



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.

(An ISO 9001:2015 Certified Institution)

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2.6.1: Programme and course outcomes for all Programmes offered by the institution are stated and displayed on website and communicated to teachers and students

COs for all Programmes

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2.6.1. Programme and course outcomes for all Programmes offered by the institution are stated and displayed on website and communicated to teachers and students.

The institute offers a high quality holistic education in an under developed and semi urban area. The vision and mission of the institution emphasize to provide a conducive learning environment that facilitates the students to achieve professional and personal growth in technical field and capable of solving the societal issues. The institute provides a good and modern infrastructure for the development of the students to explore their hidden talents and innovative skills.

The teaching learning process effectiveness can be measured through learning outcomes and in turn it can be achieved by comparing the Course Outcomes (CO) and Programme Outcomes (PO) target and attainment.

The Programme Outcomes (PO), Programme Educational Objectives (PEO) and Program Specific Outcomes (PSO) are displayed and disseminated in each and every department classrooms, corridor, faculty rooms, laboratories, cabin of HOD's and it is also available in departmental webpage of Institutional website (www.miet.edu).

The course outcomes are communicated by individual faculty to the students in classrooms, displayed in lesson plan, log book, course file and displayed in departmental web page of institutional website and also displayed in the course material available in departmental web page.

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, make, clarify 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.

PROGRAMME SPECIFIC OUTCOMES – CIVIL ENGINEERING

PSO 1	Analyze, design, construct, manage, maintain and operate infrastructure and development projects.
PSO 2	Evaluate the environmental collision of various projects and take required measures to control environmental issues.
PSO 3	Talented to use latest analytical and drafting software's relating to various streams of Civil Engineering.

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.

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

PSO 1	To analyze, design and develop solutions by applying foundational concepts of electronics and communication engineering
PSO 2	To apply design principles and best practices for developing quality products for scientific and business applications.
PSO 3	To adapt to emerging information and communication technologies (ICT) to innovate ideas and solutions to existing/novel problems

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.

**PROGRAMME SPECIFIC OUTCOMES – MASTER OF BUSINESS
ADMINISTRATION**

PSO 1	Ability to apply the business acumen gained in practice.
PSO 2	Ability to understand and solve managerial issues.

SCIENCE AND HUMANITIES

Regulation – 2013

SEMESTER - I

S.No	Course Outcome
C101-HS6151/TECHNICAL ENGLISH-I	
C101.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using communicative strategies.
C101.2	Write coherently and flawlessly using a wide diction.
C101.3	Read different genres of texts adopting various reading strategies.
C101.4	Comprehend different spoken discourses in different accents.
C101.5	Communicate in group and to larger audience appropriately.
C101.6	Enable to understand process descriptions and present it in the relevant field.
C102-MA65151/MATHEMATICS-I	
C102.1	Find the eigen values and eigen vectors to diagonalise and reduce a matrix to quadratic form.
C102.2	Check the converges, diverges of infinite series
C102.3	To find the solutions of algebraic equations solved by iterative methods gets close to the required solution.
C102.4	Obtain the evaluate and envelopes of a given curves by means of radius and centre of curvature
C102.5	Calculate the maxima and minima value functions of two variables
C102.6	Find the area of plain curves and volume of solid using double and triple integrals
C103-PH6151/ENGINEERING PHYSICS-I	
C103.1	Discuss various crystal structures and different crystal growth techniques
C103.2	Demonstrate the properties of elasticity and heat transfer through objects
C103.3	Explain black body radiation, properties of matter waves and Schrodinger wave equations
C103.4	Illustrate the acoustic requirements, production and application of ultrasonic's.
C103.5	Examine the characteristics of laser and optical fiber
C103.6	Improve the property of the materials for the application of commercial devices
C104-CY6151/ENGINEERING CHEMISTRY-I	
C104.1	Classify polymers and their utility in the industries and describe the techniques of

	polymerization and properties of polymers
C104.2	Relate various thermodynamic functions such as enthalpy, entropy, free energy and their importance and equilibrium constant and its significance
C104.3	Explain the photophysical processes such as fluorescence and phosphorescence and various components of UV and IR spectrophotometer
C104.4	Illustrate the phase transitions of one component and two component systems and the types of alloys and their applications in industries
C104.5	Outline the synthesis, characteristics and the applications of nano materials
C104.6	Knowing the various applications related to photophysical laws
C105-GE6151/COMPUTER PROGRAMMING	
C105.1	Demonstrate the Organization of a Computer and number systems
C105.2	Explain the attributes of algorithm and programming basics
C105.3	Illustrate simple programs by using arrays and string functions
C105.4	Explain functions and pointers for solving problems
C105.5	Develop simple applications using structure and union
C105.6	Develop a application program using c
C106-GE6152/ENGINEERING GRAPHICS	
C106.1	Construct the conic sections and special curves and outline their practical applications and sketch the orthographic views from pictorial views and models
C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.
C106.3	Draw the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures
C106.4	Design the sectional views of solids like cube, prisms, pyramids, cylinders & cones and Development of its lateral surfaces
C106.5	Apply the principles of isometric projection and perspective projection of simple solids and truncated prisms, pyramids, cone and cylinders
C107-GE6161/COMPUTER PRACTICES LABORATORY	
C107.1	Prepare data using MS office for Presentation and Visualization
C107.2	Analyze the Problems and design using Flow-chart.
C107.3	Solve Problems using decision making and looping Statements.

C107.4	Use Arrays, Structures & Unions in problem solving.
C107.5	Solve Problems using Recursive Functions.
C107.6	Solve problems using c programs
C108-GE6162/ENGINEERING PRACTICES LABORATORY	
C108.1	Ability to fabricate electrical and electronics circuits
C108.2	Acquiring the knowledge about various types of wiring circuit for wiring system, wiring tools, wiring estimation and cost.
C108.3	Get hands on guidance to understand the knowledge about bread board assembling, need of earthing.
C108.4	Recognize electrical Quantities of V, I& PF in RLC and Energy with Single Phase Energy meter.
C108.5	Gain the knowledge about Logic Gates and Electronic components. Illustrate PCB with Electronic components, devices, circuits for general purposes.
C108.6	Substantiate HWR & FWR with ripple factor & test for generation of clock signal.
C109-GE6163-PHYSICS AND CHEMISTRY LABORATORY-I	
C109.1	The student will be able to analyze the physical principle involved in the various instruments, also relate the principle to new application.
C109.2	The various experiments in the areas of optics, mechanics and thermal physics will nurture the students in all branches of Engineering.
C109.3	The students will be able to think innovatively and also improve the creative skills that are essential for engineering.
C109.4	Evaluate the wavelength of spectral lines using spectrometer, the wavelength of laser, particle size, acceptance angle of an optical fiber using semiconductor diode laser and the thickness of a thin wire through interference fringes using Air wedge apparatus.
C109.5	Appraise the velocity of sound and compressibility of the liquid using ultrasonic interferometer and thermal conductivity for bad conductors using Lee's disc apparatus.
C109.6	Determine the DO content in water sample by winkler's method and molecular weight of polymer by Ostwald viscometer.

SEMESTER - II	
C110-HS6251/TECHNICAL ENGLISH-II	
C110.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using communicative strategies.
C110.2	Write coherently and flawlessly using a wide diction.
C110.3	Read different genres of texts adopting various reading strategies.
C110.4	Comprehend different spoken discourses in different accents.
C110.5	Communicate in group and to larger audience appropriately.
C110.6	Enable to understand process descriptions and present it in the relevant field.
C111-MA6251/MATHEMATICS-II	
C111.1	Apply the vector concepts of vector calculus in engineering disciplines
C111.2	Apply the knowledge of mathematics in solving higher order differential equations with constant coefficients.
C111.3	To have the basic knowledge of differential equation in typical mechanical fields.
C111.4	Understand and apply the knowledge of Laplace transform in solving ordinary differential equation.
C111.5	Understand the standard techniques of complex variable theory and use them to solve core engineering problems.
C111.6	Evaluate real integrals by applying concept of complex integration.
C112-PH6251/ENGINEERING PHYSICS-II	
C112.1	Illustrate Classical and Quantum free electron theory & calculate carrier concentration in metals.
C112.2	Describe the carrier concentration in semiconductors and identify the P-type & N-type semiconductor using Hall effect
C112.3	Classify the different types of magnetic and superconducting materials
C112.4	Explain the dielectrics, types of polarization, losses and breakdowns
C112.5	Discuss the properties, preparation and applications of Metallic Alloys, SMA, Nanomaterials, NLO, Biomaterials
C112.6	New Engineering materials can be prepared for the purpose of development of modern devices

C113-CY6251-ENGINEERING CHEMISTRY-II	
C113.1	Develop innovative methods to produce soft water for industrial use and potable water at cheaper cost
C113.2	Substitute metals with conducting polymers and also produce cheaper biodegradable polymers to reduce environmental pollution
C113.3	Design economically and new methods to synthesise nano materials
C113.4	Apply their knowledge for protection of different metals from corrosion
C113.5	Have the knowledge of converting solar energy into most needy electrical energy efficiently to reduce the environmental pollution
C114-GE6251- BASIC CIVIL AND MECHANICAL ENGINEERING	
C114.1	Explain the working principles of various power plants and differentiate the pumps and turbines.
C114.2	State the functions of IC engine and classify the various types of boilers.
C114.3	Apply the principles of vapour absorption and compression systems and Explain the Operation of air conditioner.
C114.4	Apply the principles of surveying and use various measurements for surveying and study about various engineering materials and leveling instruments.
C114.5	Classify the types of bridges, foundation, floorings, roofs, plasters and R.C.C structural members and state the purpose of dam.
C115-EE6201/CIRCUIT THEORY	
C115.1	Able to Illustrate the basic laws and series and parallel circuits, and Analyse the Mesh and nodal method for D.C and A.C. circuits .
C115.2	Ready to do Network reduction & source transformation technique and star delta conversion. Apply Theorems for complex circuits.
C115.3	Able to Analyze Series and parallel circuit parameters also analyze Self and mutual inductance and Coefficient of coupling of inductors.
C115.4	Analyze the Transient response of RL, RC and RLC Circuits using Laplace transform for DC input and A.C. with sinusoidal input
C115.5	Able to solve Three phase balanced / unbalanced voltage sources – analysis of three phase 3-wire and 4-wire circuits with star and delta connected loads,
C115.6	Able to analyze DC and AC circuits and to solve complex circuits and Transient

	response.
C116-GE6252/ PHYSICS AND CHEMISTRY LABORATORY - II	
C116.1	The student will be able to analyze the Science concept involved in the various instruments related to the impact of new application.
C116.2	The various experiments in the areas of optics, mechanics and thermal physics will nurture the students in all branches of Engineering.
C116.3	The students will be able to think innovatively and also improve the creative skills that are essential for engineering.
C116.4	Appraise the Young's modulus of the beam by uniform and non uniform bending method, the moment of inertia and Rigidity Modulus for thin wire using Torsion Pendulum.
C116.5	Use Poiseuille's method for determining the coefficient of viscosity of the liquid.
C116.6	Evaluate the refractive index of spectral lines for determining the dispersive power of a prism.
C117-CS6212/ COMPUTER PROGRAMMING LABORATORY	
C117.1	Explain UNIX Operating system and usage of file system.
C117.2	Apply Shell Commands for a given task using filter and pipe commands.
C117.3	Develop and implement the Shell scripts in VI editor.
C117.4	Develop C Program on Unix environment.
C117.5	Apply File handling in C to copy, merge and display the given file.
C118-EE6211/ELECTRI CIRCUITS LABORATORY	
C118.1	Apply KCL, KVL and Network Theorems to Simple and Complex circuits.
C118.2	Demonstrate the working of CRO and Determine the Time Constant of RC circuit.
C118.3	Determine frequency response of RLC circuits and Use MATLAB to simulate series, parallel resonant circuit, low pass, high pass filter.
C118.4	Use MATLAB to simulate three phase balanced, unbalanced circuit and Measure power in three phase circuits by two wattmeter methods.
C118.5	Determine h-parameters of Two port networks and Calibrate single phase energy meter

S.No	Course Outcome											
	C101-HS6151/TECHNICAL ENGLISH-I											
	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
	C102-MA6151/MATHEMEATICS-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
	C103-PH6151/ENGINEERING PHYSICS-I											
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
C103.5	3	2	3	3	2	3	2	-	-	-	-	2
C103.6	3	2	3	3	2	3	2	-	-	-	-	2
	C104-CY6151/ENGINEERING CHEMISTRY-I											
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

C105-GE6151/COMPUTER 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	-	-	-	-
C106-GE6152/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
C107-GE6161/COMPUTER PRACTICES 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	-	-	-	-	-	-	-	-
C107.6	3	2	3	2	-	-	-	-	-	-	-	-
C108-GE6162/ENGINEERING PRACTICES 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
C109-GE6163-PHYSICS AND CHEMISTRY LABORATORY-I												
C109.1	2	-	2	2	3	-	2	2	3	2	3	2
C109.2	2	-	2	3	3	-	2	2	2	2	3	2

C109.3	2	-	2	2	2	-	2	2	2	2	3	2
C109.4	2	-	2	2	3	-	2	2	3	2	3	2
C109.5	2	-	2	3	3	-	2	2	2	2	3	2
C109.6	2	-	2	2	2	-	2	2	2	2	3	2
C110-HS6251/TECHNICAL ENGLISH-II												
C110.1	2	2	-	-	-	2	2	-	2	3	-	2
C110.2	2	3	-	-	-	2	2	-	2	3	-	2
C110.3	2	2	-	-	-	2	2	-	2	3	-	2
C110.4	2	2	-	-	-	2	2	-	2	3	-	2
C110.5	2	3	-	-	-	2	2	-	2	3	-	2
C110.6	2	3	-	-	-	2	2	-	2	3	-	2
C111-MA6251/MATHEMATICS-II												
C111.1	3	3	3	3	2	2	-	-	-	2	-	-
C111.2	3	2	2	-	-	2	-	-	-	-	-	-
C111.3	3	3	3	-	-	2	-	2	-	2	-	2
C111.4	3	2	2	-	2	-	-	-	-	-	-	-
C111.5	3	3	3	2	2	-	-	-	-	2	2	-
C111.6	2	2	3	2	2	2	-	-	-	2	-	2
C112-PH6251/ENGINEERING PHYSICS-II												
C112.1	2	2	-	-	-	-	-	-	-	-	-	-
C112.2	3	2	3	-	-	2	2	-	-	3	-	2
C112.3	3	3	3	3	-	2	2	-	-	3	-	2
C112.4	3	3	3	3	-	2	2	-	-	3	-	2
C112.5	3	2	2	-	2	2	2	-	2	3	-	3
C112.6	3	2	2	-	2	3	2	-	2	3	-	3
C113-CY6251-ENGINEERING CHEMISTRY-II												
C113.1	2	2	2	-	2	-	-	-	-	-	2	2
C113.2	2	2	2	-	2	-	-	-	-	-	2	2
C113.3	2	2	2	2	2	2	-	-	-	-	2	2
C113.4	2	2	2	-	2	2	-	-	-	-	2	2
C113.5	2	2	2	-	2	2	2	-	2	-	2	2

