufacture simple engineering components	K1
C213/ME8491-ENGINEERING METALLURGY		
C213.1	Describe the various phase diagram for engineering metals	K1
C213.2	Identify the different types of engineering materials in industrial applications	K1
C213.3	Understand the various isothermal transformation in heat treatment process	K2
C213.4	Understand the effects of alloying elements on Ferrous and Non-Ferrous materials.	K2
C213.5	Discuss the properties and applications of Polymers, Ceramics and Composite materials	K2
C213.6	Identify the mechanical properties and deformation using various mechanical testing methods.	K1
C214/ME8395-STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS		
C214.1	Understand the concept of deformation due to different loading conditions.	K1
C214.2	Understand the fundamentals of various stresses and strains in the structural member.	K1
C214.3	Construct the shear force and bending moment diagram for load transferring mechanism in different beams.	K3
C214.4	Apply the basic equations to design the shaft and helical springs.	K3
C214.5	Determine the slope and deflection in beams using different methods.	K2

C214.6	Design thin and thick cylinders subjected to internal and external pressures	K3
C215/ME8493-THERMAL ENGINEERING-I		
C215.1	Calculate the efficiency of various gas power cycles.	K3
C215.2	Compute the performance test on IC engines	K3
C215.3	Estimate the concept of single and multi stage steam turbines	K3
C215.4	Apply the thermodynamic concepts in various thermal systems.	K3
C215.5	Calculate the properties of air vapor mixtures using psychometrics	K3
C215.6	Explain the importance of efficient energy utilization in engineering practices and its impact on the environment	K1
C216/ME8462-MANUFACTURING TECHNOLOGY LABORATORY-II		
C216.1	Calculate the various cutting forces using tool dynamometers.	K3
C216.2	Generate gears using gear hobbling machines	K2
C216.3	Perform surface finish operations using surface grinding and cylindrical grinding machines.	K3
C216.4	Develop CNC part programming for turning and milling operations	K3
C216.5	Perform contour milling operation in various milling machine.	K3
C216.6	Perform gear cutting operation using milling machine.	K3
C217/CE8381-STRENGTH OF MATERIALS & FLUID MECHANICS AND MACHINERY LABORATORY		
C217.1	Determine the elastic constants by using tensile and torsion test machine for mild steel (MS) specimen	K2
C217.2	Conduct hardness test for different metals and carry out impact test for MS specimen	K3
C217.3	Determine deflection in beams	K2
C217.4	Determine the discharge coefficients for venture meter & Orifice meter	K2
C217.5	Understand the flow measurement by using flow measuring equipment	K2
C217.6	Evaluate the performance of hydraulic turbines & pumps under different working conditions.	K3
C218/HS8461-ADVANCED READING AND WRITING		
C218.1	Make effective Presentations.	K1
C218.2	Participate in Group Discussion.	K2
C218.3	Develop the knowledge to answer the questions successfully in the Interviews.	K3

C218.4	Take international examination such as IELTS and TOEFL	K1
C218.5	Participate confidently and appropriately in conversations both formal and informal	K3
C218.6	Take international examination such as IELTS and TOEFL	K1
SEMESTER /V		
C301/ME8595-THERMAL ENGINEERING-II		
C301.1	Solve problems in Steam Nozzle	K2
C301.2	Explain the functioning and features of different types of Boilers and auxiliaries and calculate performance parameters.	K2
C301.3	Explain the flow in steam turbines, draw velocity diagrams for steam turbines and solve problems.	K3
C301.4	Summarize the concept of Cogeneration, Working features of Heat pumps and Heat exchangers.	K3
C301.5	Solve problems using refrigerant table / charts and psychrometric charts.	K3
C301.6	Explain and solve the problems in various Refrigeration processes.	K3
C302/ME8593-DESIGN OF MACHINE ELEMENTS		
C302.1	Understand the basic design parameters of various machine elements	K2
C302.2	Understand the various stresses induce due to different loading conditions.	K3
C302.3	Apply the basic design procedure to design the shafts, bearing and couplings.	K3
C302.4	Apply the basic design steps to design the temporary and permanent joints.	K3
C302.5	Design the various energy storing elements and engine components.	K3
C302.6	Design the various machine members as per standard design catalogues.	K2
C303/ME8501-METROLOGY AND MEASUREMENTS		
C303.1	Discuss the concepts of measurements in metrological instruments.	K2
C303.2	Explain the principles of linear and angular measuring instruments for industrial applications.	K1
C303.3	Understand the concepts of various computer aided inspection tools.	K2
C303.4	Explain the different form measurements in industry.	K1
C303.5	Understand the basic concepts of interchangeability and selective assembly.	K2
C303.6	Understand the working principle of measuring equipments to measure	K2


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	intensive and extensive properties.	
C304/ME8594-DYNAMICS OF MACHINES		
C304.1	Understand the various force-motion relationships in different mechanisms	K2
C304.2	Apply the principles of statics and dynamics to machinery	K3
C304.3	Understand the balancing masses in the rotating and reciprocating machines	K2
C304.4	Solve the free vibration problems in longitudinal, transverse and torsional systems	K3
C304.5	Apply the basic principles to reduce the undesirable effects of forced vibrations	K3
C304.6	Apply the principles in mechanisms used for speed control and stability control	K3
C305/OIM552-LEAN MANUFACTURING (Open Elective-1)		
C305.1	Understand the concept of conventional manufacturing and Lean manufacturing	K2
C305.2	Understand the cellular manufacturing theory, and uses of Lean production tools such as JIT, Kuban & TPM	K2
C305.3	Apply the 'set up time' reduction principles and implementation of TQM & 5S principles	K3
C305.4	Use the statistical consideration, variability reduction and design of experiment using SIC-ZIGMA implementation	K3
C305.5	Understand the waste in any process, minimize waste through proper kaizens and other methods	K2
C305.6	To improve the organization's efficiency through the use of LM tools	K3
C306/ME8511-KINEMATICS AND DYNAMICS LABORATORY		
C306.1	Understand the concept of differential gear trains and kinematic links	K2
C306.2	Evaluate the frequency of the vibrating system	K3
C306.3	Use the controlling mechanisms	K3
C306.4	Understand the balancing masses in the rotating and reciprocating machines	K2
C306.5	Determination of mass moment of inertia for different component	K2
C306.6	Use the measuring devices for dynamic testing	K3
C307/ME8512-THERMAL ENGINEERING LABORATORY		
C307.1	Conduct a test to find thermal conductivity of various engineering materials	K3
C307.2	Measure the heat transfer rate in natural and forced convection environment	K3

C307.3	Evaluate radiation heat transfer between black body surfaces and grey body surfaces	K3
C307.4	Understand the effectiveness of parallel and counter flow heat exchanger	K2
C307.5	Compare the performance of theoretical and experimental refrigeration and air conditioning systems.	K2
C307.6	Evaluate the performance of air compressors.	K3
C308/ME8513-METROLOGY AND MEASUREMENTS LABORATORY		
C308.1	Ability to handle different measurement tools and perform measurements in quality impulsion	K3
C308.2	Identify various gauges for measurement.	K1
C308.3	Demonstrate linear and angular measurement using precision instruments.	K3
C308.4	Apply the load cell to measure the force and torque	K3
C308.5	Use thermocouple and comparator for taking measurement.	K3
C308.6	Measure bore diameter using Bore gauge, telescope gauge and surface roughness using Surface Finish Measuring Equipment	K2
SEMESTER VI		
C310/ME8651-DESIGN OF TRANSMISSION SYSTEMS		
C310.1	Select the materials for mechanical transmission system.	K2
C310.2	Apply the design knowledge to design the various flexible drives.	K3
C310.3	Apply the design concepts to design the parallel axis mating gear.	K3
C310.4	Apply the basic design steps to design the perpendicular and oblique axis mating gear.	K3
C310.5	Apply the design procedure to design the gear box.	K3
C310.6	Apply the design principles to design the various friction drives.	K3
C311/ME8691-COMPUTER AIDED DESIGN AND MANUFACTURING		
C311.1	Understand the concept of 2D and 3D transformations and clipping algorithm.	K2
C311.2	Understand the fundamentals of parametric curves, surfaces and Solids	K2
C311.3	Apply the visual realism by using different algorithm	K3
C311.4	Apply the mass property calculations on different parts	K3
C311.5	Understand the different types of CAD Standards.	K2
C311.6	Apply the various CAD algorithms in the area of product design and development.	K3

C312/ME8693-HEAT AND MASS TRANSFER		
C312.1	Understand the basic laws of heat transfer in the engineering systems.	K2
C312.2	Compute the temperature distribution in steady and unsteady state heat conduction.	K3
C312.3	Evaluate the heat transfer coefficient for convection	K3
C312.4	Calculate the phase change properties and the heat exchanger performance by varying the methods	K3
C312.5	Calculate radiation heat transfer between black and gray body surfaces.	K3
C312.6	Analyze the diffusion and convective mass transfer occurring in different applications	K3
C313/ME8692-FINITE ELEMENT ANALYSIS		
C313.1	Solve Boundary value problems in structural and non-structural application.	K3
C313 .2	Apply finite element methods in one dimensional Problem.	K3
C313 .3	Solve dynamic problem by using finite element procedure.	K3
C313 .4	Apply finite element technique in two dimensional scalar Problems.	K3
C313 .5	Apply finite element method in two dimensional Vector problems.	K3
C313 .6	Apply finite element procedure to solve problems on iso-parametric element	K3
C314/ME8694-HYDRAULICS AND PNEUMATICS		
C314.1	Explain the Fluid power and operation of different types of pumps.	K3
C314.2	Summarize the features and functions of Hydraulic motors, actuators and Flow control valves	K2
C314.3	Explain the different types of Hydraulic circuits and systems	K1
C314.4	Explain the working of different pneumatic circuits and systems	K1
C314.5	Summarize the various trouble shooting methods and applications of hydraulic and pneumatic systems.	K2
C314.6	Design the hydraulic circuit for multi-functional operations	K3
C315/ME8091-AUTOMOBILE ENGINEERING (Professional Elective-1)		
C315.1	To understand basics of Automobile Engineering, conversant with drive train and transmission.	K2
C315.2	To make the student conversant with Axles, Steering System & Tyre Wheel assembly and to understand basic and types of steering system	K1
C315.3	To make the student conversant with Suspension and Brake System	K1


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C315.4	To make the student conversant with Vehicle Performance & Safety also able to understand basics of Vehicle maintenance.	K1
C315.5	To make the student conversant with Vehicle Maintenance & Garage Practice also able to perform garage practices	K1
C315.6	To understand the various Automobile Electrical System and latest advancement in vehicles	K2
C316/ME8681-C.A.D. / C.A.M. LABORATORY		
C316.1	Construct the machine drawing as per standards, Fits and Tolerances	K3
C316.2	Identify proper computer graphics techniques for 2D drawing and 3D model.	K1
C316.3	Develop the part model for any machine components by using modeling software.	K3
C316.4	Develop the assembly model for machine components by using modeling software.	K3
C316.5	Develop the program code for CNC machines for simulation	K3
C316.1	Understand the concept of Machining the components by using CNC machine	K2
C317/ME8682-DESIGN AND FABRICATION PROJECT		
C317.1	Identify problems with their technical skills	K1
C317.2	Design a product as per requirement	K3
C317.3	Develop the detailed drawing for fabrication product with latest tool	K3
C317.4	Create prototype of a working model	K1
C317.5	Contribute effectively as an individual and as a member in a team	K2
C317.6	Develop detailed report for new product	K3
C318/HS8581-PROFESSIONAL COMMUNICATION		
C318.1	Take international examination such as IELTS and TOEFL	K1
C318.2	Participate in Group Discussion.	K3
C318.3	Successfully answer questions in Interviews.	K2
C317.4	Make effective Presentations.	K1
C318.5	Participate confidently and appropriately in conversations both formal and informal	K2
C318.6	Take international examination such as IELTS and TOEFL	K1

SEMESTER VII		
C401/ME8792-POWER PLANT ENGINEERING		
C401.1	Understand the layout and components of various power plants	K2
C401.2	Understand different types of cycles and it's efficiencies in various power plants.	K2
C401.3	Understand the sources and concepts of renewable energy	K2
C401.4	Calculate the factors associated with power plant economics.	K3
C401.5	Select the suitability of site for a power plant.	K1
C401.6	Identify safety aspects of power plants	K1
C402/ME8793-PROCESS PLANNING AND COST ESTIMATION		
C402.1	Introduce the process planning concepts to make cost estimation for various products after process planning	K1
C402.2	Identify the documents required for the process planning	K1
C402.3	Calculate the material cost of a product.	K3
C402.4	Explain the various associated in manufacturing shops.	K1
C402.5	Calculate the machining time for various machining operations.	K3
C402.6	Apply the subcontractor's capabilities and their quality plans.	K3
C403/ME8791-MECHATRONICS		
C403.1	Explain mechatronics design process	K1
C403.2	Choose sensors based on their working principle.	K2
C403.3	Discuss the working of various actuators.	K3
C403.4	Discuss the architecture of microprocessors and microcontroller.	K3
C403.5	Explain the architecture of PLC and contrast it from PC and relay systems.	K1
C403.6	Discuss the various case studies.	K3
C404/OIE751 ROBOTICS (Open Elective-2)		
C404.1	To develop the student's knowledge in various robot structures and their workspace	K3
C404.2	To develop student's skills in performing spatial transformations associated with rigid body motions	K3
C404.3	To develop student's skills in perform kinematics analysis of robot systems	K3
C404.4	To provide the student with knowledge of the singularity issues associated with	K1


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	the operation of robotic systems	
C404.5	To provide the student with some knowledge and analysis skills associated with trajectory planning	K1
C404.6	To provide the student with some knowledge and skills associated with robot control	K1
C405/GE 8077 TOTAL QUALITY MANAGEMENT (Professional Elective-2)		
C405.1	Describe the dimensional barrier regarding Quality.	K2
C405.2	Summarize the Total quality principles.	K2
C405.3	Demonstrate the tools utilization for quality improvement.	K2
C405.4	Discover the new decision of principle in real time projects.	K2
C405.5	Analyze the various types of techniques are used to measure quality.	K3
C405.6	Apply the various quality systems in implementation of Total quality management.	K3
C406/ME8097 NON DESTRUCTIVE TESTING AND EVALUATION (Professional Elective-3)		
C406.1	The student shall be able to select an appropriate NDT technique as per requirement	K1
C406.2	The student shall be able to set various process parameters and control the NDT process for the desired output parameters	K3
C406.3	The student shall be able to find the internal flaws in the material by NDT and take measures to eliminate them	K1
C406.4	The student shall be able to solve various problems encountered like leakage, cracks, blowholes etc with the manufacturing process by analyzing the data.	K3
C406.5	The student shall be competent enough to make use of modern tools and softwares for analyzing and solving real life problems	K2
C406.6	The student shall be able to introduce environmental friendly solutions to achieve organizational sustainability	K1
C407/ME8711-SIMULATION AND ANALYSIS LABORATORY		
C407.1	Simulate the dynamic system by using MAT lab software.	K3
C407.2	Simulate the mechanism by using multi-body dynamic software	K3
C407.3	Apply the stresses for trusses and beams using analysis software	K
C407.4	Apply the stresses for axis-symmetric components by using analysis software	K3
C407.5	Apply the response of vibrating system analysis software	K3

C407.6	Apply the Thermal stress and heat transfer analysis of plates and cylindrical shells analysis software	K3
C408/ME8781-MECHATRONICS LABORATORY		
C408.1	Simulate Hydraulic, Pneumatic circuit using software tool.	K3
C408.2	Simulate Electro pneumatic circuits using trainer kits.	K3
C408.3	Design and test various fluid power circuits using software tool.	K3
C408.4	Interface stepper motor with 8051 micro controller	K3
C408.5	Conduct experiments using servo controller and stepper motor.	K3
C408.6	Conduct experiments PID Controller interfacing	K3
C409/ME8712-TECHNICAL SEMINAR		
C409.1	Enrich the communication skills of the student technical topics of interest	K2
C409.2	Familiarize the preparation of content of technical writing	K2
C409.3	Enrich the presentations skills of the student technical topics of interest	K2
C409.4	Participate confidently and appropriately in conversations both formal and informal	K3
C409.5	Participate in technical group discussion.	K3
C409.6	Participate in technical quiz programs	K3
SEMESTER VIII		
C410/ME8591-PRINCIPLES OF MANAGEMENT		
C410.1	Identifies the global context for taking managerial organization.	K1
C410.2	Predict the global opportunity that will impact the management of an organization.	K1
C410.3	Prepare the management principles into management practices.	K2
C410.4	Analyze the managerial problem with ethical practice standards.	K3
C410.5	Breakdown the managerial task executed in the variety of circumstances.	K3
C410.6	Identify the most effective Action to take in the specific situation of addressing issues.	K1
C411/IE8693-PRODUCTION PLANNING AND CONTROL (Professional Elective- IV)		
C411.1	Understand the production planning processes to convert the raw material into	K2

	finished product.	
C411.2	Prepare the production planning activities chart for work study to reduce the production time.	K3
C411.3	Improve the market sale of existing product by changing the product planning	K3
C411.4	Select the suitable process planning for manufacturing of a product.	K1
C411.5	Use the production schedule for the given product.	K3
C411.6	Use inventory for a new product with help of latest software.	K3
C412/ME8811-PROJECT WORK		
C412.1	Identify real world problems of core engineering and related systems	K1
C412.2	Formulate new set of problems	K2
C412.3	Take on with industrial changes	K1
C412.4	Evaluate to obtain solution for problems in mechanical engineering systems	K3
C412.5	Adapt to work as a team for the successful completion of the project	K2
C412.6	Document preparation and communication very clearly	K3

S.NO	CO-PO MAPPING													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C201/MA8353-TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS														
C201.1	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C201.2	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C201.3	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C201.4	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C201.5	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C202/ME8391-ENGINEERING THERMODYNAMICS														
C202.1	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C202.2	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C202.3	3	3	2	2	-	-	-	-	-	-	-	-	3	2


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C202.4	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C202.5	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C202.6	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C203/CE8394-FLUID MECHANICS AND MACHINERY														
C203.1	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C203.2	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C203.3	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C203.4	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C203.5	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C203.6	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C204/ME8351-MANUFACTURING TECHNOLOGY - I														
C204.1	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C204.2	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C204.3	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C204.4	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C204.5	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C204.6	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C205/EE8353-ELECTRICAL DRIVES AND CONTROLS														
C205.1	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C205.2	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C205.3	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C205.4	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C205.5	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C205.6	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C206/ME8361-MANUFACTURING TECHNOLOGY LABORATORY - I														
C206.1	3	2	2	-	-	-	-	-	-	-	-	-	3	-
C206.2	3	2	2	-	-	-	-	-	-	-	-	-	3	-
C206.3	3	2	2	-	-	-	-	-	-	-	-	-	3	-


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C206.4	3	2	2	-	-	-	-	-	-	-	-	-	3	-
C206.5	3	2	2	-	-	-	-	-	-	-	-	-	3	-
C207/ME8381-COMPUTER AIDED MACHINE DRAWING														
C207.1	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C207.2	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C207.3	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C207.4	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C207.5	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C207.6	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C208/EE8361-ELECTRICAL ENGINEERING LABORATORY														
C208.1	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C208.2	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C208.3	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C208.4	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C208.5	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C208.6	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C209/HS8381-INTERPERSONAL SKILLS / LISTENING & SPEAKING														
C209.1	3	2	3	-	-	-	-	-	-	-	-	-	3	2
C209.2	3	2	3	-	-	-	-	-	-	-	-	-	3	2
C209.3	3	2	3	-	-	-	-	-	-	-	-	-	3	2
C209.4	3	2	2	-	-	-	-	-	-	-	-	-	3	2
C209.5	3	2	2	-	-	-	-	-	-	-	-	-	3	-
C210/MA8452-STATISTICS AND NUMERICAL METHODS														
C210.1	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C210.2	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C210.3	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C210.4	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C210.5	3	2	3	2	2	-	-	-	-	-	-	2	2	3