C113.6	2	2	2	2	2	2	2	-	2	-	2	2
C114-GE6251- BASIC CIVIL AND MECHANICAL ENGINEERING												
C114.1	3	2	2	-	2	-	-	-	-	-	-	2
C114.2	3	2	2	-	2	-	-	-	-	-	-	2
C114.3	3	2	2	-	2	-	-	-	-	-	-	2
C114.4	3	2	2	-	2	-	-	-	-	-	-	2
C114.5	3	2	2	-	2	-	-	-	-	-	-	2
C115-EE6201/CIRCUIT THEORY												
C115.1	3	3	3	2	2	2	-	2	2	2	3	2
C115.2	3	3	3	2	2	-	-	-	-	3	2	2
C115.3	3	3	3	2	2	-	-	-	-	2	2	2
C115.4	3	3	3	2	3	-	2	-	-	2	2	2
C115.5	3	3	3	2	2	-	-	-	-	3	2	2
C115.6	3	3	3	2	3	-	-	2	-	2	2	2
C116-GE6252/ PHYSICS AND CHEMISTRY LABORATORY – II												
C116.1	2	-	2	2	3	-	2	2	3	2	3	2
C116.2	2	-	2	3	3	-	2	2	2	2	3	2
C116.3	2	-	2	2	2	-	2	2	2	2	3	2
C116.4	2	-	2	2	3	-	2	2	3	2	3	2
C116.5	2	-	2	3	3	-	2	2	2	2	3	2
C116.6	2	-	2	2	2	-	2	2	2	2	3	2
C117-CS6212/ COMPUTER PROGRAMMING LABORATORY												
C117.1	3	-	-	-	-	-	-	-	-	-	-	-
C117.2	3	3	3	2	-	-	-	-	-	-	-	-
C117.3	3	3	3	2	-	-	-	-	-	-	-	-
C117.4	3	2	3	2	-	-	-	-	-	-	-	-
C117.5	3	2	3	2	-	-	-	-	-	-	-	-
C117.6	3	2	3	2	-	-	-	-	-	-	-	-
C118-EE6211/ELECTRIC CIRCUITS LABORATORY												
C118.1	3	2	3	2	-	2	-	2	2	2	-	2
C118.2	2	3	3	2	-	-	-	-	-	3	-	2

C118.3	3	3	3	2	2	-	-	-	-	2	-	2
C118.4	2	3	3	2	-	-	2	-	-	2	2	2
C118.5	3	2	3	2	-	-	-	-	-	3	-	2
C118.6	3	3	3	2	-	-	-	2	-	2	-	2


PRINCIPAL

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

Regulation – 2017

SEMESTER - I

S.No	Course Outcome
C101/ HS8151/ COMMUNICATIVE ENGLISH	
C101.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using communicative strategies.
C101.2	Write coherently and flawlessly using a wide diction.
C101.3	Read different genres of texts adopting various reading strategies.
C101.4	Comprehend different spoken discourses in different accents.
C101.5	Communicate in group and to larger audience appropriately.
C101.6	Enable to understand process descriptions and present it in the relevant field.
C102/ MA8151/ENGINEERING MATHEMATICS I	
C102.1	Find the eigen values and eigen vectors to diagonalise and reduce a matrix to quadratic form.
C102.2	Check the converges, diverges of infinite series
C102.3	Find the solutions of algebraic equations solved by iterative methods gets close to the required solution.
C102.4	Obtain the evaluate and envelopes of a given curves by means of radius and centre of curvature
C102.5	Calculate the maxima and minima value functions of two variables
C102.6	Find the area of plain curves and volume of solid using double and triple integrals
C103/ PH8151/ENGINEERING PHYSICS	
C103.1	Discuss various crystal structures and different crystal growth techniques
C103.2	Demonstrate the properties of elasticity and heat transfer through objects
C103.3	Explain black body radiation, properties of matter waves and Schrodinger wave equations
C103.4	Illustrate the acoustic requirements, production and application of ultrasonics.
C103.5	Examine the characteristics of laser and optical fiber
C103.6	Improve the property of the materials for the application of commercial devices
C104/ CY8151/ENGINEERING CHEMISTRY	
C104.1	Classify polymers and their utility in the industries and describe the techniques of polymerization and properties of polymers
C104.2	Relate various thermodynamic functions such as enthalpy, entropy, free energy and their importance and equilibrium constant and its significance

C104.3	Explain the photophysical processes such as fluorescence and phosphorescence and various components of UV and IR spectrophotometer
C104.4	Illustrate the phase transitions of one component and two component systems and the types of alloys and their applications in industries
C104.5	Outline the synthesis, characteristics and the applications of nano materials
C104.6	Knowing the various applications related to photophysical laws
C105 / GE8151/ PROBLEM SOLVING AND PYTHON PROGRAMMING	
C105.1	Demonstrate algorithm, flowchart for various programs
C105.2	Do simple programs using python programming basics
C105.3	Illustrate programs by using arrays and string functions
C105.4	Develop simple programs using functions and pointers
C105.5	Design mini projects with structures.
C105.6	Develop applications using python Programming Language
C106 / GE8152/ ENGINEERING GRAPHICS	
C106.1	Construct engineering curves
C106.2	Sketch all the views of engineering objects in free hand.
C106.3	Draw the projection of points, lines and planes.
C106.4	Draw the projection of solids in any orientation.
C106.5	Develop the section and lateral surfaces of sectioned solids
C106.6	Sketch the solids in perspective and isometric approaches
C107 / GE8161/ PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY	
C107.1	Demonstrate algorithm, flowchart for various programs
C107.2	Do simple programs using python programming basics
C107.3	Illustrate programs by using arrays and string functions
C107.4	Develop simple programs using functions and pointers
C107.5	Design mini projects with structures.
C107.6	Develop applications using python Programming Language
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.
C108.2	The various experiments in the areas of elasticity, optics, mechanics and thermal physics will nurture the students in all branches of Engineering.

C108.3	The students will be able to think innovatively and also improve the creative skills that are essential for engineering.
SEMESTER – II	
C109 / HS8251/ TECHNICAL ENGLISH	
C109.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using communicative strategies.
C109.2	Write coherently and flawlessly using a wide diction.
C109.3	Read different genres of texts adopting various reading strategies.
C109.4	Comprehend different spoken discourses in different accents.
C109.5	Communicate in group and to larger audience appropriately.
C109.6	Enable to understand process descriptions and present it in the relevant field.
C110 / MA8251/ ENGINEERING MATHEMATICS II	
C110.1	Apply the vector concepts of vector calculus in engineering disciplines
C110.2	Apply the knowledge of mathematics in solving higher order differential equations with constant coefficients
C110.3	To have the basic knowledge of differential equation in typical mechanical fields.
C110.4	Understand and apply the knowledge of Laplace transform in solving ordinary differential
C110.5	Understand the standard techniques of complex variable theory and use them to solve core engineering problems.
C110.6	Evaluate real integrals by applying concept of complex integration.
C111 / PH8253/PHYSICS FOR ELECTRONICS ENGINEERING	
C111.1	Gain knowledge on classical and quantum electron theories, and energy band structures,
C111.2	Acquire knowledge on basics of semiconductor physics and its applications in various devices,
C111.3	Get knowledge on magnetic and dielectric properties of materials,
C111.4	Have the necessary understanding on the functioning of optical materials for optoelectronics,
C111.5	Understand the basics of quantum structures and their applications in spintronics and carbon electronics.
C112/ BE8254/BASIC ELECTRICAL AND INSTRUMENTATION ENGINEERING	
C112.1	Fundamentals of semiconductor and basic theorems used in Electrical circuits
C112.2	Design amplifier circuits under CB, CE, CC Configurations.
C112.3	Design the Adders – Flip-Flops – Registers and Counters with logic gates.
C112.4	Discuss the Principles of Amplitude and Frequency Modulations and various blocks Communication Systems

C112.5	Demonstrate the working of Television systems, FAX machines and micro wave systems.
C113 /EC8251/CIRCUIT ANALYSIS	
C113.1	Develop the capacity to analyze electrical circuits, apply the circuit theorems in real time
C113.2	Design and understand and evaluate the AC and DC circuits.
C113.3	Practical implications of the fundamentals of Ohm's law, Kirchhoff's current and voltage laws
C113.4	Accurate measurement of voltage, current, power and impedance of any circuit
C113.5	DC analysis, Transient analysis and Frequency analysis of a given circuit depending on types of elements
C113.6	Practical implementation of the fundamental electrical theorems and modeling of simple electrical systems
C114/ EC8252/ELECTRONIC DEVICES	
C114.1	Describe the principle and characteristics of semiconductor diode
C114.2	Analyze various transistor configurations
C114.3	Construct large signal modeling and small signal modeling of a transistor
C114.4	Describe the principle of operation and characteristics of special Semiconductor diodes
C114.5	Discuss the operation of various semiconductor photo devices and power electronic devices
C114.6	Implement real time applications using electronic devices
C115/ EC8261/CIRCUITS AND DEVICES LABORATORY	
C115.1	Identify the basic devices and its configurations
C115.2	Analyze the resistive circuits with different sources
C115.3	Obtain the resonance for different configurations of RLC
C115.4	Explain the response of RLC circuit with different inputs
C115.5	Understand the operation of basic solid state devices
C115.6	Plot the response of wave shaping circuits
C116 / GE8261/ ENGINEERING PRACTICES LABORATORY	
C116.1	Gets exposure regarding Joining operations in engineering materials.
C116.2	Carry out the basic machining operations in engineering materials.
C116.3	Carry out basic home electrical works and appliances
C116.4	Measure the electrical quantities
C116.5	Understand basic electronic components.
C116.6	Integrate the components and gates using soldering practices.

S.No	Course Outcome											
	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
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	-	-	-	-	-	-	-	-
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
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
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


PRINCIPAL

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

**CIVIL
ENGINEERING**

Regulation – 2013 - UG

S.No	Course Outcome
SEM-III	
C301-MA6351/TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	
C301.1	To introduce the basic concepts of PDE for solving standard partial differential equations.
C301.2	To introduce Fourier series analysis which is central to many applications in engineering apart from its use in solving boundary value problems
C301.3	To acquaint the student with Fourier series techniques in solving heat flow problems used in various situations.
C301.4	To acquaint the student with Fourier transform techniques used in wide variety of Situations.
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.
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
C302-GE6351/ENVIRONMENTAL SCIENCE AND ENGINEERING	
C302.1	Play an important role in transferring a healthy environment for future generations
C302.2	Analyze the impact of engineering solutions in a global and societal context
C302.3	Discuss the environmental degradation and overcome contemporary issues
C302.4	Ability to consider issues of environment and sustainable development in his personal and professional undertakings
C302.5	Highlight the importance of ecosystem and biodiversity
C302.6	Paraphrase the importance of conservation of resources
C303-CE6301/ENGINEERING GEOLOGY	
C303.1	Gain the knowledge on basic concepts about geology and earth structures
C303.2	Highlight the various types of minerals and their properties
C303.3	Identify the most common igneous, sedimentary and metamorphic rocks
C303.4	Understand the geological structures, geophysical methods, morphological and geological sections

C303.5	Recent techniques involved in geological investigation
C303.6	Identify potential geological hazards and various structures
C304-CE6302/MECHANICS OF SOLIDS	
C304.1	Understand the basic concepts of stress, strain, elastic constants
C304.2	Analyze the shear force and bending moment of beams
C304.3	Gain the knowledge of slope and deflection by using various methodologies
C304.4	Apply the torsion in shafts and springs
C304.5	Analyze the concept of trusses
C304.6	Gain the knowledge to analyze the primary elements in the structure
C305-CE6303/MECHANICS OF FLUIDS	
C305.1	Understand the properties and types of fluids
C305.2	Gain the knowledge of static, kinematic and dynamics of fluids
C305.3	Solve the problems related to equation of motion
C305.4	Apply dimensional and model analysis
C305.5	Learn the types of flow and losses encountered in pipes
C305.6	Understand the boundary layer thickness
C306-CE6304/SURVEYING I	
C306.1	Gain knowledge on fundamental surveying instruments and usages
C306.2	Understand the usage of compass and plane table instruments
C306.3	Understand the basic concepts in leveling instruments
C306.4	Able to do the contouring and earthwork calculations
C306.5	Understand the temporary and permanent adjustment of theodolite
C306.6	Gain the knowledge on various surveying applications
C307- CE6311/ SURVEYING PRACTICAL I	
C307.1	Gain practical knowledge on handling basic survey instruments
C307.2	Gain practical knowledge on handling Theodolite, Tacheometry
C307.3	Gain practical knowledge on handling Total Station and GPS
C307.4	Gain adequate knowledge to carryout Triangulation and Astronomical surveying
C307.5	Gain adequate knowledge on general field marking for various engineering projects and Location of site
C307.6	After successful completion of the laboratory course, the students will have understood the

	usage of various surveying equipment and their applications in current practice.
C308- CE6312/ COMPUTER AIDED BUILDING DRAWING	
C308.1	Able to replicate any furnishing details and staircase in reality into a drawing
C308.2	Able to create a detailed building plan with elevation and cross sectional elevation
C308.3	Understand to use computer software to convey the building drawing
C308.4	Able to create building plan for residential building
C308.5	Understand the building drawing for industrial building
C308.6	Understand the detailed drawing for framed structure
SEM-IV	
C401-MA6459/NUMERICAL METHODS	
C401.1	Understand the basic concepts and techniques of solving algebraic and transcendental equations
C401.2	Appreciate the numerical techniques of interpolation and error approximations in various intervals in real life situations.
C401.3	Apply the numerical techniques of differentiation and integration for engineering problems.
C401.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations
C401.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications
C401.6	After successful completion of the laboratory course, the students will have adequate knowledge on applying these mathematical formulations in civil engineering applications
C402-CE6401/CONSTRUCTION MATERIALS	
C402.1	Compare the properties of advanced building materials
C402.2	Understand the typical and potential applications of lime, cement and aggregates
C402.3	Gain the knowledge of production of concrete and making concrete elements
C402.4	Understand the applications of timbers and other materials
C402.5	Highlight the importance of modern material for construction
C402.6	Recent advances in alternative field materials
C403-CE6402/STRENGTH OF MATERIALS	
C403.1	Analyze the structural members subjected to tension, compression, torsion & bending

C403.2	Understanding the basic concepts of failure of materials and how it should be rectified
C403.3	Analyze compression members, hoop and longitudinal stresses
C403.4	Utilize appropriate methodology for complex members like crane hook, curved beams
C403.5	Analyze the steel structures in various sections
C403.6	Understand and analyse the bending stresses in different sections
C404-CE6403/APPLIED HYDRAULIC ENGINEERING	
C404.1	Apply their knowledge of fluid mechanics in open channel flow
C404.2	Able to identify a effective section for flow in different cross sections
C404.3	Solve problems in uniform, gradually and rapidly varied flows in steady state conditions
C404.4	Understand the principles, working and application of turbines
C404.5	Understand the principles, working and application of pumps
C404.6	Identify the different types of fluid in open channel and its behavior
C405-CE6404/SURVEYING II	
C405.1	Discuss Various components of control surveying System, their characteristics
C405.2	Understand the various sources and errors of surveying and its adjustments
C405.3	Get knowledge about the significance of total station, working principle and its uses
C405.4	Understand the concept of GPS and its segments, signal structure and receivers and its types
C405.5	Apply advanced methods in surveying and sounding methods to measure the distance
C405.6	Understand the hydrographic surveying and determination of Azimuth by altitude
C406-CE6405/SOIL MECHANICS	
C406.1	Classify the soil and assess the engineering properties and index properties
C406.2	Understand the stress concepts in soils
C406.3	Understand and identify the settlement in soils
C406.4	Determine the shear strength of soil
C406.5	Analyze both finite and infinite slopes
C406.6	Gain the knowledge of basic principles and behavior of soil
C407-CE6411/ STRENGTH OF MATERIALS LABORATORY	
C407.1	Test the steel plate under the action of forces
C407.2	Measure the Steel rod under the action of tensile and shear force.
C407.3	Test the wooden specimen under the action of compressive force.

C407.4	Measure the quality of various cements.
C407.5	Conduct experiment on springs for compression and tension.
C407.6	Apply the material properties in practice
C408- CE6412 / HYDRAULIC ENGINEERING LABORATORY	
C408.1	Gain the application of principles performed in experiments
C408.2	Measure pipe flows
C408.3	Determine the frictional losses in pipes
C408.4	Calculate the efficiency and characteristics of Pumps
C408.5	Calculate the efficiency and characteristics of Turbines
C409-CE6413/SURVEYING II LABORATORY	
C409.1	Acquire knowledge about chain and its accessories.
C409.2	Understand the traversing, leveling & Plane table concepts.
C409.3	Synthesize the boundary of an area by contouring and tachometry.
C409.4	Analyze the elevation and distance by single plane and double plane method.
C409.5	Analyze the topographical map features using total station and GPS
SEM-V	
C501-CE6501/STRUCTURAL ANALYSIS I	
C501.1	Analyze continuous beams, pin-jointed indeterminate plane frames and rigid plane frames by strain energy method
C501.2	Analyze the moving loads
C501.3	Gain the knowledge to analyze arch structures
C501.4	Analyze the continuous beams and rigid frames by slope deflection method
C501.5	Analyze continuous beams and rigid frames with and without sway by the concept of moment distribution method
C501.6	Understand the framed structures and arches
C502-CE6502/FOUNDATION ENGINEERING	
C502.1	Understand the site investigation methods and sampling
C502.2	Gain the knowledge on bearing capacity as per IS 6403:1991
C502.3	Design the shallow foundation and its types
C502.4	Analyze the load carrying capacity and settlement of pile foundation.
C502.5	Discuss Rankine's theory and check the stability of retaining walls

C502.6	Understand the foundation procedure in site
C503-CE6503/ENVIRONMENTAL ENGINEERING I	
C503.1	Understand the source generation, characteristics and standards of water relation to public health
C503.2	Forecast the demand of water needed for future population by applying various methods
C503.3	Able to design the component systems of water treatment facilities
C503.4	Select the most appropriate techniques to purify and control the pollution of water
C503.5	Analyze the water distribution network for a public water supply system
C503.6	Design and evaluate water supply project alternatives on basis of chosen selection criteria
C504-CE6504/HIGHWAY ENGINEERING	
C504.1	Get knowledge On roads and its types
C504.2	Get knowledge on planning and aligning of highway
C504.3	Understand the concept of Geometric design of highways
C504.4	Design flexible and rigid pavements
C504.5	Gain knowledge on Highway construction materials, properties, testing methods
C504.6	Understand the concept of pavement management system, evaluation of distress and maintenance of pavements
C505-CE6505/DESIGN OF REINFORCED CONCRETE ELEMENTS	
C505.1	Understand the various design methodologies for the design of RC elements.
C505.2	Know the analysis and design of flanged beams by limit state method and sign of beams for shear, bond and torsion.
C505.3	Design the various types of slabs and staircase by limit state method.
C505.4	Design columns for axial, uniaxial and biaxial eccentric loadings.
C505.5	Design of footing by limit state method.
C505.6	After successful completion of the course, the students will have adequate knowledge on design of beam, column and footing by Limit State Method.
C506-CE6506/CONSTRUCTION TECHNIQUES, EQUIPMENTS AND PRACTICE	
C506.1	Explain various properties of materials required for concrete and the process of manufacturing of cement and concrete
C506.2	Gain knowledge on construction activities sequence and methods of construction of structural and non-structural elements

C506.3	Demonstrate methods of construction of structures and use of temporary supports for construction works
C506.4	Apply various tunneling and piling techniques
C506.5	Gain knowledge on techniques to construct bridges and tall structures
C506.6	Knowledge on selection of suitable equipment's for various construction activities
C507-CE6674/COMMUNICATION AND SOFT SKILLS-LABORATORY BASED	
C507.1	Take international examination such as IELTS and TOEFL
C507.2	Participate in Group Discussion.
C507.3	Successfully answer questions in Interviews.
C507.4	Make effective Presentations.
C507.5	Participate confidently and appropriately in conversations both formal and informal
C507.6	Communicates effectively in their work places.
C508-CE6511/ SOIL MECHANICS LABORATORY	
C508.1	Determine the index properties of soil
C508.2	Learn and acquire knowledge to classify soils
C508.3	Understand the techniques, skills and modern engineering tools necessary for engineering practice
C508.4	Determine engineering properties and field density of soil
C508.5	Understand the behaviour of cohesive and cohesionless soil
C508.6	Understand the atterberg limits of soil
C509-CE6512/ SURVEY CAMP	
C509.1	Get a basic knowledge about the theodolite and GPS
C509.2	Prepare survey reports based on the field survey
C509.3	Apply the levelling concepts and prepare contour maps, LS and CS of roads
C509.4	Measure the horizontal angles and vertical angles for triangulation work
C509.5	Apply the various methods of conventional and advanced surveying techniques
C509.6	Learn advanced survey instruments survey total station
SEM-VI	
C601-CE6601/DESIGN OF REINFORCED CONCRETE & BRICK MASONRY	
C601.1	Exposure to the design of continuous beams
C601.2	Acquire knowledge in the design of slabs

C601.3	Analyse the design of Staircase
C601.4	Get knowledge in the design of walls
C601.5	Gain awareness in the design of brick masonry structures
C601.6	Introduction about yield line theory
C602-CE6602/STRUCTURAL ANALYSIS II	
C602.1	Gain knowledge on primary structures and ability to analyse intermediate structures
C602.2	Analyze continuous beam, pin- jointed frame and rigid frames
C602.3	Problem solving ability on truss and triangular element
C602.4	Gain knowledge on plastic modulus, shape and load factor
C602.5	Analyze of Plastic analysis of intermediate beam
C602.6	Understand to analyse suspension cables and bridges
C603-CE6603/DESIGN OF STEEL STRUCTURES	
C603.1	Introduce the steel members subjected to connections
C603.2	Design a tension member subjected to bolted, welded and riveted connections
C603.3	Design a compression member subjected to axial load and eccentric load
C603.4	Design a flexural member which is laterally supported and unsupported
C603.5	Design structural systems (roof trusses and gantry girders)
C603.6	Design a steel structures and all steel members with reference to IS 800:2007
C604-CE6604/RAILWAYS, AIRPORTS AND HARBOUR ENGINEERING	
C604.1	Understand the methods of route alignment and design elements in Railway Planning and Constructions
C604.2	Understand the Construction techniques and Maintenance of Track laying and Railway stations
C604.3	Gain an insight on the planning and site selection of Airport Planning and design
C604.4	Analyze and design the elements for orientation of runways and passenger facility systems
C604.5	Understand the various features in Harbours and Ports, their construction, coastal protection works and coastal Regulations to be adopted
C604.6	Analyze the various technologies to be adopted for the future development
C605-CE6605/ENVIRONMENTAL ENGINEERING II	
C605.1	Gain the knowledge of wastewater generation and its characteristics
C605.2	Understand the design, construction and collection of wastewater through sewers

C605.3	Identify the basic unit operations and processes
C605.4	Discuss the different types of aerobic and anaerobic treatments
C605.5	Maintain the environment for the protection of human health and at-risk ecosystems
C605.6	Discuss the sludge treatment methods and standards for disposal
C606-CE6002/CONCRETE TECHNOLOGY	
C606.1	Discuss various properties of materials required for concrete
C606.2	Explain the process of manufacturing of cement and concrete
C606.3	Utilize the admixtures and make the concrete with required specifications
C606.4	Analyze and interpret the tests on the materials and concrete
C606.5	Design the concrete for suitable requirements
C606.6	Apply symmetrical procedures and make various special concretes
C607-CE6611/ENVIRONMENTAL ENGINEERING LABORATORY	
C607.1	Understand the sampling and preservation methods of waste water.
C607.2	Understand the significance of characterization of wastewater.
C607.3	To know about the importance of B.O.D and C.O.D. test of water.
C607.4	Understand the ways to determine the suspended, volatile, fixed and settleable solids in wastewater.
C607.5	Get aware of hazards due the presence of heavy metals like - Chromium, Lead and Zinc in water.
C607.6	The students completing the course will be able to characterize wastewater and conduct treatability studies.
C608-CE6612/CONCRETE AND HIGHWAY ENGINEERING LABORATORY	
C608.1	Application of principles performed in experiments
C608.2	Measure workability of concrete
C608.3	Determine strengths of hardened concrete
C608.4	Develop characteristics on bitumen
C608.5	Develop characteristics on bituminous
C608.6	After successful completion of the laboratory course the students acquire knowledge on various concrete and bitumen tests
SEM-VII	
C701-CE6701/STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING	
C701.1	Gain knowledge on single degree of freedom system
C701.2	Definitions and analysis of TDOF system and MDOF

C701.3	Understand the basics terms of earthquakes
C701.4	Behavior of different types of structures under EQ loading
C701.5	Lessons learnt from past earthquakes in earthquake resist design
C701.6	Analysis of lateral loads and base shear subjected to earthquake
C702-CE6702/PRESTRESSED CONCRETE STRUCTURES	
C702.1	Understand the behaviour of prestressed concrete members and able to analyse the prestressed concrete beams
C702.2	Design the prestressed concrete members for flexure and shear as per the relevant design code (IS 1343)
C702.3	Analyze for deflection of prestressed concrete members and design the anchorage zone
C702.4	Analyze and design of composite beams and continuous beams
C702.5	Design of prestressed concrete structures (sleepers, tanks, pipes and poles)
C702.6	Understand the remedial methods and considering environmental aspects
C703-CE6703/WATER RESOURCES AND IRRIGATION ENGINEERING	
C703.1	The students will have knowledge and skills on Planning, design, operation and management of reservoir system.
C703.2	The students will have knowledge on water resource management
C703.3	The students will have knowledge on irrigation engineering
C703.4	The students will have knowledge on various types of Impounding structures
C703.5	The student will gain knowledge on different methods of irrigation including canal irrigation
C703.6	After successful completion of the course the student will acquire adequate knowledge on irrigation structures and its design.
C704-CE6704/ESTIMATION AND QUANTITY SURVEYING	
C704.1	Estimate the quantities for buildings
C704.2	Rate Analysis for all Building works, canals, and Roads and Cost Estimate
C704.3	Understand types of specifications, principles for report preparation, tender notices types
C704.4	Gain knowledge on types of contracts
C704.5	Evaluate valuation for building and land.
C704.6	After successful completion of the course the student will be able to do cost estimation for various projects.

C705-CE6007/HOUSING PLANNING MANAGEMENT	
C705.1	Classify the different housing sectors
C705.2	Understand the concepts of slum clearance
C705.3	Gain the concept of layout and the design of housing units
C705.4	Classify the different techniques involved in the construction field
C705.5	Understand the concept of housing unit
C705.6	Understand the basic details of housing management
C706-EN6501/MUNICIPAL SOLID WASTE MANAGEMENT	
C706.1	Able to understand the nature, characteristics, sampling of solid waste and their effects to the public health
C706.2	Identify the regulatory requirements regarding municipal solid waste management
C706.3	Analyze the storage and segregation of solid waste on the source itself
C706.4	Able to analyze collection systems, collection routes, and collection vehicles need for Municipal solid waste management
C706.5	Able to design and operation of sanitary landfill
C706.6	Utilize waste by using various techniques for energy recovery from solid waste
C707-CE6711/ COMPUTER AIDED DESIGN AND DRAWING LABORATORY	
C707.1	Gain knowledge and insight on Design and drawing of RCC cantilever and counter fort
C707.2	Gain knowledge and insight on Design of solid slab and RCC Tee beam bridges
C707.3	Gain knowledge and insight on Design and drafting of circular and rectangular RCC water tanks
C707.4	Gain knowledge and insight on Design of plate Girder Bridge and truss girder bridge
C707.5	Gain knowledge and insight on Design of hemispherical bottomed steel tank
C707.6	At the end of the course the student acquires hands on experience in design and preparation of structural drawings for concrete / steel structures normally encountered in Civil Engineering practice.
C708-CE6712/ DESIGN PROJECT	
C708.1	To impart and improve the design capability of the student
C708.2	To train students on design report preparation
C708.3	To train students to present the report in front of the experts committee
C708.4	To train students to handle any kind of practical difficulties during their future endeavor

C708.5	To train students to attend viva-voce presentation
C708.6	On completion of the design project students will have a better experience in designing various design problems related to Civil Engineering.
SEM-VIII	
C801-MG6851/PRINCIPLES OF MANAGEMENT	
C801.1	Evaluate the global context for taking managerial actions of planning, organizing and controlling
C801.2	Assess global situation, including opportunities and threats that will impact management of an organization
C801.3	Integrate management principles into management practices
C801.4	Assess managerial practices and choices relative to ethical principles and standards
C801.5	Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances
C801.6	Determine the most effective action to take in specific situations and Evaluate approaches to addressing issues of diversity
C802-CE6016/PREFABRICATED STRUCTURES	
C802.1	Get knowledge about design principles, layout of factory and stages of loading in precast construction
C802.2	Acquire knowledge about panel systems, slabs, connections used in precast construction and they will be in a position to design the elements
C802.3	Understand the types of floor systems, stairs and roofs used in precast construction
C802.4	Acquire knowledge about types of walls used in precast construction, sealants, design of joints
C802.5	Acquire knowledge about components in industrial building
C802.6	Gain knowledge of disuniting structures and erection techniques
C803-CE6021/REPAIR AND REHABILITATION OF STRUCTURES	
C803.1	Get knowledge on Quality of concrete
C803.2	Acquire awareness on durability aspects
C803.3	Know about the causes of deterioration
C803.4	Consciousness in the assessment of distressed structures
C803.5	Familiar on repairing of structures
C803.6	Understand the advanced demolition procedures

C804-CE6811/ PROJECT WORK	
C804.1	Identify and finalize problem statement by surveying variety of domains
C804.2	Perform requirement analysis and identify design methodologies
C804.3	Apply advanced techniques to solve the identified problem
C804.4	Present technical report by applying different visualization tools and Evaluation metrics
C804.5	To train the students to face reviews and viva voce examination.
C804.6	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.