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C210.6	3	2	3	2	2	-	-	-	-	-	-	2	2	3
C211/ME8492-KINEMATICS OF MACHINERY														
C211.1	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C211.2	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C211.3	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C211.4	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C211.5	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C211.6	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C212/ME8451-MANUFACTURING TECHNOLOGY- II														
C212.1	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C212.2	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C212.3	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C212.4	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C212.5	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C212.6	3	2	-	-	-	-	-	-	-	-	-	-	3	3
C213/ME8491-ENGINEERING METALLURGY														
C213.1	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C213.2	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C213.3	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C213.4	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C213.5	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C213.6	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C214/ME8395-STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS														
C214.1	2	3	-	-	-	-	-	-	-	-	-	-	2	-
C214.2	2	3	-	-	-	-	-	-	-	-	-	-	2	-
C214.3	2	3	-	-	-	-	-	-	-	-	-	-	2	-
C214.4	2	3	-	-	-	-	-	-	-	-	-	-	2	-
C214.5	2	3	-	-	-	-	-	-	-	-	-	-	2	-


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C214.6	2	3	-	-	-	-	-	-	-	-	-	-	2	-
C215/ME8493-THERMAL ENGINEERING-I														
C215.1	3	3	2	-	-	-	2	-	-	-	-	-	3	2
C215.2	3	3	2	-	-	-	2	-	-	-	-	-	3	2
C215.3	3	3	2	-	-	-	2	-	-	-	-	-	3	2
C215.4	3	3	2	-	-	-	2	-	-	-	-	-	3	2
C215.5	3	3	2	-	-	-	2	-	-	-	-	-	3	2
C215.6	3	3	2	-	-	-	2	-	-	-	-	-	3	2
C216/ME8462-MANUFACTURING TECHNOLOGY LABORATORY-II														
C216.1	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C216.2	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C216.3	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C216.4	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C216.5	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C216.6	3	-	2	-	-	-	-	-	-	-	-	-	3	2
C217/CE8381-STRENGTH OF MATERIALS & FLUID MECHANICS AND MACHINERY LABORATORY														
C217.1	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C217.2	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C217.3	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C217.4	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C217.5	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C217.6	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C218/HS8461-ADVANCED READING AND WRITING														
C218.1	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C218.2	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C218.3	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C218.4	3	3	2	2	-	-	-	-	-	-	-	-	3	2


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C218.5	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C218.6	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C301/ME8595-THERMAL ENGINEERING-II														
C301.1	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C301.2	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C301.3	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C301.4	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C301.5	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C301.6	3	3	2	-	-	-	-	-	-	-	-	-	3	2
C302/ME8593-DESIGN OF MACHINE ELEMENTS														
C302.1	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.2	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.3	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.4	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.5	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.6	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C303/ME8501-METROLOGY AND MEASUREMENTS														
C303.1	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C303.2	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C303.3	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C303.4	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C303.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C303.6	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C304/ME8594-DYNAMICS OF MACHINES														
C304.1	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C304.2	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C304.3	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C304.4	3	2	-	-	-	-	-	-	-	-	-	-	3	2


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C304.5	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C304.6	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C305/OIM552-LEAN MANUFACTURING (Open Elective-1)														
C305.1	3	2	-	-	-	-	-	-	-	-	-	-	2	3
C305.2	3	2	-	-	-	-	-	-	-	-	-	-	2	3
C305.3	3	2	-	-	-	-	-	-	-	-	-	-	2	3
C305.4	3	2	-	-	-	-	-	-	-	-	-	-	2	3
C305.5	3	2	-	-	-	-	-	-	-	-	-	-	2	3
C305.6	3	2	-	-	-	-	-	-	-	-	-	-	2	3
C306/ME8511-KINEMATICS AND DYNAMICS LABORATORY														
C306.1	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C306.2	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C306.3	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C306.4	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C306.5	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C306.6	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C307/ME8512-THERMAL ENGINEERING LABORATORY														
C307.1	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C307.2	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C307.3	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C307.4	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C307.5	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C307.6	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C308/ME8513-METROLOGY AND MEASUREMENTS LABORATORY														
C310.1	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C310.2	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C310.3	3	3	-	2	2	-	-	-	-	-	-	-	3	2


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C310.4	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C310.5	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C310.6	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C310/ME8651-DESIGN OF TRANSMISSION SYSTEMS														
C302.1	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.2	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.3	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.4	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.5	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C302.6	3	3	2	2	-	-	2	-	-	-	-	-	3	2
C311/ME8691-COMPUTER AIDED DESIGN AND MANUFACTURING														
C311.1	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C311.2	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C311.3	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C311.4	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C311.5	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C311.6	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C312/ME8693-HEAT AND MASS TRANSFER														
C312.1	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C312.2	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C312.3	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C312.4	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C312.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C312.6	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C313/ME8692-FINITE ELEMENT ANALYSIS														
C313.1	2	-	-	-	2	-	-	3	-	-	3	-	2	2
C313.2	2	-	-	-	2	-	-	3	-	-	3	-	2	2
C313.3	2	-	-	-	2	-	-	3	-	-	3	-	2	2


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C313.4	2	-	-	-	2	-	-	3	-	-	3	-	2	2
C313.5	2	-	-	-	2	-	-	3	-	-	3	-	2	2
C313.6	2	-	-	-	2	-	-	3	-	-	3	-	2	2
C314/ME8694-HYDRAULICS AND PNEUMATICS														
C314.1	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C314.2	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C314.3	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C314.4	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C314.5	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C314.6	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C315/ME8091-AUTOMOBILE ENGINEERING (Professional Elective-1)														
C315.1	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C315.2	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C315.3	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C315.4	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C315.5	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C315.6	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C316/ME8681-C.A.D. / C.A.M. LABORATORY														
C316.1	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C316.2	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C316.3	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C316.4	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C316.5	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C316.6	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C317/ME8682-DESIGN AND FABRICATION PROJECT														
C317.1	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C317.2	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C317.3	3	3	2	2	2	-	-	-	-	-	-	-	3	2


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C317.4	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C317.5	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C317.6	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C318/HS8581-PROFESSIONAL COMMUNICATION														
C318.1	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C318.2	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C318.3	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C317.4	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C318.5	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C318.6	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C401/ME8792-POWER PLANT ENGINEERING														
C401.1	3	2	-	-	-	-	2	-	-	-	-	-	3	2
C401.2	3	2	-	-	-	-	2	-	-	-	-	-	3	2
C401.3	3	2	-	-	-	-	2	-	-	-	-	-	3	2
C401.4	3	2	-	-	-	-	2	-	-	-	-	-	3	2
C401.5	3	2	-	-	-	-	2	-	-	-	-	-	3	2
C401.6	3	2	-	-	-	-	2	-	-	-	-	-	3	2
C402/ME8793-PROCESS PLANNING AND COST ESTIMATION														
C402.1	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C402.2	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C402.3	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C402.4	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C402.5	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C402.6	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C403/ME8791-MECHATRONICS														
C403.1	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C403.2	3	2	-	2	-	-	-	-	-	-	-	-	3	2


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C403.3	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C403.4	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C403.5	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C403.6	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C404/OIE751 ROBOTICS (Open Elective-2)														
C404.1	3	2	2	2	-	-	-	-	-	-	-	-	3	2
C404.2	3	2	2	2	-	-	-	-	-	-	-	-	3	2
C404.3	3	2	2	2	-	-	-	-	-	-	-	-	3	2
C404.4	3	2	2	2	-	-	-	-	-	-	-	-	3	2
C404.5	3	2	2	2	-	-	-	-	-	-	-	-	3	2
C404.6	3	2	2	2	-	-	-	-	-	-	-	-	3	2
C405/GE 8077 TOTAL QUALITY MANAGEMENT (Professional Elective-2)														
C405.1	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C405.2	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C405.3	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C405.4	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C405.5	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C405.6	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C406/ME8097 NON DESTRUCTIVE TESTING AND EVALUATION (Professional Elective-3)														
C406.1	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C406.2	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C406.3	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C406.4	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C406.5	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C406.6	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C407/ME8711-SIMULATION AND ANALYSIS LABORATORY														
C407.1	2	-	-	-	3	3	3	3	-	3	3	-	2	3
C407.2	2	-	-	-	3	3	3	3	-	3	3	-	2	3


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C407.3	2	-	-	-	3	3	3	3	-	3	3	-	2	3
C407.4	2	-	-	-	3	3	3	3	-	3	3	-	2	3
C407.5	2	-	-	-	3	3	3	3	-	3	3	-	2	3
C407.6	2	-	-	-	3	3	3	3	-	3	3	-	2	3
C408/ME8781-MECHATRONICS LABORATORY														
C408.1	3	3	2	-	-	2	-	-	-	-	-	-	3	2
C408.2	3	3	2	-	-	2	-	-	-	-	-	-	3	2
C408.3	3	3	2	-	-	2	-	-	-	-	-	-	3	2
C408.4	3	3	2	-	-	2	-	-	-	-	-	-	3	2
C408.5	3	3	2	-	-	2	-	-	-	-	-	-	3	2
C408.6	3	3	2	-	-	2	-	-	-	-	-	-	3	2
C409/ME8712-TECHNICAL SEMINAR														
C409.1	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C409.2	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C409.3	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C409.4	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C409.5	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C409.6	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C410/ME8591-PRINCIPLES OF MANAGEMENT														
C410.1	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C410.2	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C410.3	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C410.4	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C410.5	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C410.6	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C411/IE8693-PRODUCTION PLANNING AND CONTROL (Professional Elective- IV)														
C411.1	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C411.2	3	3	2	-	2	-	-	-	-	-	2	-	3	3


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C411.3	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C411.4	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C411.5	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C411.6	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C412/ME8811-PROJECT WORK														
C412.1	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C412.2	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C412.3	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C412.4	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C412.5	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C412.6	3	2	2	2	2	-	-	-	-	-	-	-	3	-


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REGULATION – 2017 - PG

M.E. – MANUFACTURING ENGINEERING

S.No	COURSE OUTCOME	BT LEVEL
SEMESTER I		
C101/ MA5160-APPLIED PROBABILITY AND STATISTICS		
C101.1	Apply the concept to find moments and moment generating functions of distributions using the definition of a random variable.	K3
C101.2	Find marginal, conditional distribution, statistical average for the standard probability function.	K1
C101.3	For the standard probability function, find the marginal, conditional distribution, statistical average.	K1
C101.4	Find the M.L.E. and fit curves and regression lines using the least squares principle.	K1
C101.5	Small and large samples should be identified, and hypothesis testing should be used.	K1
C101.6	The students should have the ability to use the appropriate and relevant, fundamental and applied mathematical and statistical knowledge, methodologies and modern computational tools.	K1
C102/MF5101-ADVANCES IN MANUFACTURING TECHNOLOGY		
C102.1	To generate useful test results in the machining of a variety of materials.	K3
C102.2	Study hybrid machining techniques using this experience.	K2
C102.3	Use of this experience to solve problems on the shop floor.	K3
C102.4	To gain a better understanding of special machining methods, unconventional machining processes, and micromachining.	K1
C102.5	To gain a better understanding of nano fabrication and rapid prototyping.	K1
C103/MF5102 - COMPUTER INTEGRATED MANUFACTURING SYSTEMS		
C103.1	To achieve useful research results in the field of computer-assisted manufacturing.	K3
C103.2	Make use of your skills to create programming techniques.	K3
C103.3	Use of this expertise to make computer-aided planning more practical	K3
C103.4	For a typical production system, design automated material handling and storage	K3


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	systems.	
C103.5	Study a cellular manufacturing device and a manufacturing cell.	K3
C104/MF5103-ADVANCES IN CASTING & WELDING		
C104.1	Understanding of casting style	K2
C104.2	Understanding of casting metallurgy	K2
C104.3	Understanding of current casting and foundry layout patterns	K2
C104.4	Understanding of welding metallurgy and architecture	K2
C104.5	Understanding of welding most current patterns	K2
C105/ MF5104-METAL CUTTING THEORY AND PRACTICE		
C105.1	Ability to comprehend how material removal processes function.	
C105.2	Understanding of the tool nomenclature scheme	K2
C105.3	Understanding of machining thermal dimensions	K2
C105.4	Awareness of tool materials, tool life, and tool wear	
C105.5	Understanding of machining wear mechanisms and chatter	K2
C106/ MF5003-MICRO MANUFACTURING (Professional Elective-I)		
C106.1	The aim is to familiarize students with the concepts, basic machine tools, and innovations in the micro manufacturing process, as well as research trends in the field.	K1
C106.2	To disseminate information on micromachining using beam energy.	K2
C106.3	to gain knowledge of the nano polishing process used on micro machined components	K2
C106.4	To gain a better understanding of the micro forming and welding processes	K2
C106.5	To gain a better understanding of the metrology and calculation methods used on micro machined surfaces. to learn about the most current developments in the sector	K2
C107/ MF5111-CAD/CAM LAB		
C107.1	In sketcher mode, create complex geometries of system components.	K3
C107.2	Ability to use modeling software to build 2D and 3D part models.	K3
C107.3	Study complex engineering assemblies using acceptable assembly constraints.	K3
C107.4	Ability to Understand the CNC Control in Modern Manufacturing System.	K3
C107.5	Ability to Prepare CNC Part Programming and Produce	K3

C110/MF5201- OPTIMIZATION TECHNIQUES IN MANUFACTURING		
C110.1	The student has a basic understanding of the history of optimization problems, their formulation, classification, and solutions. Application in a variety of engineering fields	K2
C110.2	Ability to approach and solve linear equations in organizational research problems that apply to real-world engineering problems.	K3
C110.3	Ability to approach and solve non-linear equations of operational research problems that are relevant to real-world engineering business problems.	K3
C110.4	Ability to solve various experimental experiments using various optimization methods in order to achieve the best objective function value.	K3
C110.5	The student understands various simulation methods and how to apply them to various experimental experiments in order to achieve the best objective function value.	K2
C111/CM5251- ADVANCES IN METROLOGY AND INSPECTION		
C111.1	Ability to comprehend metrology principles and measurement errors	K1
C111.2	Understanding of the applications of surface roughness calculation	K2
C111.3	Ability to comprehend the fundamentals of interferometer and its significance.	K1
C111.4	Understanding of measurement devices and laser metrology	K2
C111.5	Image processing capability for metrology	K3
C112/ MF5202-THEORY OF METAL FORMING		
C112.1	Enable students to be exposed to the concepts of plasticity and the representation of stress states in various coordinate systems	K3
C112.2	Understanding of the different bulk forming processes that are used	K2
C112.3	Ability to teach students about the various sheet metal forming processes that are used	K1
C112.4	Awareness of powder metallurgy techniques and special forming processes is transferable.	K1
C112.5	Understanding of surface treatment for different processes	K1
C113/MF5203-TOOLING FOR MANUFACTURING		
C113.1	To achieve practical research results in the form of tool design for various manufacturing processes.	K4
C113.2	Ability to demonstrate how metal removal procedures are carried out using tooling	K3
C113.3	Ability to demonstrate how metal forming processes use tooling	K3


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C113.4	To gain a better understanding of the tooling used in metal casting and joining processes	K2
C113.5	To be able to state the state of the art in manufacturing and inspection tooling	K1
C114/ME5009-NON DESTRUCTIVE TESTING & EVALUATION (NDT) (Professional Elective-II)		
C114.1	Be able to List and define different defects that occur in welding shown through Non-Destructive Examination/Destructive Testing.	K1
C114.2	Be able to identify the types of equipment used for each Non-Destructive and Destructive Examination	K1
C114.3	Be able to explain the purpose of the Equipment, Application, and standard techniques required to perform major non-destructive and destructive examinations of weld	K1
C114.4	Be able to go to specific Code, Standard, or Specification related to each testing method	K1
C114.5	Have the knowledge and essential skills to identify strengths and weaknesses in materials used in fabrication	K1
C115/MF5071-LEAN MANUFACTURING (Professional Elective-III)		
C115.1	The student must have a clear understanding of manufacturing production, classification, and lean manufacturing techniques	K2
C115.2	Understanding of the fundamental concepts of job requirements, 5S, and layouts in production and productive maintenance	K2
C115.3	Ability to comprehend the JIT and Kanban implementation approaches with a pull method	K3
C115.4	Understanding of the Autonomy and Poke Yoke Processes in Lean Implementation	K2
C115.5	The student is familiar with a variety of quality principles as well as a structured planning approach	K1
C116/MF5211-AUTOMATION AND METAL FORMING LABORATORY		
C116.1	Ability to design and implement pneumatic circuits using trainer kits	K3
C116.2	Understanding of metal forming techniques and the evaluation of associated parameters	K2
C116.3	Ability to use hydro-pneumatic software to plan and conduct pneumo-hydraulic circuits	K3
C116.4	Ability to assess and understand material strain hardening	K3
C116.5	Understanding of sheet metal formability and shaping techniques	K2

C117/MF5212-TECHNICAL SEMINAR		
C117.1	Develop reading, writing, comprehension, and presentation skills for research papers	K2
C117.2	To assess the breadth of knowledge and coverage of recent areas of manufacturing engineering research	K3
C117.3	To assess the consistency of presentation content (PPT/OHP) on recent manufacturing engineering research topics	K1
C117.4	To improve the student's communication skills by presenting topics on recent engineering/technology advances	K3
C117.5	To establish an analysis of current research problems and developments	K2
SEMESTER III		
C201/MF5014-MANUFACTURING MANAGEMENT (Professional Elective-IV)		
C201.1	The student must have a basic understanding of manufacturing plant layout, classification, and material handling techniques.	K2
C201.2	Understanding of the fundamental concepts of motion economy, as well as the tools and methods used in work studies and measurements	K2
C201.3	Understanding of process planning and forecasting models is a must	K2
C201.4	Understanding of project management and scheduling methods	K2
C201.5	Personnel management and marketing methods have been studied and understood by the student.	K3
C202/MF5072-RESEARCH METHODOLOGY (Professional Elective-V)		
C202.1	Understand some basic concepts of research and its methodologies	K2
C202.2	Identify appropriate research topics	K1
C202.3	Select and define appropriate research problem and parameters	K1
C202.4	Prepare a project proposal, write a research report and thesis, write a research proposal (grants)	K2
C202.5	organize and conduct research (advanced project) in a more appropriate manner	K3
C203/MF5016-MATERIAL TESTING & CHARACTERIZATION TECHNIQUES (Professional Elective-VI)		
C203.1	To determine the grain size and classify the crystal structure.	K2
C203.2	Students will be able to learn about electron microscopic characterization techniques.	K1
C203.3	Chemical and thermal analysis approaches include the ability to comprehend their working concepts and instrumentation. The characterization analysis must	K2


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	be deciphered	
C203.4	The aim of this course is to learn how to perform mechanical testing under static loading and to recognise the various testing codes for metallic and composite materials	K1
C203.5	Mechanical research under complex loading conditions: ability to comprehend	K3
C204/MF5311-PROJECT PHASE - I		
C204.1	Choose a subject in Manufacturing Engineering's advanced areas. Determine how to conduct tests and what materials to use	K1
C204.2	Review the literature to find differences and describe the work's goals and scoop	K1
C204.3	Study and incorporate new social-benefit concepts	K3
C204.4	Analyze and explain the findings in order to draw sound conclusions	K3
C204.5	Restructure procedures with a focus on culture, the community, and ethics	K3
SEMESTER IV		
C210/MF5411-PROJECT PHASE - II		
C210.1	Determine a subject in advanced Manufacturing Engineering. Determine experimental methods and materials	K1
C210.2	Review the literature to find differences and describe the work's goals and scope	K2
C210.3	Restructure procedures with a focus on culture, the community, and ethics	K2
C210.4	Study and incorporate new social-benefit concepts	K3
C210.5	Analyze and explain the findings in order to draw sound conclusions	K3