S.No	Course Outcome											
C301-MA6351/TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS												
C301.1	3	-	-	-	-	-	-	-	-	-	-	2
C301.2	-	2	-	-	-	-	-	-	-	-	-	-
C301.3	-	-	-	-	-	-	-	-	-	-	-	2
C301.4	-	2	-	-	-	-	-	-	-	-	-	-
C301.5	2	-	-	-	-	-	-	-	-	2	-	-
C301.6	2	2	-	-	-	-	-	-	-	-	3	-
C302-GE6351/ENVIRONMENTAL SCIENCE AND ENGINEERING												
C302.1	2	1	2	1	-	2	2	2	3	3	3	3
C302.2	2	-	2	2	2	1	-	2	3	3	2	2
C302.3	2	2	2	2	2	2	-	2	2	3	2	2
C302.4	2	-	2	-	2	1	-	2	2	2	2	2
C302.5	2	2	2	1	2	2	-	2	3	3	2	2
C302.6	2	1	2	1	2	2	-	2	3	3	2	2
C303-CE6301/ENGINEERING GEOLOGY												
C303.1	3	-	-	-	-	-	2	-	-	-	-	2
C303.2	-	3	2	-	-	-	-	-	-	-	-	2
C303.3	-	3	2	-	-	2	-	-	-	-	-	-
C303.4	3	-	-	2	3	-	-	-	-	-	-	-
C303.5	-	-	-	-	3	-	-	-	2	-	-	3
C303.6	-	-	-	-	-	3	-	-	2	-	2	-

C304-CE6302/MECHANICS OF SOLIDS												
C304.1	2	3	2	2	2	2	-	-	2	-	-	2
C304.2	3	2	3	2	2	2	-	-	2	-	-	3
C304.3	2	3	2	2	2	3	-	-	2	-	-	2
C304.4	3	3	3	2	2	2	-	-	2	-	-	3
C304.5	2	3	2	2	2	3	-	-	2	-	-	2
C304.6	3	2	2	2	2	3	-	-	2	-	-	3
C305-CE6303/MECHANICS OF FLUIDS												
C305.1	3	2	-	-	-	-	-	-	-	-	-	-
C305.2	3	2	-	2	-	-	-	-	-	-	-	-
C305.3	3	2	-	-	-	-	-	-	-	-	-	-
C305.4	3	2	2	-	-	-	-	-	-	-	-	-
C305.5	3	2	2	2	-	-	-	-	-	-	-	-
C305.6	3	2	2	2	-	-	-	-	-	-	-	-
C306-CE6304/SURVEYING I												
C306.1	3	1	-	-	-	-	-	-	2	-	-	2
C306.2	3	3	-	-	-	-	-	-	2	-	-	1
C306.3	3	3	-	-	-	-	-	-	2	-	-	-
C306.4	2	1	1	-	-	-	-	-	2	-	-	-
C306.5	3	1	-	-	-	-	-	-	2	-	-	2
C306.6	3	3	-	-	-	-	-	-	2	-	-	1
C307- CE6311/ SURVEYING PRACTICAL I												
C307.1	3	-	2	-	-	-	-	-	-	-	2	2
C307.2	3	-	2	-	-	-	-	-	2	-	2	2
C307.3	3	2	2	2	-	-	2	-	2	-	2	2
C307.4	3	2	2	2	-	-	2	-	2	-	2	2
C307.5	3	-	2	2	-	-	2	-	2	-	2	2
C307.6	3	-	2	2	-	2	2	-	2	-	2	2
C308- CE6312/ COMPUTER AIDED BUILDING DRAWING												
C308.1	-	-	-	-	3	-	-	-	-	3	-	2
C308.2	-	-	-	-	3	-	-	-	-	3	-	2

C308.3	-	-	-	-	3	-	-	-	-	3	-	2
C308.4	-	-	-	-	3	-	-	-	-	3	-	2
C308.5	-	-	-	-	3	-	-	-	-	3	-	2
C308.6	-	-	-	-	3	-	-	-	-	3	-	2
C401-MA6459/NUMERICAL METHODS												
C401.1	3	3	-	2	2	-	-	-	-	-	-	1
C401.2	3	2	-	2	2	-	-	-	-	-	-	1
C401.3	3	3	-	3	2	-	-	-	-	-	-	1
C401.4	3	2	2	-	-	-	-	-	-	-	-	2
C401.5	3	2	2	-	-	-	-	-	-	-	-	2
C401.6	2	2	1	-	-	-	-	-	-	-	-	2
C402-CE6401/CONSTRUCTION MATERIALS												
C402.1	2	-	-	-	-	-	-	-	-	1	1	2
C402.2	2	2	3	-	3	-	-	-	-	1	2	2
C402.3	-	-	-	-	3	-	2	-	-	1	1	2
C402.4	2	2	-	-	-	-	2	-	-	1	2	2
C402.5	2	-	3	-	-	-	2	-	-	1	2	2
C402.6	-	-	-	-	-	3	2	-	-	1	1	2
C403-CE6402/STRENGTH OF MATERIALS												
C403.1	3	3	2	-	-	-	1	-	-	-	-	3
C403.2	3	3	2	-	-	-	-	-	-	-	-	3
C403.3	3	3	2	-	-	-	1	-	-	-	-	3
C403.4	3	3	2	-	-	-	-	-	-	-	-	3
C403.5	3	3	2	-	-	-	1	-	-	-	-	3
C403.6	3	3	2	-	-	-	-	-	-	-	-	3
C404-CE6403/APPLIED HYDRAULIC ENGINEERING												
C404.1	2	2	2	2	-	-	-	-	2	-	2	-
C404.2	2	2	2	2	-	-	-	-	2	-	2	-
C404.3	2	2	2	2	-	-	-	-	2	-	2	-
C404.4	2	2	2	-	-	-	-	-	2	-	2	-
C404.5	2	2	2	-	-	-	-	-	2	-	2	-

C404.6	2	-	-	-	-	-	-	-	-	-	-	2
C405-CE6404/SURVEYING II												
C405.1	3	2	2	-	2	-	2	-	-		2	-
C405.2	3	-	2	-	2	-	2	-	-		2	-
C405.3	3	-	2	2	2	-		-	-	2	2	-
C405.4	3	2	2	-	2	-	2	-	-	2		-
C405.5	3	2	-	-	2	2		-	-	2		-
C405.6	3	2	-	-	2	-	2	-	-	2	2	-
C406-CE6405/SOIL MECHANICS												
C406.1	2	2	-	2	2	-	2	-	2	-	2	2
C406.2	2	2	-	-	-	-	-	-	-	-	-	2
C406.3	2	2	-	2	-	-	-	-	2	-	-	-
C406.4	2	2	-	2	-	-	-	-	-	-	-	-
C406.5	2	2	2	2	2	-	-	-	2	-	-	-
C406.6	2	-	-	2	-	-	-	-	-	-	-	-
C407-CE6411/ STRENGTH OF MATERIALS LABORATORY												
C407.1	2	3	2	3	2	2	-	-	-	-	-	2
C407.2	2	2	2	2	2	3	-	-	-	-	-	3
C407.3	2	3	3	3	2	2	-	-	-	-	-	2
C407.4	2	2	2	2	2	3	-	-	-	-	-	3
C407.5	2	2	2	3	3	2	-	-	-	-	-	2
C407.6	2	3	2	2	2	3	-	-	-	-	-	2
C408- CE6412 / HYDRAULIC ENGINEERING LABORATORY												
C408.1	1	-	1	2	2	-	-	2	-	2	3	-
C408.2	1	1	1	-	2	-	3	3	-	-	1	-
C408.3	1	1	-	2	2	-	-	-	3	-	1	-
C408.4	1	1	-	-	2	-	3	-	-	2	1	-
C408.5	2	-	2	2	2	-	-	-	-		1	-
C408.6	1	-	1	2	2	-	-	2	-	2	3	-
C409-CE6413/SURVEYING II LABORATORY												
C409.1	2	2	2	-	2	-	2	-	-	-	1	-

C409.2	2	-	2	-	2	-	2	-	-	-	1	-
C409.3	-	-	2	2	2	-	-	-	-	2	1	-
C409.4	-	2	2	-	2	-	2	-	-	2	-	-
C409.5	1	2	-	-	2	1	-	-	-	2	-	-
C409.6	-	2	-	-	2	-	2	-	-	2	2	-
C501-CE6501/STRUCTURAL ANALYSIS I												
C501.1	3	2	-	-	-	2	-	-	-	-	-	-
C501.2	2	3	-	-	-	2	-	-	-	-	-	-
C501.3	3	2	-	-	-	2	-	-	-	-	-	-
C501.4	3	3	-	-	-	2	-	-	-	-	-	-
C501.5	3	2	-	-	-	2	-	-	-	-	-	-
C501.6	3	3	1	-	-	-	-	-	-	-	-	-
C502-CE6502/FOUNDATION ENGINEERING												
C502.1	3	3	-	-	2	-	-	-	-	2	-	2
C502.2	3	3	2	-	-	-	-	-	-	-	-	2
C502.3	3	3	2	-	-	-	-	-	-	-	-	2
C502.4	3	3	2	-	-	-	-	-	-	3	2	2
C502.5	3	3	-	-	-	-	-	-	-	-	-	-
C502.6	3		-	-	2	2	-	-	-	2	2	2
C503-CE6503/ENVIRONMENTAL ENGINEERING I												
C503.1	3	1	-	-	-	1	1	-	-	-	-	-
C503.2	3	2	2	-	-	2	-	-	-	-	-	-
C503.3	3	2	2	2	-	2	2	-	-	-	-	-
C503.4	3	1	-	-	-	1	-	-	-	-	-	-
C503.5	3	2	2	-	-	2	-	-	-	-	-	-
C503.6	3	2	2	-	-	2	2	-	-	-	-	-
C504-CE6504/HIGHWAY ENGINEERING												
C504.1	3	-	2	-	2	3	-	2	-	-	-	1
C504.2	-	2	3	-	-	2	-	-	-	2	-	2
C504.3	2	-	2	-	-	2	-	-	-	2	-	1
C504.4	-	2		-	-	2	-	-	-	2	-	1

C509-CE6512/ SURVEY CAMP												
C509.1	3		-	-	-	-	-	-	-	-	-	1
C509.2	3	2	-	-	-	-	-	-	3	-	-	2
C509.3	2	2	-	-	-	-	-	-	3	-	-	2
C509.4	3	2	-	-	-	-	-	-	3	-	-	1
C509.5	3	1	-	-	-	-	-	-	2	-	-	1
C509.6	3	2	-	-	3	-	-	-	3	-	-	2
C601-CE6601/DESIGN OF REINFORCED CONCRETE & BRICK MASONRY												
C601.1	2	2	2	-	-	-	-	1	-	-	-	1
C601.2	2	2	2	-	-	-	-	1	-	-	-	1
C601.3	2	2	2	-	-	-	-	1	-	-	-	1
C601.4	2	2	2	-	-	-	-	1	-	-	-	1
C601.5	2	2	2	-	-	-	-	1	-	-	-	1
C601.6	2	2	2	-	-	-	-	1	-	-	-	1
C602-CE6602/STRUCTURAL ANALYSIS II												
C602.1	3	3	2	2	-	1	1	-	-	-	1	2
C602.2	3	3	2	2	-	1	1	-	-	-	1	2
C602.3	3	3	2	2	-	-	1	-	-	-	-	1
C602.4	3	3	2	2	-	-	-	-	-	-	-	1
C602.5	3	3	2	2	-	-	-	-	-	-	.-	1
C602.6	3	3	2	2	-	2	1	-	-	-	2	2
C603-CE6603/DESIGN OF STEEL STRUCTURES												
C603.1	2	2	3	2	2	2	-	-	2	-	-	2
C603.2	3	2	3	2	2	2	-	-	2	-	-	3
C603.3	2	3	3	2	2	2	-	-	2	-	-	2
C603.4	2	3	3	2	2	2	-	-	2	-	-	3
C603.5	3	2	3	2	2	2	-	-	2	-	-	3
C603.6	3	2	3	2	3	2	-	-	2	-	-	2
C604-CE6604/RAILWAYS, AIRPORTS AND HARBOUR ENGINEERING												
C604.1	2	2	-	-	-	2	1	-	3	2	-	2
C604.2	-	3	2	-	3	-	-	-	2	-	-	-

C608.6	2	-	1	-	-	-	-	2	-	-	2	-
C701-CE6701/STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING												
C701.1	3	2	2	-	-	2	2	-	-	-	-	3
C701.2	3	2	2	-	-	2	2	-	-	-	-	3
C701.3	2	-	-	-	-	-	2	-	-	-	-	3
C701.4	2	-	-	-	-	-	2	-	-	-	-	3
C701.5	2	-	-	-	-	-	2	-	-	-	-	.3
C701.6	3	2	2	-	-	2	2	-	-	-	-	3
C702-CE6702/PRESTRESSED CONCRETE STRUCTURES												
C702.1	2	2	2	-	-	-	2	-	2	-	-	-
C702.2	3	2	-	-	-	-	-	-	2	-	-	-
C702.3	3	2	-	-	-	-	-	-	2	-	-	-
C702.4	3	2	-	-	-	-	-	-	2	-	-	-
C702.5	2	2	-	-	-	-	-	-	2	-	-	-
C702.6	-	-	2	-	-	-	2	-	-	-	-	-
C703-CE6703/WATER RESOURCES AND IRRIGATION ENGINEERING												
C703.1	-	-	3	-	-	2	3	-	-	-	-	3
C703.2	-	-	2	-	2	2	3	2	-	-	2	3
C703.3	3	-	2	-	2	-	3	-	2	-	2	3
C703.4	2	-	-	2	-	3	-	-	-	-	-	3
C703.5	-	-	-	-	-	-	2	-	2	-	-	-
C703.6	2	-	-	-	-	-	3	2	3	-	-	-
C704-CE6704/ESTIMATION AND QUANTITY SURVEYING												
C704.1	2	2	-	-	-	2	-	-	-	-	-	2
C704.2	2	2	-	-	-	2	-	-	-	-	-	2
C704.3	2	2	-	-	-	2	-	-	-	-	-	2
C704.4	2	2	-	-	-	2	-	-	-	-	-	2
C704.5	2	2	-	-	-	2	-	-	-	-	-	2
C704.6	2	2	-	-	-	2	-	-	-	-	-	2
C705-CE6007/HOUSING PLANNING MANAGEMENT												
C705.1	2	-	2	-	-	-	2	-	-	-	2	-

C705.2	2	-	2	-	-	-	2	-	-	-	-	-
C705.3	2	-	-	-	-	-	2	-	-	-	-	-
C705.4	2	-	-	-	-	-	2	2	-	-	-	-
C705.5	2	-	-	-	-	2	2	-	-	-	2	-
C705.6	2	-	-	-	-	-	2	-	-	-	-	-
C706-EN6501/MUNICIPAL SOLID WASTE MANAGEMENT												
C706.1	2	-	2	-	-	-	-	2	-	-	1	1
C706.2	2	-	2	-	-	2	-	-	-	-	-	-
C706.3	2	2	2	2		1	1					1
C706.4	3	2	2	3	1		1					1
C706.5	3		2		1	2	2	1			1	1
C706.6	2	1					3		2		1	2
C707-CE6711/ COMPUTER AIDED DESIGN AND DRAWING LABORATORY												
C707.1	3	3	3	2	2	2	-	2	2	2	3	-
C707.2	3	2	3	2	2	-	-	-	-	3	2	2
C707.3	3	2	2	2	2	-	-	-	-	2	2	-
C707.4	3	3	2	2	3	-	2	-	-	2	2	-
C707.5	3	3	3	2	2	-	-	-	-	3	2	-
C707.6	2	2	3	2	3	-	-	2	-	2	2	-
C708-CE6712/ DESIGN PROJECT												
C708.1	3	3	-	2	-	-	2	-	-	-	-	3
C708.2	3	3	3	3	2	-	-	-	-	-	-	-
C708.3	3	-	2	1	3	-	-	-	-	-	-	-
C708.4	3	-	-	-	3	-	-	-	-	3	-	-
C708.5	3	-	2	1	3	-	-	-	-	-	-	-
C708.6	3	-	-	-	3	-	-	-	-	3	-	-
C801-MG6851/PRINCIPLES OF MANAGEMENT												
C801.1	-	-	-	-	-	-	2	-	2	-	3	-
C801.2	3	-	-	-	-	-	2	-	2	2	3	-
C801.3	2	-	-	-	-	-	-	2	-	-	-	3
C801.4	3	-	-	-	-	-	-	3	2	-	-	1

C801.5	1	-	-	-	-	-	-	-	3	-	3	-
C801.6	1	-	-	-	-	-	-	-	2	3	2	1
C802-CE6016/PREFABRICATED STRUCTURES												
C802.1	3	2	2	-	-	1	1	-	1	-	-	-
C802.2	3	2	3	-	-	1	1	-	1	-	-	-
C802.3	3	2	2	-	-	1	-	-	1	-	-	-
C802.4	3	2	2	-	-	1	-	-	1	-	-	-
C802.5	3	2	2	-	-	1	-	-	1	-	-	-
C802.6	3	2	2	-	-	1	-	-	1	-	-	-
C803-CE6021/REPAIR AND REHABILITATION OF STRUCTURES												
C803.1	1	1	-	1	-	2	1	1	-	-	-	1
C803.2	1	2	-	1	-	1	2	1	-	-	-	1
C803.3	1	1	-	1	-	1	1	1	-	-	-	1
C803.4	1	2	-	2	-	1	1	2	-	-	-	1
C803.5	2	1	-	1	-	2	1	1	-	-	-	1
C803.6	2	1	-	1	-	1	1	1	-	-	-	1
C804-CE6811/ PROJECT WORK												
C804.1	3	3	-	2	-	-	2	-	-	-	-	3
C804.2	3	3	3	3	2	-	-	-	-	-	-	-
C804.3	3	-	2	1	3	-	-	-	-	-	-	-
C804.4	3	-	-	-	3	-	-	-	-	3	-	-
C804.5	3	-	2	1	3	-	-	-	-	-	-	-
C804.6	3	-	-	-	3	-	-	-	-	3	-	-

Regulation – 2013 – PG

M.E - STRUCTURAL ENGINEERING

S101- MA7154 - Advanced Mathematical Methods	
S101.1	To familiarize the students in the field of differential equations.
S101.2	To enable them to solve boundary value problems associated with engineering applications using transform methods.
S101.3	To expose the students to the concepts of calculus of variations.
S101.4	To introduce conformal mappings and their applications to fluid flows and heat flows.
S101.5	To give the students a complete picture of tensor analysis.
S102 - ST7101 – Concrete Structures	
S102.1	Explain structural behaviour of flexural members and columns
S102.2	Design compression members and construct interaction diagrams
S102.3	Design the special elements like corbels, deep beams and grid floors
S102.4	Design flat slab and spandrel beams
S102.5	Predict the moment curvature behavior and design and detail concrete elements based on ductility
S103 - ST7102 – Structural Dynamics	
S103.1	Do vibration analysis of system/structures with single degree of freedom and can explain the method of damping the systems
S103.2	Do dynamic analysis of system/structures with Two degrees of freedom under free and forced vibration
S103.3	Do dynamic analysis of system/structures with Multi degrees of freedom under free and forced vibration
S103.4	Explains the responses of the dynamics
S103.5	Derive a mathematical model of continuous system and do a dynamic analysis under free and forced vibration
S104 - ST7103 - 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
S104.2	Demonstrate the application of plane stress and plane strain in a given situation in both cartesian and polar coordinate systems

S104.3	Solve torsion problems in circular and non-circular cross-sections
S104.4	Analyse beams resting on elastic foundations
S104.5	Solve analytically the simple boundary value problems with elasto-plastic and strain hardening properties
S105 - CN7001 – Advanced Concrete Technology	
S105.1	Explain structural behavior of flexural members and columns
S105.2	Design compression members and construct interaction diagrams
S105.3	Design the special elements like corbels, deep beams and grid floors
S105.4	Design flat slab and spandrel beams
S105.5	Predict the moment curvature behavior and design and detail concrete elements based on ductility
S106 -ST7002 – Maintenance and Rehabilitation Of Structures	
S106.1	Explain the importance of maintenance assessment of distressed structures
S106.2	Apply the knowledge on Quality assurance for concrete based on Strength and Durability
S106.3	Identify various repair materials and advancements in concrete
S106.4	Explain the knowledge on Concrete protection methods Structural health monitoring
S106.5	Select Various strengthening and repair methods for different cases
S201 - ST7201 - Finite Element Analysis	
S201.1	Formulate a finite element problem using basic mathematical principles
S201.2	Explain the various types of elements and Select the appropriate element for modelling
S201.3	Analyze a frame using truss element
S201.4	Formulate and analyze two and three dimensional solid finite element problems
S201.5	Analyze a shells, thick and thin plate and explain dynamic analysis in FEM
S202 - ST7202 - Experimental Techniques and Instrumentation	
S202.1	Do the mix proportion using IS and ACI codal provisions.
S202.2	Prepare the self-compacting concrete and study the flow characteristics of SCC
S202.3	Identify the proper portion of mineral and chemical admixture for concrete.
S202.4	Test the concrete in a non-destructive manner using rebound hammer.
S202.5	Know the permeability characteristics of concrete.

S203 - ST7203 – Steel Structures	
S203.1	Design the steel members such as purlins, gable wind girders, base plates subjected to combined forces
S203.2	Explain and design the different types of steel connections such as welded, bolted and moment resisting connections
S203.3	Analyse and design the industrial structures such as trusses, portal frames subjected to seismic forces
S203.4	Explain the effect of axial force and shear force on steel structures and analyse the continuous beams, frames using plastic theory
S203.5	Evaluate the behaviour and design of compression and flexural members
S204 - ST7204 - Earthquake Analysis and Design of Structures	
S204.1	Explain the effects of earthquake
S204.2	Explain the Earthquake resistant Masonry Structures
S204.3	Explain the Earthquake resistant RCC Structures
S204.4	The end of this course the students will be able to understand the causes and effect of earthquake.
S204.5	They will able to design masonry and RC structures to the earthquake forces as per the recommendations of IS codes of practice.
S205 - ST7006 – Design Of Bridges	
S205.1	Explain the different types of bridges and design philosophies
S205.2	Design a RC solid slab culvert bridge
S205.3	Design a RC Tee Beam and Slab bridge
S205.4	Design the bridge bearings and substructure
S205.5	Explain the design of PSC bridges, box girder bridges, truss bridges
S206 - ST7008 – Pre Stressed Concrete Structures	
S206.1	Identify the various methods of prestressing
S206.2	Design the beams for shear, bond and torsion
S206.3	Design the continuous beams
S206.4	Design the water tank, piles and masts
S206.5	Analyze and design the composite beams

S207 - ST7211 - Advanced Structural Engineering Laboratory	
S207.1	Do the mix proportion using IS and ACI codal provisions.
S207.2	Prepare the self-compacting concrete and study the flow characteristics of SCC
S207.3	Identify the proper portion of mineral and chemical admixture for concrete.
S207.4	Test the concrete in a non-destructive manner using rebound hammer.
S207.5	Know the permeability characteristics of concrete.
S301 - ST7016 – Pre Fabricated Structures	
S301.1	Explain the design principles involved in prefabrication
S301.2	Detail the different types of connection
S301.3	Design for stripping forces during manufacture
S301.4	Determine the forces in shear walls
S301.5	Identify the different roof trusses used in industrial buildings
S302 - ST7013 – Design Of Concrete Composite Structures	
S302.1	Explain composite action
S302.2	Design composite elements
S302.3	Design connections
S302.4	Explain the concept of design of composite box girder bridges
S302.5	Study and evaluate case studies
S303- ST7014 – Industrial Structures	
S303.1	Develop the concept of planning & functional requirement of industrial standards.
S303.2	Analyse and design of Steel Gantry girders & Crane girders and RCC design of corbels, nibs and staircase.
S303.3	Analyse & design of cooling towers, bunker, silos and pipe supporting structures.
S303.4	Analyse and design of Steel transmission line towers and chimneys.
S303.5	Design foundations for cooling tower, chimneys and turbo generator.
S304 -ST7312 - Practical Training	
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.
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.
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.
S304.4	To development skills in facing and solving the field problems.

S304.5	They are trained in tracking a practical field/ industry oriented problem related to structural Engineering
S305 - ST7313 - Project Work (Phase – I)	
S305.1	To identify a specific problem for the current need of the society
S305.2	To collecting information related to the same through detailed review of literature.
S305.3	To develop the methodology to solve the identified problem.
S305.4	To train the students in preparing project reports and to face reviews and viva-voce examination.
S305.5	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.
S306 - ST7311 – Structural Seminar	
S306.1	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.
S306.2	To be able to acquire the skills of oral presentation and to acquire technical writing abilities for conferences.
S306.3	To work on a specific technical topic in Structural Engineering and acquire the skills of written and oral presentation.
S306.4	To acquire writing abilities for seminars and conferences.
S306.5	The students will be trained to face an audience and to tackle any problem during group discussion in the Interviews.
S401 - ST7411 – Project Work (Phase – II)	
S401.1	To solve the identified problem based on the formulated methodology.
S401.2	To develop skills to analyze and discuss the test results, and make conclusions.
S401.3	On completion of the project work students will be in a position
S401.4	To take up any challenging practical problem and find better solutions.
S401.5	At the end of the course the students will have a clear idea of his/her area of work

S.No	Course Outcome											
S101- MA7154 - Advanced Mathematical Methods												
S101.1	3	-	-	-	-	-	-	-	-	-	-	2
S101.2	-	2	-	-	-	-	-	-	-	-	-	-
S101.3	-	-	-	-	-	-	-	-	-	-	-	2
S101.4	-	2	-	-	-	-	-	-	-	-	-	-
S101.5	2	-	-	-	-	-	-	-	-	2	-	-

S102 - ST7101 – Concrete Structures												
S102.1	2	1	2	1	-	2	2	2	3	3	3	3
S102.2	2	-	2	2	2	1	-	2	3	3	2	2
S102.3	2	2	2	2	2	2	-	2	2	3	2	2
S102.4	2	-	2	-	2	1	-	2	2	2	2	2
S102.5	2	2	2	1	2	2	-	2	3	3	2	2
S103 - ST7102 – Structural Dynamics												
S103.1	3	-	-	-	-	-	2	-	-	-	-	2
S103.2	-	3	2	-	-	-	-	-	-	-	-	2
S103.3	-	3	2	-	-	2	-	-	-	-	-	-
S103.4	3	-	-	2	3	-	-	-	-	-	-	-
S103.5	-	-	-	-	3	-	-	-	2	-	-	3
S104 - ST7103 - Theory Of Elasticity and Plasticity												
S104.1	2	3	2	2	2	2	-	-	2	-	-	2
S104.2	3	2	3	2	2	2	-	-	2	-	-	3
S104.3	2	3	2	2	2	3	-	-	2	-	-	2
S104.4	3	3	3	2	2	2	-	-	2	-	-	3
S104.5	2	3	2	2	2	3	-	-	2	-	-	2
S105 - CN7001 – Advanced Concrete Technology												
S105.1	3	2	-	-	-	-	-	-	-	-	-	-
S105.2	3	2	-	2	-	-	-	-	-	-	-	-
S105.3	3	2	-	-	-	-	-	-	-	-	-	-
S105.4	3	2	2	-	-	-	-	-	-	-	-	-
S105.5	3	2	2	2	-	-	-	-	-	-	-	-
S106 -ST7002 – Maintenance and Rehabilitation Of Structures												
S106.1	3	1	-	-	-	-	-	-	2	-	-	2
S106.2	3	3	-	-	-	-	-	-	2	-	-	1
S106.3	3	3	-	-	-	-	-	-	2	-	-	-
S106.4	2	1	1	-	-	-	-	-	2	-	-	-
S106.5	3	1	-	-	-	-	-	-	2	-	-	2

S201 - ST7201 - Finite Element Analysis												
S201.1	3	-	2	-	-	-	-	-	-	-	2	2
S201.2	3	-	2	-	-	-	-	-	2	-	2	2
S201.3	3	2	2	2	-	-	2	-	2	-	2	2
S201.4	3	2	2	2	-	-	2	-	2	-	2	2
S201.5	3	-	2	2	-	-	2	-	2	-	2	2
S202 - ST7202 - Experimental Techniques and Instrumentation												
S202.1	-	-	-	-	3	-	-	-	-	3	-	2
S202.2	-	-	-	-	3	-	-	-	-	3	-	2
S202.3	-	-	-	-	3	-	-	-	-	3	-	2
S202.4	-	-	-	-	3	-	-	-	-	3	-	2
S202.5	-	-	-	-	3	-	-	-	-	3	-	2
S203 - ST7203 – Steel Structures												
S203.1	3	3	-	2	2	-	-	-	-	-	-	1
S203.2	3	2	-	2	2	-	-	-	-	-	-	1
S203.3	3	3	-	3	2	-	-	-	-	-	-	1
S203.4	3	2	2	-	-	-	-	-	-	-	-	2
S203.5	3	2	2	-	-	-	-	-	-	-	-	2
S204 - ST7204 - Earthquake Analysis and Design of Structures												
S204.1	2	-	-	-	-	-	-	-	-	1	1	2
S204.2	2	2	3	-	3	-	-	-	-	1	2	2
S204.3	-	-	-	-	3	-	2	-	-	1	1	2
S204.4	2	2	-	-	-	-	2	-	-	1	2	2
S204.5	2	-	3	-	-	-	2	-	-	1	2	2
S205 - ST7006 – Design Of Bridges												
S205.1	3	3	2	-	-	-	1	-	-	-	-	3
S205.2	3	3	2	-	-	-	-	-	-	-	-	3
S205.3	3	3	2	-	-	-	1	-	-	-	-	3
S205.4	3	3	2	-	-	-	-	-	-	-	-	3
S205.5	3	3	2	-	-	-	1	-	-	-	-	3