S.NO	CO-PO MAPPING													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C101/ MA5160-APPLIED PROBABILITY AND STATISTICS														
C101.1	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.2	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.3	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.4	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C101.5	3	2	-	-	-	-	-	-	-	-	-	-	2	2


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C101.6	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C102/MF5101-ADVANCES IN MANUFACTURING TECHNOLOGY														
C102.1	2	2	-	-	-	-	-	-	-	-	-	-	3	2
C102.2	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C102.3	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C102.4	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C102.5	2	3	-	-	-	-	-	-	-	-	-	-	2	2
C103/MF5102 - COMPUTER INTEGRATED MANUFACTURING SYSTEMS														
C103.1	3	2	2	-	-	-	-	-	-	-	-	-	3	3
C103.2	2	3	2	-	-	-	-	-	-	-	-	-	3	3
C103.3	2	2	2	-	-	-	-	-	-	-	-	-	2	2
C103.4	3	2	2	-	-	-	-	-	-	-	-	-	2	2
C103.5	2	2	2	-	-	-	-	-	-	-	-	-	2	2
C104/MF5103-ADVANCES IN CASTING & WELDING														
C104.1	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C104.2	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C104.3	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C104.4	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C104.5	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C105/ MF5104-METAL CUTTING THEORY AND PRACTICE														
C105.1	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C105.2	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C105.3	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C105.4	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C105.5	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C106/ MF5003-MICRO MANUFACTURING (Professional Elective-I)														
C106.1	3	3	2	-	-	-	-	-	-	-	-	-	2	2
C106.2	2	2	-	-	-	-	-	-	-	-	-	-	2	2


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C106.3	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C106.4	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C106.5	3	3	-	-	-	-	-	-	-	-	-	-	3	3
C107/ MF5111-CAD/CAM LAB														
C107.1	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C107.2	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C107.3	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C107.4	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C107.5	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C110/MF5201- OPTIMIZATION TECHNIQUES IN MANUFACTURING														
C110.1	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C110.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C110.3	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C110.4	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C110.5	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C111/CM5251- ADVANCES IN METROLOGY AND INSPECTION														
C111.1	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C111.2	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C111.3	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C111.4	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C111.5	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C112/ MF5202-THEORY OF METAL FORMING														
C112.1	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C112.2	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C112.3	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C112.4	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C112.5	3	2	-	-	-	-	-	-	-	-	-	-	3	2


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C113/MF5203-TOOLING FOR MANUFACTURING														
C113.1	2	2	3	-	-	-	-	-	-	-	-	-	3	2
C113.2	2	2	3	-	-	-	-	-	-	-	-	-	3	2
C113.3	2	2	3	-	-	-	-	-	-	-	-	-	3	2
C113.4	2	2	3	-	-	-	-	-	-	-	-	-	3	2
C113.5	2	2	3	-	-	-	-	-	-	-	-	-	3	2
C114/ME5009-NON DESTRUCTIVE TESTING & EVALUATION (NDT) (Professional Elective-II)														
C114.1	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C114.2	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C114.3	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C114.4	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C114.5	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C115/MF5071-LEAN MANUFACTURING (Professional Elective-III)														
C115.1	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C115.2	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C115.3	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C115.4	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C115.5	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C116/MF5211-AUTOMATION AND METAL FORMING LABORATORY														
C116.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C116.2	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C116.3	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C116.4	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C116.5	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C117/MF5212-TECHNICAL SEMINAR														
C117.1	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C117.2	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C117.3	3	3	2	2	3	-	-	-	-	-	-	-	3	2


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C117.4	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C117.5	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C201/MF5014-MANUFACTURING MANAGEMENT (Professional Elective-IV)														
C201.1	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C201.2	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C201.3	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C201.4	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C201.5	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C202/MF5072-RESEARCH METHODOLOGY (Professional Elective-V)														
C202.1	2	3	2	-	-	-	-	-	-	-	-	-	2	2
C202.2	2	3	2	-	-	-	-	-	-	-	-	-	2	2
C202.3	2	3	2	-	-	-	-	-	-	-	-	-	2	2
C202.4	2	3	2	-	-	-	-	-	-	-	-	-	2	2
C202.5	2	3	2	-	-	-	-	-	-	-	-	-	2	2
C203/MF5016-MATERIAL TESTING & CHARACTERIZATION TECHNIQUES (Professional Elective-VI)														
C203.1	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C203.2	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C203.3	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C203.4	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C203.5	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C204/MF5311-PROJECT PHASE – I														
C204.1	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C204.2	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C204.3	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C204.4	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C204.5	3	3	3	3	3	2	3	2	3	3	3	3	3	3


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C210/MF5411-PROJECT PHASE – II

C210.1	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C210.2	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C210.3	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C210.4	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C210.5	3	3	3	3	3	2	3	2	3	3	3	3	3	3


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REGULATION - 2017

S.NO	COURSE OUTCOME	BT LEVEL
SEMESTER I		
C101 BA 5101 ECONOMIC ANALYSIS FOR BUSINESS		
C101.1	Analyze the basic fundamentals economic problems and the behavior by understanding the basic concepts of micro and macro economies.	K2
C101.2	Understanding of the standard theoretical analysis of consumer and producer behaviour	K2
C101.3	Design competition strategies, and market environment according to the natures of products and the structures of the markets.	K3
C101.4	Integrate the concept of macroeconomic aggregates and output decisions of firms under various national income.	K3
C101.5	Make optimal business decisions by integrating the concepts of Demand and supply of money.	K3
C102 BA5102 PRINCIPLES OF MANAGEMENT		
C102.1	Evaluate the context for taking managerial actions of planning, organizing and controlling .	K1
C102.2	Assess situation, including opportunities and threats that will impact management of an organization	K1
C102.3	Integrate management principles into management practices	K2
C102.4	The students should be able to describe and discuss the elements of effective management,	K2
C102.5	Discuss and apply the planning, organizing and control processes, iii) describe various theories related to the development of leadership skills, motivation techniques, team work and effective communication	K3
C103 BA5103 ACCOUNTING FOR MANAGEMENT		
C103.1	Prepare various costing schedules where an analysis of cost classification, behaviour, and types.	K1
C103.2	Analyze cost-volume-profit techniques to determine optimal managerial decisions.	K3
C103.3	Apply and analyze different types of activity-based management tools through the preparation of estimates	K3
C103.4	Possess a managerial outlook at accounts	K3


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C103.5	Acquire a reasonable knowledge in accounts. Analysis and evaluate financial statements.	K3
C104 BA5104 Legal Aspects Of Business		
C104.1	Acquire Basic knowledge and understanding of the principles governing the business organization.	K1
C104.2	Ability to analyze legal issues facing a company with the knowledge gained.	K3
C104.3	Comprehend the key concepts of business law relating to contract formation, the selection of a business organization etc	K2
C104.4	Legal insight will be established in the business practices according to the situation of changing environment	K2
C104.5	Analyse the knowledge of Legal perspective and its practices to improvise the business	K3
C105 BA5105 ORGANIZATIONAL BEHAVIOUR		
C105.1	Students will have a better understanding of human behavior in organization. They will know the framework for managing individual and group performance.	K2
C105.2	Analyze how these theories and empirical evidence can help to understand contemporary organizational issues.	K3
C105.3	Apply theories to practical problems in organizations in a critical manner.	K3
C105.4	Comprehend some of the main theories of Organizational Behavior	K1
C105.5	Analyse an overview of theories and practices in organizational behavior in individual, group and organizational level.	K3
C106 BA5106 STATISTICS FOR MANAGEMENT		
C106.1	Have a fundamental knowledge of the basic statistics and probability distribution concepts.	K1
C106.2	Aware of the problem and know how to apply the normal, t-distribution and F-distribution and one-way and two-way analysis of variance for hypothesis testing.	K1
C106.3	Find the application of correlation, regression and time series analysis in various aspects.	K2
C206.4	To facilitate objective solutions in business decision making under subjective conditions	K2
C206.5	Students to solve the problems by understanding the basic concepts and learn the applications of statistics in business decision making.	K3
C107 BA5107 TOTAL QUALITY MANAGEMENT		
C107.1	Apply quality philosophies and tools to facilitate continuous improvement and ensure customer delight.	K3

C107.2	Familiar the principles of total quality management and peculiarities of their implementation	K1
C107.3	Use quality management methods analyzing and solving problems of organization.	K3
C107.4	To use new concepts of TQM Process of continuous improvement and learning	K2
C107.5	To create an awareness of fundamental principles , significance and implementation of quality management.	K1
C108 BA5108 SPOKEN AND WRITTEN COMMUNICATION		
C108.1	Get into the habit of writing regularly.	K1
C108.2	Express themselves in different genres of writing from creative to critical to factual writing.	K2
C108.3	Take part in print and online media communication.	K2
C108.4	Read quite widely to acquire a style of writing	K2
C108.5	Identify their area of strengths and weaknesses in writing	K2
C108.6	Speak confidently with any speakers of English, including native speakers. Speak effortlessly in different contexts – informal and formal	K3
SEMESTER II		
C201 BA5201 APPLIED OPERATIONS RESEARCH		
C201.1	Understand and analyze managerial problems in industry so that they are able to use resources more effectively.	K2
C201.2	Specialized linear programming problems like the transportation and assignment Problems.	K2
C201.3	Understand the applications of basic methods for and challenges in integer programming and the concepts of game theory to know how they are used in modeling and analyzing an interactive situation.	K2
C201.4	Understand the characteristics of different types of decision making environments and the appropriate decision making approaches and tools to be used in each type.	K2
C201.5	Understand basic characteristic features of a queuing system and acquire in analyzing queuing models and analyzing the problem of replacement when machines, equipment become less effective using the replacement models.	K2
C202 BA5202 BUSINESS RESEARCH METHODS		
C202.1	Remembering the types of research, its objectives and how the concept theory plays its role in research.	K1