S206 - ST7008 – Pre Stressed Concrete Structures												
S206.1	2	2	2	2	-	-	-	-	2	-	2	-
S206.2	2	2	2	2	-	-	-	-	2	-	2	-
S206.3	2	2	2	2	-	-	-	-	2	-	2	-
S206.4	2	2	2	-	-	-	-	-	2	-	2	-
S206.5	2	2	2	-	-	-	-	-	2	-	2	-
S207 - ST7211 - Advanced Structural Engineering Laboratory												
S207.1	3	2	2	-	2	-	2	-	-		2	-
S207.2	3	-	2	-	2	-	2	-	-		2	-
S207.3	3	-	2	2	2	-		-	-	2	2	-
S207.4	3	2	2	-	2	-	2	-	-	2		-
S207.5	3	2	-	-	2	2		-	-	2		-
S301 - ST7016 – Pre Fabricated Structures												
S301.1	2	2	-	2	2	-	2	-	2	-	2	2
S301.2	2	2	-	-	-	-	-	-	-	-	-	2
S301.3	2	2	-	2	-	-	-	-	2	-	-	-
S301.4	2	2	-	2	-	-	-	-	-	-	-	-
S301.5	2	2	2	2	2	-	-	-	2	-	-	-
S302 - ST7013 – Design Of Concrete Composite Structures												
S302.1	2	3	2	3	2	2	-	-	-	-	-	2
S302.2	2	2	2	2	2	3	-	-	-	-	-	3
S302.3	2	3	3	3	2	2	-	-	-	-	-	2
S302.4	2	2	2	2	2	3	-	-	-	-	-	3
S302.5	2	2	2	3	3	2	-	-	-	-	-	2
S303- ST7014 – Industrial Structures												
S303.1	1	-	1	2	2	-	-	2	-	2	3	-
S303.2	1	1	1	-	2	-	3	3	-	-	1	-
S303.3	1	1	-	2	2	-	-	-	3	-	1	-
S303.4	1	1	-	-	2	-	3	-	-	2	1	-
S303.5	2	-	2	2	2	-	-	-	-		1	-

S304 -ST7312 - Practical Training												
S304.1	2	2	2	-	2	-	2	-	-	-	1	-
S304.2	2	-	2	-	2	-	2	-	-	-	1	-
S304.3	2	2	2	-	2	-	2	-	-	-	1	-
S304.4	2	-	2	-	2	-	2	-	-	-	1	-
S304.5	2	2	2	-	2	-	2	-	-	-	1	-
S305 - ST7313 - Project Work (Phase – I)												
S305.1	3	2	-	-	-	2	-	-	-	-	-	-
S305.2	2	3	-	-	-	2	-	-	-	-	-	-
S305.3	3	2	-	-	-	2	-	-	-	-	-	-
S305.4	3	3	-	-	-	2	-	-	-	-	-	-
S305.5	3	3	-	-	-	2	-	-	-	-	-	-
S306 - ST7311 – Structural Seminar												
S306.1	3	3	-	-	2	-	-	-	-	2	-	2
S306.2	3	3	2	-	-	-	-	-	-	-	-	2
S306.3	3	3	-	-	2	-	-	-	-	2	-	2
S306.4	3	3	2	-	-	-	-	-	-	-	-	2
S306.5	3	3	-	-	2	-	-	-	-	2	-	2
S401 - ST7411 – Project Work (Phase – II)												
S401.1	3	1	-	-	-	1	1	-	-	-	-	-
S401.2	3	2	2	2	-	2	2	-	-	-	-	-
S401.3	3	2	2	2	-	2	2	-	-	-	-	-
S401.4	3	2	2	-	-	2	-	-	-	-	-	-
S401.5	3	2	2	2	-	2	2	-	-	-	-	-


PRINCIPAL

PRINCIPAL
M.A.E.T. ENGINEERING COLLEGE
GUNDUR TIRUCHIRAPPALLI-620 007

Regulation – 2017 - UG

S.No	Course Outcome
SEM-III	
C301- MA8353 Transforms and Partial Differential Equations	
C301.1	To introduce the basic concepts of PDE for solving standard partial differential equations.
C301.2	To introduce Fourier series analysis which is central to many applications in engineering apart from its use in solving boundary value problems
C301.3	To acquaint the student with Fourier series techniques in solving heat flow problems used in various situations.
C301.4	To acquaint the student with Fourier transform techniques used in wide variety of Situations.
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.
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
C302-CE8301 STRENGTH OF MATERIALS I	
C302.1	Understand the concepts of stress and strain, principal stresses and principal planes.
C302.2	Determine Shear force and bending moment in beams and understand concept of theory of simple bending.
C302.3	Calculate the deflection of beams by different methods and selection of method for determining slope or deflection.
C302.4	Apply basic equation of torsion in design of circular shafts and helical springs.
C302.5	Analyze the pin jointed plane and space trusses
C302.6	After successful completion of the course, the students will have adequate knowledge on materials strength and its behavior under external loading.
C303-CE8302 FLUID MECHANICS	
C303.1	Get a basic knowledge of fluids in static, kinematic and dynamic equilibrium.
C303.2	Understand and solve the problems related to equation of motion.
C303.3	Gain knowledge about dimensional and model analysis.

C303.4	Learn types of flow and losses of flow in pipes.
C303.5	Understand and solve the boundary layer problems.
C303.6	After successful completion of the course, the students will have 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
C304.2	Measuring Horizontal angle and vertical angle using different instruments
C304.3	Methods of Leveling and setting Levels with different instruments
C304.4	Concepts of astronomical surveying and methods to determine time, longitude, latitude and azimuth
C304.5	Concept and principle of modern surveying.
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.
C305 - CE8391 CONSTRUCTION MATERIALS	
C305.1	Compare the properties of most common and advanced building materials.
C305.2	Understand the typical and potential applications of lime, cement and aggregates
C305.3	Know the production of concrete and also the method of placing and making of concrete Elements.
C305.4	Understand the applications of timbers and other materials
C305.5	Understand the importance of modern material for construction.
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.
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.
C306.2	Will get basics knowledge on properties of minerals.
C306.3	Gain knowledge about types of rocks, their distribution and uses.
C306.4	Will understand the methods of study on geological structure.
C306.5	Will understand the application of geological investigation in projects such as dams,

	tunnels, bridges, roads, airport and harbor
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.
C307 - CE8311 CONSTRUCTION MATERIALS LABORATORY	
C307.1	Conduct Quality Control tests on Fine Aggregates
C307.2	Conduct Quality Control tests on Coarse Aggregates
C307.3	Conduct Quality Control tests on fresh concrete
C307.4	Determine the strength properties of hardened concrete
C307.5	Perform Quality Control tests on Bricks, blocks and tiles
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.
C308-CE8361 SURVEYING LABORATORY	
C308.1	Gain practical knowledge on handling basic survey instruments
C308.2	Gain practical knowledge on handling Theodolite, Tacheometry
C308.3	Gain practical knowledge on handling Total Station and GPS
C308.4	Gain adequate knowledge to carryout Triangulation and Astronomical surveying
C308.5	Gain adequate knowledge on general field marking for various engineering projects and Location of site
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.
C309 - HS8381- INTERPERSONAL SKILLS/LISTENING AND SPEAKING	
C309.1	Listen and respond appropriately.
C309.2	Participate in group discussions
C309.3	Make effective presentations
C309.4	Participate confidently and appropriately in conversations both formal and informal
C309.5	Improve general and academic listening skills
C309.6	After successful completion of the laboratory course, the students will have ability to communicate with confidence.
SEM-IV	
C401 - MA8491 NUMERICAL METHODS	
C401.1	Understand the basic concepts and techniques of solving algebraic and transcendental equations

C401.2	Appreciate the numerical techniques of interpolation and error approximations in various intervals in real life situations.
C401.3	Apply the numerical techniques of differentiation and integration for engineering problems.
C401.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations
C401.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications
C401.6	After successful completion of the laboratory course, the students will have adequate knowledge on applying these mathematical formulations in civil engineering applications
C402 - CE8401 CONSTRUCTION TECHNIQUES AND PRACTICES	
C402.1	Know the different construction techniques and structural systems
C402.2	Understand various techniques and practices on masonry construction, flooring, and roofing.
C402.3	Plan the requirements for substructure construction.
C402.4	Know the methods and techniques involved in the construction of various types of super structures
C402.5	Select, maintain and operate hand and power tools and equipment used in the building construction sites.
C402.6	After successful completion of the course, the students will have understood the different construction techniques practices being followed in the construction industry.
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.
C403.2	Analyze propped cantilever, fixed beams and continuous beams using theorem of three moment equation for external loadings and support settlements.
C403.3	Find the load carrying capacity of columns and stresses induced in columns and cylinders
C403.4	Determine principal stresses and planes for an element in three dimensional state of stress and study various theories of failure
C403.5	Determine the stresses due to Unsymmetrical bending of beams, locate the shear center, and find the stresses in curved beams.
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.
C404 - CE 8403 APPLIED HYDRAULIC ENGINEERING	
C404.1	Apply their knowledge of fluid mechanics in addressing problems in open channels.
C404.2	Able to identify an effective section for flow in different cross sections.
C404.3	To solve problems in uniform, gradually and rapidly varied flows in steady state conditions.
C404.4	Understand the principles, working and application of turbines.
C404.5	Understand the principles, working and application of pumps.
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
C405 - CE8404 CONCRETE TECHNOLOGY	
C405.1	The various requirements of cement, aggregates and water for making concrete
C405.2	The effect of admixtures on properties of concrete
C405.3	The concept and procedure of mix design as per IS method
C405.4	The properties of concrete at fresh and hardened state
C405.5	The importance and application of special concretes.
C405.6	After successful completion of the course, the students will have understanding on properties of concrete and its applications.
C406 -CE8491 SOIL MECHANICS	
C406.1	Classify the soil and assess the engineering properties and index properties
C406.2	Understand the stress concepts in soils
C406.3	Understand and identify the settlement in soils
C406.4	Determine the shear strength of soil
C406.5	Analyze both finite and infinite slopes
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.
C407 -CE8481 STRENGTH OF MATERIALS LABORATORY	
C407.1	Acquire required knowledge in the area of testing steel rod
C407.2	Acquire required knowledge in the area of testing wood
C407.3	Acquire required knowledge in the area of testing metal

C407.4	Acquire required knowledge in the area of testing components of structural elements
C407.5	Learn deflection and compression test
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.
C408 - CE8461 HYDRAULIC ENGINEERING LABORATORY	
C408.1	The students will be able to study the Characteristics of pumps
C408.2	The students will be able to study the Characteristics of turbine
C408.3	The students will be able to measure flow in pipes and determine frictional losses.
C408.4	The students will be able to develop characteristics of pumps and turbines
C408.5	The students will be able to verify the principles studied in theory by performing the experiments in lab.
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
C409.2	Write winning job applications.
C409.3	Read and evaluate texts critically.
C409.4	Display critical thinking in various professional contexts.
C409.5	Ability to write manuscripts and testimonials
C409.6	After successful completion of the laboratory course, the students will have ability to read and write like a professional.
SEM-V	
C501- CE8501 DESIGN OF REINFORCED CEMENT CONCRETE ELEMENTS	
C501.1	Understand the various design methodologies for the design of RC elements.
C501.2	Know the analysis and design of flanged beams by limit state method and sign of beams for shear, bond and torsion.
C501.3	Design the various types of slabs and staircase by limit state method.
C501.4	Design columns for axial, uniaxial and biaxial eccentric loadings.
C501.5	Design of footing by limit state method.
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.
C502-CE8502 STRUCTURAL ANALYSIS I	
C502.1	Analyze continuous beams, pin-jointed indeterminate plane frames and rigid plane frames by strain energy method
C502.2	Analyse the continuous beams and rigid frames by slope deflection method.
C502.3	Understand the concept of moment distribution and analysis of continuous beams and rigid frames with and without sway.
C502.4	Analyse the indeterminate pin jointed plane frames continuous beams and rigid frames using matrix flexibility method.
C502.5	Understand the concept of matrix stiffness method and analysis of continuous beams, pin jointed trusses and rigid plane frames.
C502.6	After successful completion of the course, the students will have adequate knowledge on analysis of different structural elements.
C503 - EN8491 WATER SUPPLY ENGINEERING	
C503.1	An insight into the structure of drinking water supply systems, including water transport, treatment and distribution
C503.2	The knowledge in various unit operations and processes in water treatment
C503.3	An ability to design the various functional units in water treatment
C503.4	An understanding of water quality criteria and standards, and their relation to public health
C503.5	The ability to design and evaluate water supply project alternatives on basis of chosen
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.
C504-CE8591 FOUNDATION ENGINEERING	
C504.1	Understand the site investigation, methods and sampling.
C504.2	Get knowledge on bearing capacity and testing methods.
C504.3	Design shallow footings.
C504.4	Determine the load carrying capacity, settlement of pile foundation.
C504.5	Determine the earth pressure on retaining walls and analysis for stability.
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.

C505 -GI8013 ADVANCED SURVEYING	
C505.1	Know the astronomical surveying
C505.2	Do the photogrammetric surveying and interpretation
C505.3	Solve the field problems with Total station
C505.4	Know the GPS surveying and the data processing
C505.5	Understand the route surveys and tunnel alignments
C505.6	After successful completion of the course, the students will have acquired knowledge about handling advanced surveying equipment like Total Station.
C506 - ORO551 RENEWABLE ENERGY SOURCES	
C506.1	Understanding the physics of solar radiation.
C506.2	Ability to classify the solar energy collectors and methodologies of storing solar energy.
C506.3	Knowledge in applying solar energy in a useful way.
C506.4	Knowledge in wind energy and biomass with its economic aspects.
C506.5	Knowledge in capturing and applying other forms of energy sources like wind, biogas and geothermal energies.
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.
C507 - CE8511 SOIL MECHANICS LABORATORY	
C507.1	Classifying soil based on index properties of soils (coarse and fine).
C507.2	Classifying soil based on consistency limit of fine grained soils
C507.3	Interpreting the shear strength of all types of soils by conducting lab tests
C507.4	Interpreting the shear strength of all types of soils by conducting lab tests
C507.5	Understanding the engineering properties of soils by conducting field tests
C507.6	After successful completion of the laboratory course, the students will be able to do various in-situ and ex-situ soil testing.
C508 - CE8512 WATER AND WASTE WATER ANALYSIS LABORATORY	
C508.1	Quantify the pollutant concentration in water and wastewater
C508.2	Suggest the type of treatment required and amount of dosage required for the treatment
C508.3	Examine the conditions for the growth of micro-organisms

C508.4	Suggest the type of treatment required to reduce e-coli in water
C508.5	Compare the analysis of treated water among different treatments
C508.6	After successful completion of the laboratory course, the students will have acquired knowledge on conducting different water treatment ways.
C509 - CE8513 SURVEY CAMP	
C509.1	To use all surveying equipment, prepare LS &CS
C509.2	To prepare contour maps by triangulation method
C509.3	To prepare maps and grids by Trilateration method
C509.4	To prepare contour maps by rectangulation method
C509.5	To carryout surveying works related to land and civil engineering projects
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.
SEM-VI	
C601 - CE8601 DESIGN OF STEEL STRUCTURAL ELEMENTS	
C601.1	Understand the concepts of various design philosophies
C601.2	Design common bolted and welded connections for steel structures
C601.3	Design tension members and understand the effect of shear lag.
C601.4	Understand the design concept of axially loaded columns and column base connections.
C601.5	Understand specific problems related to the design of laterally restrained and unrestrained steel beams.
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.
C602 - CE8602STRUCTURAL ANALYSIS II	
C602.1	Draw influence lines for statically determinate structures and calculate critical stress resultants.
C602.2	Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams.
C602.3	Analyse of three hinged, two hinged and fixed arches.
C602.4	Analyse the suspension bridges with stiffening girders
C602.5	Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames.
C602.6	After successful completion of the course the student will be capable of analyzing various

	types of structural problems.
C603 - CE8603 IRRIGATION ENGINEERING	
C603.1	Have knowledge and skills on crop water requirements.
C603.2	Understand the methods and management of irrigation
C603.3	Gain knowledge on types of Impounding structures
C603.4	Understand methods of irrigation including canal irrigation.
C603.5	Get knowledge on water management on optimization of water use.
C603.6	After successful completion of the course the student will have the ability to understand knowledge on design of various irrigation structures.
C604 - CE8604 HIGHWAY ENGINEERING	
C604.1	Get knowledge on planning and aligning of highway
C604.2	Geometric design of highways
C604.3	Design flexible and rigid pavements.
C604.4	Gain knowledge on Highway construction materials, properties, testing methods
C604.5	Understand the concept of pavement management system, evaluation of distress and maintenance of pavements.
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.
C605 - EN8592 WASTEWATER ENGINEERING	
C605.1	An ability to estimate sewage generation and design sewer system including sewage pumping stations
C605.2	The required understanding on the characteristics and composition of sewage, self-purification of streams
C605.3	An ability to perform basic design of the unit operations and processes that are used in sewage treatment
C605.4	Understand the standard methods for disposal of sewage
C605.5	Gain knowledge on sludge treatment and disposal
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.
C606 - CE8004 URBAN PLANNING AND DEVELOPMENT	
C606.1	Describe basic issues in urban planning

C606.2	Formulate plans for urban and rural development and
C606.3	Plan and analyse socio economic aspects of urban and rural planning
C606.4	Design of urban development projects
C606.5	Manage urban development projects.
C606.6	After successful completion of this course, students will have understanding on urban and rural planning strategies for our country.
C607 - CE8612 IRRIGATION AND ENVIRONMENTAL ENGINEERING DRAWING	
C607.1	Acquire knowledge on design of tank and its components
C607.2	Gain knowledge on Design of Earth dam – Profile of Gravity Dam
C607.3	Acquire knowledge about cross drainage works
C607.4	Acquire knowledge about canal regulation structures
C607.5	Design water supply and sewage treatment structures
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.
C608 - CE8611 HIGHWAY ENGINEERING LABORATORY	
C608.1	Student knows the techniques to characterize various pavement materials through relevant tests.
C608.2	understanding the test on aggregates
C608.3	gain knowledge on test on bitumen
C608.4	Know about tests on bituminous mixes
C608.5	practice to utilize skid resistance tester/ benkel man beam
C608.6	After successful completion of the laboratory course the students acquire knowledge on various bitumen tests
C609 - HS8581 PROFESSIONAL COMMUNICATION	
C609.1	Make effective presentations
C609.2	Participate confidently in Group Discussions.
C609.3	Attend job interviews and be successful in them.
C609.4	Develop adequate Soft Skills required for the workplace
C609.5	Develop work culture while studying
C609.6	After successful completion of the course the student will be in a state to get easily adapted to the industry/corporate environment.

SEM-VII	
C701 - CE8701 ESTIMATION, COSTING AND VALUATION ENGINEERING	
C701.1	Estimate the quantities for buildings
C701.2	Rate Analysis for all Building works, canals, and Roads and Cost Estimate
C701.3	Understand types of specifications, principles for report preparation, tender notices types
C701.4	Gain knowledge on types of contracts
C701.5	Evaluate valuation for building and land.
C701.6	After successful completion of the course the student will be able to do cost estimation for various projects.
C702 - CE8702 RAILWAYS, AIRPORTS, DOCKS AND HARBOUR ENGINEERING	
C702.1	Understand the methods of route alignment and design elements in Railway Planning and Constructions.
C702.2	Understand the Construction techniques and Maintenance of Track laying and Railway stations.
C702.3	Gain an insight on the planning and site selection of Airport Planning and design.
C702.4	Analyze and design the elements for orientation of runways and passenger facility systems.
C702.5	Understand the various features in Harbours and Ports, their construction, coastal protection works and coastal Regulations to be adopted
C702.6	After successful completion of the course the students gain knowledge on planning design of airport, harbour and docks
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.
C703.2	Reduction, reuse and recycling of waste.
C703.3	Ability to plan and design systems for storage, collection, transport, processing and disposal of municipal solid waste.
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.
C703.5	Design and operation of sanitary landfill
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.

C704 -OEN751 GREEN BUILDING DESIGN	
C704.1	Understand about Embodied Energy in Building Materials
C704.2	Understand about Recycling and biomass resources.
C704.3	Acquire knowledge on providing comforts in building
C704.4	Acquire knowledge on utility of solar energy in buildings
C704.5	Understand about Urban Environment and Green Buildings
C704.6	After successful completion of the course the student will be able to design green buildings in their future endeavor.
C705 CE8703 STRUCTURAL DESIGN AND DRAWING	
C705.1	Design and draw reinforced concrete Cantilever and Counterfort Retaining Walls
C705.2	Design and draw flat slab as per code provisions
C705.3	Design and draw reinforced concrete and steel bridges
C705.4	Design and draw reinforced concrete and steel water tanks
C705.5	Design and detail the various steel trusses and gantry girders
C705.6	After successful completion of the course the student will be capable to design and detail the RCC and steel structures
C706 CE8711 CREATIVE AND INNOVATIVE PROJECT	
C706.1	Acquire knowledge on current social problems
C706.2	Ability to analyse the research articles
C706.3	Develop skills in project writing
C706.4	Develop skills in project presentation
C706.5	Finding a research gap in the field
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.
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.
C707.2	To develop skills in facing and solving the field problems.
C707.3	The student will be able to understand the intricacies of implementation textbook knowledge into practice
C707.4	The student will be able to understand the concepts of developments and implementation

	of new techniques
C707.5	To train them to present in the viva voce examination
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.
SEM-VIII	
C801 - GE8076 PROFESSIONAL ETHICS IN ENGINEERING	
C801.1	Gain insight on human values
C801.2	Acquire knowledge on engineering ethics
C801.3	Get familiar with Codes of Ethics
C801.4	Acquire knowledge on Professional Rights, Employee Rights , Intellectual Property Rights (IPR)
C801.5	Overcome unawareness on global issues due to ethical misuses
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.
C802 - CE8020 MAINTENANCE, REPAIR AND REHABILITATION OF STRUCTURES	
C802.1	Understand the importance of maintenance and assessment method of distressed structures.
C802.2	Understand the strength and durability properties, their effects due to climate and temperature.
C802.3	Understand recent development in concrete
C802.4	Understand the techniques for repair and protection methods
C802.5	Understand repair, rehabilitation and retrofitting of structures and demolition methods
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.
C803 CE8811 PROJECT WORK	
C803.1	To develop the ability to solve a specific problem right from its identification
C803.2	To develop ability to criticize and prepare review about the literatures.
C803.3	To encourage students to find a research gap and complete their project in a successful way
C803.4	To train the students in preparing project reports.

C803.5	To train the students to face reviews and viva voce examination.
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.

S.No	Course Outcome											
C301- MA8353 Transforms and Partial Differential Equations												
C301.1	3	-	-	-	-	-	-	-	-	-	-	2
C301.2	-	2	-	-	-	-	-	-	-	-	-	-
C301.3	-	-	-	-	-	-	-	-	-	-	-	2
C301.4	-	2	-	-	-	-	-	-	-	-	-	-
C301.5	2	-	-	-	-	-	-	-	-	2	-	-
C301.6	2	2	-	-	-	-	-	-	-	-	3	-
C302-CE8301 STRENGTH OF MATERIALS I												
C302.1	2	1	2	1	-	2	2	2	3	3	3	3
C302.2	2	-	2	2	2	1	-	2	3	3	2	2
C302.3	2	2	2	2	2	2	-	2	2	3	2	2
C302.4	2	-	2	-	2	1	-	2	2	2	2	2
C302.5	2	2	2	1	2	2	-	2	3	3	2	2
C302.6	2	1	2	1	2	2	-	2	3	3	2	2
C303-CE8302 FLUID MECHANICS												
C303.1	3	-	-	-	-	-	2	-	-	-	-	2
C303.2	-	3	2	-	-	-	-	-	-	-	-	2
C303.3	-	3	2	-	-	2	-	-	-	-	-	-
C303.4	3	-	-	2	3	-	-	-	-	-	-	-
C303.5	-	-	-	-	3	-	-	-	2	-	-	3
C303.6	-	-	-	-	-	3	-	-	2	-	2	-
C304 - CE8351 SURVEYING												
C304.1	2	3	2	2	2	2	-	-	2	-	-	2
C304.2	3	2	3	2	2	2	-	-	2	-	-	3
C304.3	2	3	2	2	2	3	-	-	2	-	-	2
C304.4	3	3	3	2	2	2	-	-	2	-	-	3

C304.5	2	3	2	2	2	3	-	-	2	-	-	2
C304.6	3	2	2	2	2	3	-	-	2	-	-	3
C305 - CE8391 CONSTRUCTION MATERIALS												
C305.1	3	2	-	-	-	-	-	-	-	-	-	-
C305.2	3	2	-	2	-	-	-	-	-	-	-	-
C305.3	3	2	-	-	-	-	-	-	-	-	-	-
C305.4	3	2	2	-	-	-	-	-	-	-	-	-
C305.5	3	2	2	2	-	-	-	-	-	-	-	-
C305.6	3	2	2	2	-	-	-	-	-	-	-	-
C306-CE8392 ENGINEERING GEOLOGY												
C306.1	3	1	-	-	-	-	-	-	2	-	-	2
C306.2	3	3	-	-	-	-	-	-	2	-	-	1
C306.3	3	3	-	-	-	-	-	-	2	-	-	-
C306.4	2	1	1	-	-	-	-	-	2	-	-	-
C306.5	3	1	-	-	-	-	-	-	2	-	-	2
C306.6	3	3	-	-	-	-	-	-	2	-	-	1
C307 - CE8311 CONSTRUCTION MATERIALS LABORATORY												
C307.1	3	-	2	-	-	-	-	-	-	-	2	2
C307.2	3	-	2	-	-	-	-	-	2	-	2	2
C307.3	3	2	2	2	-	-	2	-	2	-	2	2
C307.4	3	2	2	2	-	-	2	-	2	-	2	2
C307.5	3	-	2	2	-	-	2	-	2	-	2	2
C307.6	3	-	2	2	-	2	2	-	2	-	2	2
C308-CE8361 SURVEYING LABORATORY												
C308.1	-	-	-	-	3	-	-	-	-	3	-	2
C308.2	-	-	-	-	3	-	-	-	-	3	-	2
C308.3	-	-	-	-	3	-	-	-	-	3	-	2
C308.4	-	-	-	-	3	-	-	-	-	3	-	2
C308.5	-	-	-	-	3	-	-	-	-	3	-	2
C308.6	-	-	-	-	3	-	-	-	-	3	-	2
C309 - HS8381- INTERPERSONAL SKILLS/LISTENING AND SPEAKING												

C309.1	2	2	2	-	2	-	2	-	-	-	1	-
C309.2	2	-	2	-	2	-	2	-	-	-	1	-
C309.3	-	-	2	2	2	-	-	-	-	2	1	-
C309.4	-	2	2	-	2	-	2	-	-	2	-	-
C309.5	1	2	-	-	2	1	-	-	-	2	-	-
C309.6	-	2	-	-	2	-	2	-	-	2	2	-
C401 - MA8491 NUMERICAL METHODS												
C401.1	3	3	-	2	2	-	-	-	-	-	-	1
C401.2	3	2	-	2	2	-	-	-	-	-	-	1
C401.3	3	3	-	3	2	-	-	-	-	-	-	1
C401.4	3	2	2	-	-	-	-	-	-	-	-	2
C401.5	3	2	2	-	-	-	-	-	-	-	-	2
C401.6	2	2	1	-	-	-	-	-	-	-	-	2
C402 - CE8401 CONSTRUCTION TECHNIQUES AND PRACTICES												
C402.1	2	-	-	-	-	-	-	-	-	1	1	2
C402.2	2	2	3	-	3	-	-	-	-	1	2	2
C402.3	-	-	-	-	3	-	2	-	-	1	1	2
C402.4	2	2	-	-	-	-	2	-	-	1	2	2
C402.5	2	-	3	-	-	-	2	-	-	1	2	2
C402.6	-	-	-	-	-	3	2	-	-	1	1	2
C403 - CE8402 STRENGTH OF MATERIALS II												
C403.1	3	3	2	-	-	-	1	-	-	-	-	3
C403.2	3	3	2	-	-	-	-	-	-	-	-	3
C403.3	3	3	2	-	-	-	1	-	-	-	-	3
C403.4	3	3	2	-	-	-	-	-	-	-	-	3
C403.5	3	3	2	-	-	-	1	-	-	-	-	3
C403.6	3	3	2	-	-	-	-	-	-	-	-	3
C404 - CE 8403 APPLIED HYDRAULIC ENGINEERING												
C404.1	2	2	2	2	-	-	-	-	2	-	2	-
C404.2	2	2	2	2	-	-	-	-	2	-	2	-
C404.3	2	2	2	2	-	-	-	-	2	-	2	-

C404.4	2	2	2	-	-	-	-	-	2	-	2	-
C404.5	2	2	2	-	-	-	-	-	2	-	2	-
C404.6	2	-	-	-	-	-	-	-	-	-	-	2
C405 - CE8404 CONCRETE TECHNOLOGY												
C405.1	3	2	2	-	2	-	2	-	-		2	-
C405.2	3	-	2	-	2	-	2	-	-		2	-
C405.3	3	-	2	2	2	-		-	-	2	2	-
C405.4	3	2	2	-	2	-	2	-	-	2		-
C405.5	3	2	-	-	2	2		-	-	2		-
C405.6	3	2	-	-	2	-	2	-	-	2	2	-
C406 - CE8491 SOIL MECHANICS												
C406.1	2	2	-	2	2	-	2	-	2	-	2	2
C406.2	2	2	-	-	-	-	-	-	-	-	-	2
C406.3	2	2	-	2	-	-	-	-	2	-	-	-
C406.4	2	2	-	2	-	-	-	-	-	-	-	-
C406.5	2	2	2	2	2	-	-	-	2	-	-	-
C406.6	2	-	-	2	-	-	-	-	-	-	-	-
C407 - CE8481 STRENGTH OF MATERIALS LABORATORY												
C407.1	2	3	2	3	2	2	-	-	-	-	-	2
C407.2	2	2	2	2	2	3	-	-	-	-	-	3
C407.3	2	3	3	3	2	2	-	-	-	-	-	2
C407.4	2	2	2	2	2	3	-	-	-	-	-	3
C407.5	2	2	2	3	3	2	-	-	-	-	-	2
C407.6	2	3	2	2	2	3	-	-	-	-	-	2
C408 - CE8461 HYDRAULIC ENGINEERING LABORATORY												
C408.1	1	-	1	2	2	-	-	2	-	2	3	-
C408.2	1	1	1	-	2	-	3	3	-	-	1	-
C408.3	1	1	-	2	2	-	-	-	3	-	1	-
C408.4	1	1	-	-	2	-	3	-	-	2	1	-
C408.5	2	-	2	2	2	-	-	-	-		1	-
C408.6	1	-	1	2	2	-	-	2	-	2	3	-