C202.2	Understanding the different types of research designs, types of validity and various measurement techniques.	K2
C202.3	Knowledge about the various methods of data collection and how sample and sample size could be determined.	K3
C202.4	Possessing the statistical techniques and different analytical methods for research.	K3
C202.5	Knowing the needs and values of ethical research and how it could be implemented in report writing.	K3
C203 BA5203 FINANCIAL MANAGEMENT		
C203.1	Understanding basic concepts of financial management such as decisions and functions of financial management. And to learn meaning and estimations of time value of money, valuation of securities and risk and return of securities.	K2
C203.2	Evaluate long term investments using techniques like payback period, accounting rate of return, net present value, profitability index and internal rate of return and to estimate specific cost of capital and weighted average cost of capital.	K2
C203.3	concepts of dividend and examine impact of dividend policy of a firm.	K2
C203.4	Estimate and evaluate different components of working capital such as Receivables, payables, inventory, cash, etc.,	K3
C203.5	Exposure and knowledge of long term sources of fund namely share, debenture, term loans, private equity, venture capital, and so on.	K3
C204 BA5204 HUMAN RESOURCE MANAGEMENT		
C204.1	Knowledge about the evolution of human resource management, its roles, policies and the application of computers in human resource management	K1
C204.2	Understanding the need for human resource requirement and the process of recruitment and selection	K2
C204.3	Knowing the training methods, development programmes and the concepts of knowledge management	K1
C204.4	Insight into the concept of motivation, its theories and techniques and the concept of career management	K2
C204.5	Understanding the necessity of performance evaluation and the importance, process and methods of control system	K2
C205 BA5205 Information Management		
C205.1	Knowledge about the basic concepts of information technology and functional information systems	K1
C205.2	Remembering the tools for system analysis and its application in information	K1

	management	
C205.3	Familiarity with the database management systems and the concepts like data warehousing and data mart	K2
C205.4	Understanding the need for security, testing process, knowing the concepts of disaster management, computer crimes etc., and ethics in Information technology.	K2
C205.5	Understanding the role of e- commerce in information management and knowledge about data mining and cloud computing	K2
C206 BA5206 OPERATIONS MANAGEMENT		
C206.1	Familiarize the basics of operations management, its importance in transformation process, development over years in a system perspective by studying the functions, recent trends, future challenges and to frame strategy to achieve it..	K1
C206.2	Knowing the various quantitative and qualitative forecasting methods and make planning of capacity, facility location, facility layout and operations based on that.	K1
C206.3	Identify the factors to be considered and the various approaches to be followed in designing the product, process and the work; and the method to measure and improve productivity.	K2
C206.4	Understand the need and importance of managing materials by planning and purchasing the right material; and managing the inventory for best output.	K2
C206.5	Knowing various scheduling techniques like PERT and CPM and also the various methods to schedule and manage the projects.	K2
C207 BA5207 MARKETING MANAGEMENT		
C207.1	Understanding of ideas and nuances of marketing; Define the business environment and priorities of marketing. And to distinguish the various marketing practices in serving the needs of organizations versus consumer goods and to explain the key core concepts of marketing globally.	K2
C207.2	Formulate and manage the industrial market and consumer marketing strategies including all key components and to understand the basics of service marketing and competitor analysis with Marketing mix.	K2
C207.3	Explain the techniques to conduct market analysis practices including market segmentation and targeting and apply the 4 P's in the industrial and consumer market.	K3
C207.4	Compare and contrast different perspectives that characterize the study of consumer behavior and apply theories and Models of consumer behavior to the formulation of effective marketing strategy.	K3

C207.5	consumer behavior and also to understand the role of Marketing information systems, Online marketing and the impact of Ethics in business.	K2
C208 BA5208 DATA ANALYSIS AND BUSINESS MODELLING		
C208.1	Determine the aspects of creating spreadsheet, performing calculations, formatting, some very widely used formulas	K1
C208.2	Compute and interpret the results of Bi variate and Multivariate Regression and Correlation Analysis, for forecasting and also perform ANOVA and F-test.	K2
C208.3	Understand the various alternatives available for investment and make sound investment decisions in the context of Analysis	K2
C208.4	Build an understanding of the fundamental concepts of computer networking.	K2
C208.5	Familiarity with the basic protocols of networking Models and how they can be used to assist in network design and implementation.	K2
SEMESTER III		
C301 BA5301 INTERNATIONAL BUSINESS MANAGEMENT		
C301.1	Knowing the nature, factors and advantages of International business and its business Environment.	K1
C301.2	Understanding the roles of GATT/WTO, Regional Trade block and the theories of international trade.	K2
C301.3	Familiarity with the concepts of strategic compulsion, strategic options, controlling of international business and its performance evaluation.	K2
C301.4	Understanding the necessity of make or buy decision, concepts of product development and criteria in selecting and training the expatriate managers.	K2
C301.5	Awareness about the conflict management, the disadvantages and ethical issues of international business.	K2
C302 BA5302 STRATEGIC MANAGEMENT		
C302.1	Determine Understanding the conceptual framework, process, objectives and goals of strategic management.	K1
C302.2	Knowing the basic concept of competitive advantage and its impact in external and internal business environment.	K1
C302.3	Analyzing the generic strategic alternatives, corporate strategy, diversification and strategic alliances.	K3
C302.4	Implementing the strategic processes, strategic change, designing organizational structure and the techniques of strategic evaluation and control.	K3
C302.5	Awareness about the strategic issues for non-profit organization and understanding the new business models and strategies for internet economy.	K3


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C303 BA5001 BRAND MANAGEMENT		
C303.1	Developing a basic understanding of Branding its functions, Significance and various types of brands.	K2
C303.2	Highlighting the strategic issues in branding. And also to study the branding strategies used by companies to compete with foreign brands.	K2
C303.3	Develop hands-on abilities establishing the key foundations of a strong brand image building, brand loyalty programmes, brand promotion, and brand personality	K2
C303.4	Understanding of brand adoption practices and basic issues in brand extensions.	K2
C303.5	Develop critical perspectives in evaluating research in branding and applying them in strategic management of brands in creative industries, traditional and non-traditional tools for measuring brand strength – both qualitative and quantitative measures..	K2
C304 BA5006 SERVICES MARKETING		
C304.1	Familiarize role of services in economy, nature, scope and characteristics, of services marketing, and to understand the issues related to services marketing	K1
C304.2	Analyze the service market potential, to understand the Classification of services and also to understand service market segmentation, targeting and positioning.	K2
C304.3	Understand to concept service life cycle and new service development and to construct Service Blue Printing, to analyze service quality of service organization through SERVQUAL and Service Quality function development	K3
C304.4	Explain the concept of pricing of services, its methods. To understand the service marketing triangle and Integrated Service marketing communication	K3
C304.5	Apply service marketing strategies for health, Hospitality, Tourism, Financial, Logistics, Educational, Entertainment & public utility Information technique Services .	K3
C305 BA5005 RETAIL MARKETING		
C305.1	Explain the central role of retail in industrialised societies, and the impact of key market/retail trends upon this sector in the local and global contexts	K3
C305.2	Identify the key stakeholders and the roles/responsibilities of retail towards these stakeholders	K3
C305.3	Understand and apply appropriate frameworks to develop high level retail marketing strategy, and identify the role of marketing strategies in the building of brand equity and shareholder value in the retail industry	K2
C305.4	Evaluate the implementation of marketing strategy through the retail mix – including product and merchandise mix, pricing, location and store- design, promotions, and store management - to improve the total customer experience	K2


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	and retailer market competitiveness.	
C305.5	Interpret retail problems and be capable of critically evaluating and applying appropriate retail management models and theories to generate strategic and tactical solutions	K3
C306 BA5008 BANKING FINANCIAL SERVICES MANAGEMENT		
C306.1	Familiarize overview of Indian Banking System, its function, acts governing the function of Indian banking system and the bank financial statement.	K1
C306.2	Price various types of loans and deposits proposed by banks to various prospective Borrowers and depositors respectively.	K1
C306.3	Identify the various risk profiles and evaluate the performance of banks and manage the asset liabilities of the bank.	K2
C306.4	Understand the need and importance of mergers and diversification of bank and the methods to evaluate the performance of banking.	K2
C306.5	Understand e-banking and the threats that go with it.	K2
C307 BA5022 MERCHANT BANKING AND FINANCIAL SERVICES		
C307.1	Apply corporate finance concepts, principles and theories to the basic financial problems of the industry.	K3
C307.2	Apply best practice tools and methods in investment management to different settings	K3
C307.3	Explain the capital structure and analyze how financing decisions influence firm value.	K2
C307.4	Describe how dividends are paid and explain factors that affect a firm's dividend policy.	K3
C307.5	Evaluate different stakeholders' roles and significance in relation to corporate Governance	K1
C308 BA5012 SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT		
C308.1	Understanding the basic environment of Indian financial systems especially investment options and their risk and return.	K2
C308.2	Understanding the mechanism and functioning of primary and secondary markets of capital market and intermediaries	K2
C308.3	Analyze and predict securities risk and return using fundamental analysis.	K3
C308.4	Skill to predict share price movements and make decisions using different methods of technical analysis	K2
C308.5	Analyze, evaluate and manage portfolio of securities based on various techniques.	K3

C309 BA5014 ENTREPRENEURSHIP DEVELOPMENT		
C309.1	Familiarize overview of the competencies, personality traits and characteristics of Entrepreneurs.	K1
C309.2	Understand the Environmental factors affecting entrepreneurship and central and state government policies for SME's	K2
C309.3	Understand about prefeasibility, feasibility, project preparation for starting a business enterprise.	K2
C309.4	Understand the various functions areas of Management ie Finance Marketing, HR and Operations management.	K2
C309.5	Understand monitoring of business, preventing of sickness, rehabilitation of business Enterprises.	K2
C310 BA5015 INDUSTRIAL RELATIONS AND LABOUR WELFARE		
C310.1	Developing an understanding of ideas and nuances of Industrial relation; Define Concepts, trends dominated I.R. concept in early stages, causes of Disputes improving I.R, strengthening Trade unions & Corporate codes of conduct on workers.	K2
C310.2	Identify the major causes for industrial conflicts, how Collective Bargaining, negotiation, adjudication and arbitration helps to reduce conflict. Techniques can be implemented to bring Industrial Peace administrative machinery set up for resolving disputes.	K2
C310.3	Explain the labour welfare, kinds of training available for workers, voluntary welfare measures, How do labour welfare officers can prevent the industrial conflicts and analyse the effective strategy to improve the labour management relations in India	K2
C310.4	Social security and social assistance provided for child labor, women labour, agriculture labour , contract labour, knowledge workers and physically challenged people. various Acts, which regulate labour and employment in India	K2
C310.5	Explain the statutory health, welfare and safety provisions, find the consequences of work stress, preventive and curative measures of occupational diseases. causes of accidents in a factory and discuss the need for counseling. Major psychological problems of workers in factories	K2
C311 BA5017 MANAGERIAL BEHAVIOUR AND EFFECTIVENESS		
C311.1	To understand the various roles of a manager for effective performance by comparing the different models in various levels of management. To understand the various dimensions of jobs performed by the employees in an organization.	K2
C311.2	Knowing the methods of identifying the managerial talents, followed by recruitment, selection and the various appraisal measures which would help in	K1


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	designing the managerial job.	
C311.3	Understanding the importance of managerial effectiveness and the techniques for bridging the gap.	K2
C311.4	Awareness about the environmental issues in organizational climate, leadership and group influences.	K1
C311.5	Understanding the managerial skills like self development, negotiation skills, creativity and innovation for developing the winning edge.	K2
C312 BA5020 ADVANCED DATABASE MANAGEMENT SYSTEM		
C312.1	To provide insight into the various types of databases used in different organisations and to provide the applications of different databases for various purposes.	K1
C312.2	To understand the steps in database query processing with the objective of accessing the data from the database. To provide the importance of data security and data recovery process followed by different organisation.	K2
C312.3	To understand the concepts of databases used in different locations with the intricacies of data access and providing data security in various networks. To understand the importance of data concurrency and the reliability of data used at various levels of management.	K2
C312.4	To provide insight into Object Oriented Database structure with different models to store and retrieve the datas from different modes in an organisation.	K1
C312.5	To understand the recent developments in Database Technology with various tools and techniques for better usage of database. To understand the various connectivity process for effective date access.	K2
C313 BA5024 E- BUSINESS MANAGEMENT		
C313.1	Ability to understand basic business models on the web and the methods to generate revenue (Knowledge and Understanding)	K2
C313.2	To attain a comprehensive level of understanding of the use of information and communication technologies for conducting and supporting business activities (Problem solving and analysis)	K1
C313.3	To attain a clear understanding of the strategic impacts of use of electronic tools and their effects on the way business activities are done (Problem solving)	K2
C313.4	To understand the different ways of online payment system and their security (Critical thinking)	K2
C313.5	To understand and critically analyze legal, ethical and privacy issues in doing business online (Thinking and analysis)	K2
C314 BA5024 ENTERPRISE RESOURCE PLANNING		
C314.1	Identify the important business functions provided by typical business software	K2

	such as enterprise resource planning and Business Process management	
C314.2	Describe basic concepts of ERP software solutions for best business practices.	K2
C314.3	Design the ERP implementation strategies	K2
C314.4	Create reengineered business processes for successful ERP implementation.	K2
C314.5	To understand the basics in business intelligence (BI), data mining (DM), and knowledge discovery in databases	K2
SEMESTER IV		
BA5411 PROJECT WORK		
C401.1	Understand the problem statement in a various domain	K3
C401.2	Identify the problem and do the literature survey	K3
C401.3	Design a module for solving a problem in the respective area.	K3
C401.4	Implement a module for solving a problem identified.	K3
C401.5	Evaluate the module results and make improvements.	K3

S.NO	CO-PO MAPPING											
	PG101 BA5102 PRINCIPLES OF MANAGEMENT											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PG101.1	2	2	2	-	2	-	-	-	-	-	-	2
PG101.2	2	2	-	2	-	-	-	-	-	-	-	2
PG101.3	-	2	-	2	2	2	2	-	2	-	-	2
PG101.4	2	2	-	2	-	-	-	-	-	-	-	2
PG101.5	2	-	-	-	-	2	2	-	2	3	-	2
PG101.6	2	-	-	-	3	2	2	-	2	3	-	2
PG 102 BA5103 ACCOUNTING FOR MANAGEMENT												
PG102.1	2	2	2		-		-	-	-	-	-	2
PG102.2	2	3	2	-	-	-	-	-	-	-	-	2
PG102.3	2	2	2	-	-	-	-	-	-	2	-	2


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PG102.4	2	2	3	2	2	-	-	2	-	2	-	2
PG102.5	2	3	2	2	-	2	-	-	-	-	-	2
PG102.6	2	2	2	2	2	2	-	2	-	-	2	2
PG 103 BA 5101 ECONOMIC ANALYSIS FOR BUSINESS												
PG103.1	3	2	2	3	2	2	-	-	-	-	-	3
PG103.2	3	3	3	2	-	2	-	-	-	-	-	3
PG103.3	3	2	-	-	-	-	-	-	-	-	-	3
PG103.4	3	3	3	3	2	2	-	-	-	-	-	2
PG103.5	3	2	3	3	2	3	2	-	-	-	-	2
PG103.6	3	2	3	3	2	3	2	-	-	-	-	2
PG 104 BA5104 LEGAL ASPECTS OF BUSINESS												
PG104.1	2	2	2	2	2	-	3	-	2	-	2	3
PG104.2	2	2	2	2	2	-	-	-	2	-	2	2
PG104.3	2	2	2	2	2	-	2	-	2	-	2	2
PG104.4	2	2	2	2	2	-	2	-	2	-	2	2
PG104.5	2	2	2	2	2	-	2	2	2	-	2	2
PG104.6	2	2	2	2	2	-	2	2	2	-	2	2
PG105 BA5105 ORGANIZATIONAL BEHAVIOUR												
PG105.1	3	2	-	-	-	-	-	-	-	-	-	-
PG105.2	3	2	2	-	-	-	-	-	-	-	-	-
PG105.3	3	2	2	-	-	-	-	-	-	-	-	-
PG105.4	3	2	2	2	2	-	-	-	-	-	-	-
PG105.5	3	2	2	2	2	2	-	2	-	-	-	-
PG105.6	3	2	2	2	2	2	-	2	-	-	-	-
PG106 BA5106 STATISTICS FOR MANAGEMENT												
PG106.1	2	2	2	2	2	-	-	-	-	2	3	2
PG106.2	2	2	2	2	2	-	-	-	-	3	2	2
PG106.3	2	2	2	2	2	-	-	-	-	2	2	2
PG106.4	2	2	2	2	3	-	-	-	-	2	2	2


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PG106.5				2	2	-	-	-	-	3	2	2
PG106.6				2	3	-	-	-	-	2	2	2
PG107 BA5107 TOTAL QUALITY MANAGEMENT												
PG107.1	3	-	-	-	-	-	-	-	-	-	-	-
PG107.2	3	3	3	2	-	-	-	-	-	-	-	-
PG107.3	3	3	3	2	-	-	-	-	-	-	-	-
PG107.4	3	2	3	2	-	-	-	-	-	-	-	-
PG107.5	3	2	3	2	-	-	-	-	-	-	-	-
PG107.6	3	2	3	2	-	-	-	-	-	-	-	-
PG 108 BA 5111 SPOKEN AND WRITTEN COMMUNICATION												
PG108.1	3	2	3	-	-	-	-	-	3	2	2	2
PG108.2	3	2	2	-	-	-	-	-	3	2	2	3
PG108.3	3	3	2	-	-	-	-	-	3	2	2	3
PG108.4	3	2	2	-	-	-	-	-	3	2	2	2
PG108.5	3	3	2	-	-	-	-	-	3	2	2	3
PG108.6	3	2	2	-	-	-	-	-	3	2	2	2
PG 201 BA5201 APPLIED OPERATIONS RESEARCH												
PG201.1	2	-	2	2	3	-	2	2	3	2	3	2
PG201.2	2	-	2	3	3	-	2	2	2	2	3	2
PG201.3	2	-	2	2	2	-	2	2	2	2	3	2
PG201.4	2	-	2	2	3	-	2	2	3	2	3	2
PG201.5	2	-	2	3	3	-	2	2	2	2	3	2
PG201.6	2	-	2	2	2	-	2	2	2	2	3	2
PG202 BA5202 BUSINESS RESEARCH METHODS												
PG202.1	2	2	-	-	-	2	2	-	2	3	-	2
PG202.2	2	3	-	-	-	2	2	-	2	3	-	2
PG202.3	2	2	-	-	-	2	2	-	2	3	-	2
PG202.4	2	2	-	-	-	2	2	-	2	3	-	2
PG202.5	2	3	-	-	-	2	2	-	2	3	-	2


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PG202.6	2	3	-	-	-	2	2	-	2	3	-	2
PG203 BA5203 FINANCIAL MANAGEMENT												
PG203.1	3	3	3	3	2	2	-	-		2	-	-
PG203.2	2	2	-	-	-	2	-	-	-	-	-	-
PG203.3	2	2	-	-	-	2	-	2	-	2	-	2
PG203.4	2	2	-	-	2	-	-	-	-	-	-	-
PG203.5	2	2	-	-	2	-	-	-	-	2	2	-
PF203.5	2	2	-	2	2	2	-	-	-	2	-	2
PG 204 BA5204 HUMAN RESOURCE MANAGEMENT												
PG204.1	2	2	-	-	-	-	-	-	-	-	-	-
PG204.2	2	2	-	-	-	2	-	-	-	3	-	2
PG204.3	2	2	-	3	-	2	-	-	-	3	-	2
PG204.4	2	2	-	3	-	2	-	-	-	3	-	2
PG204.5	2	2	-	-	2	2	-	-	2	3	-	3
PG204.6	2	2	-	-	2	2	-	-	2	3	-	3
PG 205 BA5205 INFORMATION MANAGEMENT												
PG205.1	2	2	2	-	2	-	-	-	-	-	2	2
PG205.2	2	-	2	-	2	-	-	-	-	-	2	2
PG205.3	2	-	2	2	2	2	-	-	-	-	2	2
PG205.4	2	-	2	-	2	2	-	-	-	-	2	2
PG205.5	2	-	2	-	2	2	2	-	2	-	2	2
PG205.6	2	-	2	2	2	2	2	-	2	-	2	2
PG 206 BA5206 OPERATIONS MANAGEMENT												
PG206.1	2	2	2	-	2	-	-	-	-	-	-	2
PG206.2	2	2	2	-	2	-	-	-	-	-	-	2
PG206.3	2	2	2	-	2	-	-	-	-	-	-	2
PG206.4	2	2	2	-	2	-	-	-	-	-	-	2
PG206.5	1	2	2	-	2	-	-	-	-	-	-	2
PG206.6	2	2	2	-	2	-	-	-	-	-	-	2


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PG 207 BA5207 MARKETING MANAGEMENT												
PG207.1	2	2	-	-	2	-	-	-	-	-	-	2
PG207.2	2	2	2	-	2	-	-	-	-	-	-	2
PG207.3	2	2	2	-	2	-	-	-	-	-	-	2
PG207.4	2	2	2	-	2	-	-	-	-	-	-	2
PG207.5	2	2	2	-	2	-	-	-	-	-	-	2
PG207.6	2	2	2	-	2	-	-	-	-	-	-	2
PG 208 BA5211 DATA ANALYSIS AND BUSINESS MODELLING												
PG208.1	2	-	2	2	3	-	2	2	3	2	3	2
PG208.2	2	-	2	3	3	-	2	2	2	2	3	2
PG208.3	2	-	2	2	2	-	2	2	2	2	3	2
PG208.4	2	-	2	2	3	-	2	2	3	2	3	2
PG208.5	2	-	2	3	3	-	2	2	2	2	3	2
PG209 BA5311 SUMMER TRAINING												
PG 209.1	3	-	-	-	-	-	-	-	-	-	-	-
PG301 BA5302 STRATEGIC MANAGEMENT												
PG301.1	2	2	-	-	-	2	-	2	2	2	-	2
PG301.2	2	2	-	-	-	-	-	-	-	3	-	2
PG301.3	2	2	-	-	-	-	-	-	-	2	-	2
PG301.4	2	2	-	-	-	-	2	-	-	2	2	2
PG301.5	2	2	-	-	-	-	-	-	-	3	-	2
PG301.6	2	2	-	-	-	-	-	2	-	2	-	2
PG 302 BA5301 INTERNATIONAL BUSINESS MANAGEMENT												
PG302.1	2	2	-	-	-	-	-	-	-	-	-	-
PG302.2	2	2	-	-	-	-	-	-	-	-	-	-
PG302.3	2	2	-	-	-	-	-	-	-	-	-	-
PG302.4	2	2	-	-	-	-	-	-	-	-	-	-
PG302.5	2	2	-	-	-	-	-	-	-	-	-	-
PG302.6	2	2	-	-	-	-	-	-	-	-	-	-


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PG 303 BA5001 BRAND MANAGEMENT												
PG303.1	2	2	-	-	-	2	-	2	2	2	-	2
PG303.2	2	2	-	-	-	-	-	-	-	3	-	2
PG303.3	2	-	-	-	2	-	-	-	-	2	-	2
PG303.4	2	-	-	-	-	-	2	-	-	2	2	2
PG303.5	2	-	-	-	-	-	-	-	-	3	-	2
PG303.6	2	-	-	-	-	-	-	2	-	2	-	2
PG 304 BA5301 BA5005 RETAIL MARKETING												
PG304.1	2	2	-	-	-	-	-	-	-	-	-	-
PG304.2	2	2	-	-	-	-	-	-	-	-	-	-
PG304.3	2	2	-	-	-	-	-	-	-	-	-	-
PG304.4	2	2	-	-	-	-	-	-	-	-	-	-
PG304.5	2	2	-	-	-	-	-	-	-	-	-	-
PG304.6	2	2	2	-	-	-	-	-	-	-	-	-
PG305 BA5006 SERVICES MARKETING												
PG305.1	3	2	3	2	-	2	-	2	2	2	-	2
PG305.2	2	3	3	2	-	-	-	-	-	3	-	2
PG305.3	3	3	3	2	2	-	-	-	-	2	-	2
PG305.4	2	3	3	2	-	-	2	-	-	2	2	2
PG305.5	3	2	3	2	-	-	-	-	-	3	-	2
PG305.6	3	3	3	2	-	-	-	2	-	2	-	2

PG 306 BA5008 BANKING FINANCIAL SERVICES MANAGEMENT												
PG306.1	2	3	-	-	-	-	-	-	-	-	-	-
PG306.2	2	2	-	-	-	-	-	-	-	-	-	-
PG306.3	2	2	-	-	-	-	-	-	-	-	-	-
PG306.4	2	2	-	-	-	-	-	-	-	-	-	-
PG306.5	3	3	-	-	-	-	-	-	-	-	-	-
PG306.6	3	3	-	-	-	-	-	-	-	-	-	-


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PG 307 BA5011 MERCHANT BANKING AND FINANCIAL SERVICES												
PG307.1	3	2	2	3	-	2	-	2	2	2	-	2
PG307.2	2	2	2	2	-	-	-	-	-	3	-	2
PG307.3	3	2	2	2	2	-	-	-	-	2	-	2
PG307.4	2	2	2	2	-	-	2	-	-	2	2	2
PG307.5	3	2	2	2	-	-	-	-	-	3	-	2
PG307.6	3	2	2	2	-	-	-	2	-	2	-	2
PG 308 BA5012 SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT												
PG308.1	3	-	-	-	-	-	-	-	-	-	-	-
PG308.2	3	3	3	2	-	-	-	-	-	-	-	-
PG308.3	3	3	3	2	-	-	-	-	-	-	-	-
PG308.4	3	2	3	2	-	-	-	-	-	-	-	-
PG308.5	3	2	3	2	-	-	-	-	-	-	-	-
PG308.6	3	2	3	2	-	-	-	-	-	-	-	-
PG 309 BA5015 INDUSTRIAL RELATIONS AND LABOUR WELFARE												
PG309.1	3	2	3	2	-	2	-	2	2	2	-	2
PG309.2	2	3	3	2	-	-	-	-	-	3	-	2
PG309.3	3	3	3	2	2	-	-	-	-	2	-	2
PG309.4	2	3	3	2	-	-	2	-	-	2	2	2
PG309.5	3	2	3	2	-	-	-	-	-	3	-	2
PG309.6	3	3	3	2	-	-	-	2	-	2	-	2
PG 310 BA5017 MANAGERIAL BEHAVIOUR AND EFFECTIVENESS												
PG310.1	3	-	-	-	-	-	-	-	-	-	-	2
PG310.2	2	-	-	-	-	-	-	-	-	-	-	2
PG310.3	2	2	-	-	-	-	-	-	-	-	-	2
PG310.4	2	2	-	-	-	-	-	-	-	-	-	2
PG310.5	3	2	3	2	-	-	-	-	-	-	-	2
PG310.6	3	2	3	2	-	-	-	-	-	-	-	-


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PG 311 BA5019 Strategic Human Resource Management												
PG311.1	2	3	-	-	-	2	-	2	2	2	-	2
PG311.2	2	2	-	-	-	-	-	-	-	3	-	2
PG311.3	2	2	-	-	2	-	-	-	-	2	-	2
PG311.4	2	2	-	-	-	-	2	-	-	2	2	2
PG311.5	2	3	-	-	-	-	-	-	-	3	-	2
PG311.6	2	2	-	-	-	-	-	2	-	2	-	2
PG 312 BA5020 Advanced Database Management System												
PG312.1	3	2	3	2	-	2	-	2	2	2	-	2
PG312.2	2	3	3	2	-	-	-	-	-	3	-	2
PG312.3	3	3	3	2	2	-	-	-	-	2	-	2
PG312.4	2	3	3	2	-	-	2	-	-	2	2	2
PG312.5	3	2	3	2	-	-	-	-	-	3	-	2
PG312.6	3	3	3	2	-	-	-	2	-	2	-	2
PG 313 BA5022 Enterprise Resource Planning												
PG313.1	3	2	3	2	-	2	-	2	2	2	-	2
PG313.2	2	3	3	2	-	-	-	-	-	3	-	2
PG313.3	3	3	3	2	2	-	-	-	-	2	-	2
PG313.4	2	3	3	2	-	-	2	-	-	2	2	2
PG313.5	3	2	3	2	-	-	-	-	-	3	-	2
PG313.6	3	3	3	2	-	-	-	2	-	2	-	2
PG 314 BA5024 E-Business Management												
PG314.1	3	2	3	2	-	2	-	2	2	2	-	2
PG314.2	2	3	3	2	-	-	-	-	-	3	-	2
PG314.3	3	3	3	2	2	-	-	-	-	2	-	2
PG314.4	2	3	3	2	-	-	2	-	-	2	2	2
PG314.5	3	2	3	2	-	-	-	-	-	3	-	2
PG314.6	3	3	3	2	-	-	-	2	-	2	-	2
PG 401 BA5411 Project Work												


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PG401.1	3	2	3	2	-	2	-	2	2	2	-	2
PG401.2	2	3	3	2	-	-	-	-	-	3	-	2
PG401.3	3	3	3	2	2	-	-	-	-	2	-	2
PG401.4	2	3	3	2	-	-	2	-	-	2	2	2
PG401.5	3	2	3	2	-	-	-	-	-	3	-	2



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