C409 - HS8461 ADVANCED READING AND WRITING												
C409.1	2	2	2	-	2	-	2	-	-	-	1	-
C409.2	2	-	2	-	2	-	2	-	-	-	1	-
C409.3	-	-	2	2	2	-	-	-	-	2	1	-
C409.4	-	2	2	-	2	-	2	-	-	2	-	-
C409.5	1	2	-	-	2	1	-	-	-	2	-	-
C409.6	-	2	-	-	2	-	2	-	-	2	2	-
C501- CE8501 DESIGN OF REINFORCED CEMENT CONCRETE ELEMENTS												
C501.1	3	2	-	-	-	2	-	-	-	-	-	-
C501.2	2	3	-	-	-	2	-	-	-	-	-	-
C501.3	3	2	-	-	-	2	-	-	-	-	-	-
C501.4	3	3	-	-	-	2	-	-	-	-	-	-
C501.5	3	2	-	-	-	2	-	-	-	-	-	-
C501.6	3	3	1	-	-	-	-	-	-	-	-	-
C502-CE8502 STRUCTURAL ANALYSIS I												
C502.1	3	3	-	-	2	-	-	-	-	2	-	2
C502.2	3	3	2	-	-	-	-	-	-	-	-	2
C502.3	3	3	2	-	-	-	-	-	-	-	-	2
C502.4	3	3	2	-	-	-	-	-	-	3	2	2
C502.5	3	3	-	-	-	-	-	-	-	-	-	-
C502.6	3		-	-	2	2	-	-	-	2	2	2
C503 - EN8491 WATER SUPPLY ENGINEERING												
C503.1	3	1	-	-	-	1	1	-	-	-	-	-
C503.2	3	2	2	-	-	2	-	-	-	-	-	-
C503.3	3	2	2	2	-	2	2	-	-	-	-	-
C503.4	3	1	-	-	-	1	-	-	-	-	-	-
C503.5	3	2	2	-	-	2	-	-	-	-	-	-
C503.6	3	2	2	-	-	2	2	-	-	-	-	-
C504-CE8591 FOUNDATION ENGINEERING												
C504.1	3	-	2	-	2	3	-	2	-	-	-	1
C504.2	-	2	3	-	-	2	-	-	-	2	-	2

C508.6	-	-	2	-	-	-	-	-	-	-	-	2
C509 - CE8513 SURVEY CAMP												
C509.1	3		-	-	-	-	-	-	-	-	-	1
C509.2	3	2	-	-	-	-	-	-	3	-	-	2
C509.3	2	2	-	-	-	-	-	-	3	-	-	2
C509.4	3	2	-	-	-	-	-	-	3	-	-	1
C509.5	3	1	-	-	-	-	-	-	2	-	-	1
C509.6	3	2	-	-	3	-	-	-	3	-	-	2
C601 - CE8601 DESIGN OF STEEL STRUCTURAL ELEMENTS												
C601.1	2	2	2	-	-	-	-	1	-	-	-	1
C601.2	2	2	2	-	-	-	-	1	-	-	-	1
C601.3	2	2	2	-	-	-	-	1	-	-	-	1
C601.4	2	2	2	-	-	-	-	1	-	-	-	1
C601.5	2	2	2	-	-	-	-	1	-	-	-	1
C601.6	2	2	2	-	-	-	-	1	-	-	-	1
C602 - CE8602 STRUCTURAL ANALYSIS II												
C602.1	3	3	2	2	-	1	1	-	-	-	1	2
C602.2	3	3	2	2	-	1	1	-	-	-	1	2
C602.3	3	3	2	2	-	-	1	-	-	-	-	1
C602.4	3	3	2	2	-	-	-	-	-	-	-	1
C602.5	3	3	2	2	-	-	-	-	-	-	-	1
C602.6	3	3	2	2	-	2	1	-	-	-	2	2
C603 - CE8603 IRRIGATION ENGINEERING												
C603.1	2	2	3	2	2	2	-	-	2	-	-	2
C603.2	3	2	3	2	2	2	-	-	2	-	-	3
C603.3	2	3	3	2	2	2	-	-	2	-	-	2
C603.4	2	3	3	2	2	2	-	-	2	-	-	3
C603.5	3	2	3	2	2	2	-	-	2	-	-	3
C603.6	3	2	3	2	3	2	-	-	2	-	-	2
C604 - CE8604 HIGHWAY ENGINEERING												
C604.1	2	2	-	-	-	2	1	-	3	2	-	2

C604.2	-	3	2	-	3	-	-	-	2	-	-	-
C604.3	-	2	-	-	-	-	2	-	-	-	-	1
C604.4	-	2	2	-	-	-	-	-	-	2	-	2
C604.5	1	2	-	-	-	2	1	-	2	-	2	2
C604.6	-	-	-	-	-	1	2	-	2	2	-	2
C605 - EN8592 WASTEWATER ENGINEERING												
C605.1	3	2	1	-	-	3	3	-	-	-	-	3
C605.2	2	3	2	-	-	-	2	-	-	-	-	-
C605.3	2	1	-	-	-	-	-	-	-	-	-	-
C605.4	3	2	3	-	-	-	2	-	-	-	-	-
C605.5	2	-	3	-	-	3	2	-	2	-	-	3
C605.6	3	2	-	-	-	2	2	-	-	-	-	3
C606 - CE8004 URBAN PLANNING AND DEVELOPMENT												
C606.1	-	2	2	2	-	2	1	-	3	-	-	2
C606.2	-	-	-	-	-	2	-	-	-	-	-	2
C606.3	-	-	-	2	-	3	-	-	-	-	-	3
C606.4	-	-	2	3	-	-	-	-	3	-	-	3
C606.5	3	-	3	1	2	2	3	-	-	-	-	3
C606.6	3	-	3	1	2	2	2	-	-	-	-	3
C607 - CE8612 IRRIGATION AND ENVIRONMENTAL ENGINEERING DRAWING												
C607.1	3	3	3	2	-	-	-	2	-	-	3	2
C607.2	3	2	3	2	-	-	-	2	-	-	2	2
C607.3	3	2	2	2	-	-	-	2	-	-	2	2
C607.4	3	3	2	2	-	-	-	2	-	-	2	2
C607.5	3	3	3	2	-	-	-	2	-	-	2	2
C607.6	3	3	3	2	-	-	-	2	-	-	2	2
C608 - CE8611 HIGHWAY ENGINEERING LABORATORY												
C608.1	2	-	1	-	-	-	-	2	-	-	2	-
C608.2	2	1	1	-	-	-	3	1	-	-	1	-
C608.3	2	1	-	-	-	-	-	-	1	-	1	-
C608.4	2	1	-	-	-	-	3	-	-	-	1	-

C608.5	2	-	2	-	-	-	-	-	-	-	1	-
C608.6	2	-	1	-	-	-	-	2	-	-	2	-
C609 - HS8581 PROFESSIONAL COMMUNICATION												
C609.1	2	2	2	-	2	-	2	-	-	-	1	-
C609.2	2	-	2	-	2	-	2	-	-	-	1	-
C609.3	-	-	2	2	2	-	-	-	-	2	1	-
C609.4	-	2	2	-	2	-	2	-	-	2	-	-
C609.5	1	2	-	-	2	1	-	-	-	2	-	-
C609.6	-	2	-	-	2	-	2	-	-	2	2	-
C701 - CE8701 ESTIMATION, COSTING AND VALUATION ENGINEERING												
C701.1	3	2	2	-	-	2	2	-	-	-	-	3
C701.2	3	2	2	-	-	2	2	-	-	-	-	3
C701.3	2	-	-	-	-	-	2	-	-	-	-	3
C701.4	2	-	-	-	-	-	2	-	-	-	-	3
C701.5	2	-	-	-	-	-	2	-	-	-	-	.3
C701.6	3	2	2	-	-	2	2	-	-	-	-	3
C702 - CE8702 RAILWAYS, AIRPORTS, DOCKS AND HARBOUR ENGINEERING												
C702.1	2	2	2	-	-	-	2	-	2	-	-	-
C702.2	3	2	-	-	-	-	-	-	2	-	-	-
C702.3	3	2	-	-	-	-	-	-	2	-	-	-
C702.4	3	2	-	-	-	-	-	-	2	-	-	-
C702.5	2	2	-	-	-	-	-	-	2	-	-	-
C702.6	-	-	2	-	-	-	2	-	-	-	-	-
C 703 -EN8591 MUNICIPAL SOLID WASTE MANAGEMENT												
C703.1	-	-	3	-	-	2	3	-	-	-	-	3
C703.2	-	-	2	-	2	2	3	2	-	-	2	3
C703.3	3	-	2	-	2	-	3	-	2	-	2	3
C703.4	2	-	-	2	-	3	-	-	-	-	-	3
C703.5	-	-	-	-	-	-	2	-	2	-	-	-
C703.6	2	-	-	-	-	-	3	2	3	-	-	-

C704 -OEN751 GREEN BUILDING DESIGN												
C704.1	2	2	-	-	-	2	-	-	-	-	-	2
C704.2	2	2	-	-	-	2	-	-	-	-	-	2
C704.3	2	2	-	-	-	2	-	-	-	-	-	2
C704.4	2	2	-	-	-	2	-	-	-	-	-	2
C704.5	2	2	-	-	-	2	-	-	-	-	-	2
C704.6	2	2	-	-	-	2	-	-	-	-	-	2
C705 CE8703 STRUCTURAL DESIGN AND DRAWING												
C705.1	2	-	2	-	-	-	2	-	-	-	2	-
C705.2	2	-	2	-	-	-	2	-	-	-	-	-
C705.3	2	-	-	-	-	-	2	-	-	-	-	-
C705.4	2	-	-	-	-	-	2	2	-	-	-	-
C705.5	2	-	-	-	-	2	2	-	-	-	2	-
C705.6	2	-	-	-	-	-	2	-	-	-	-	-
C706 CE8711 CREATIVE AND INNOVATIVE PROJECT												
C706.1	2	-	2	-	-	-	-	2	-	-	1	1
C706.2	2	-	2	-	-	2	-	-	-	-	-	-
C706.3	2	2	2	2		1	1	-	-	-	-	1
C706.4	3	2	2	3	1		1	-	-	-	-	1
C706.5	3		2	-	1	2	2	1	-	-	1	1
C706.6	2	1		-	-		3		2	-	-	-
C707 CE8712 INDUSTRIAL TRAINING												
C707.1	3	3	3	2	2	2	-	2	2	2	3	-
C707.2	3	2	3	2	2	-	-	-	-	3	2	2
C707.3	3	2	2	2	2	-	-	-	-	2	2	-
C707.4	3	3	2	2	3	-	2	-	-	2	2	-
C707.5	3	3	3	2	2	-	-	-	-	3	2	-
C707.6	2	2	3	2	3	-	-	2	-	2	2	-
C801 - GE8076 PROFESSIONAL ETHICS IN ENGINEERING												
C801.1	-	-	-	-	-	-	2	-	2	-	3	-
C801.2	3	-	-	-	-	-	2	-	2	2	3	-

C801.3	2	-	-	-	-	-	-	2	-	-	-	3
C801.4	3	-	-	-	-	-	-	3	2	-	-	1
C801.5	1	-	-	-	-	-	-	-	3	-	3	-
C801.6	1	-	-	-	-	-	-	-	2	3	2	1
C802 - CE8020 MAINTENANCE, REPAIR AND REHABILITATION OF STRUCTURES												
C802.1	3	2	2	-	-	1	1	-	1	-	-	-
C802.2	3	2	3	-	-	1	1	-	1	-	-	-
C802.3	3	2	2	-	-	1	-	-	1	-	-	-
C802.4	3	2	2	-	-	1	-	-	1	-	-	-
C802.5	3	2	2	-	-	1	-	-	1	-	-	-
C802.6	3	2	2	-	-	1	-	-	1	-	-	-
C803 - CE8811 PROJECT WORK												
C803.1	1	1	-	1	-	2	1	1	-	-	-	1
C803.2	1	2	-	1	-	1	2	1	-	-	-	1
C803.3	1	1	-	1	-	1	1	1	-	-	-	1
C803.4	1	2	-	2	-	1	1	2	-	-	-	1
C803.5	2	1	-	1	-	2	1	1	-	-	-	1
C803.6	2	1	-	1	-	1	1	1	-	-	-	1

Regulation – 2017 – PG

M.E. STRUCTURAL ENGINEERING

S101- MA5151 - Advanced Mathematical Methods	
S101.1	To familiarize the students in the field of differential equations.
S101.2	To enable them to solve boundary value problems associated with engineering applications using transform methods.
S101.3	To expose the students to the concepts of calculus of variations.
S101.4	To introduce conformal mappings and their applications to fluid flows and heat flows.
S101.5	To give the students a complete picture of tensor analysis.
S102 – ST5101 – Advanced Concrete Structures	
S102.1	Explain structural behaviour of flexural members and columns
S102.2	Design compression members and construct interaction diagrams
S102.3	Design the special elements like corbels, deep beams and grid floors
S102.4	Design flat slab and spandrel beams
S102.5	Predict the moment curvature behavior and design and detail concrete elements based on ductility
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
S103.2	Do dynamic analysis of system/structures with Two degrees of freedom under free and forced vibration
S103.3	Do dynamic analysis of system/structures with Multi degrees of freedom under free and forced vibration
S103.4	Explains the responses of the dynamics
S103.5	Derive a mathematical model of continuous system and do a dynamic analysis under free and forced vibration
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
S104.2	Demonstrate the application of plane stress and plane strain in a given situation in both cartesian and polar coordinate systems

S104.3	Solve torsion problems in circular and non-circular cross-sections
S104.4	Analyse beams resting on elastic foundations
S104.5	Solve analytically the simple boundary value problems with elasto-plastic and strain hardening properties
S105 –ST5001 – Maintenance and Rehabilitation Of Structures	
S105.1	Explain the importance of maintenance assessment of distressed structures
S105.2	Apply the knowledge on Quality assurance for concrete based on Strength and Durability
S105.3	Identify various repair materials and advancements in concrete
S105.4	Explain the knowledge on Concrete protection methods Structural health monitoring
S105.5	Select Various strengthening and repair methods for different cases
S106 – ST5002 –Pre Fabricate Structures	
S106.1	Explain the design principles involved in prefabrication
S106.2	Detail the different types of connection
S106.3	Design for stripping forces during manufacture
S106.4	Determine the forces in shear walls
S106.5	Identify the different roof trusses used in industrial buildings
S201 – ST5201 – Advanced Steel Structures	
S201.1	Design the steel members such as purlins, gable wind girders, base plates subjected to combined forces
S201.2	Explain and design the different types of steel connections such as welded, bolted and moment resisting connections
S201.3	Analyse and design the industrial structures such as trusses, portal frames subjected to seismic forces
S201.4	Explain the effect of axial force and shear force on steel structures and analyse the continuous beams, frames using plastic theory
S201.5	Evaluate the behaviour and design of compression and flexural members
S202 – ST5202 – Stability Of Structures	
S202.1	Explain the phenomenon of buckling of columns and calculate the buckling load on column by various approaches
S202.2	Estimate the buckling load of beam – columns and frames

S202.3	Explore the concepts of torsional and lateral buckling of thin walled members
S202.4	Explain the phenomenon of buckling of plates
S202.5	Analyze the inelastic buckling of columns and plates
S203 – ST5203 - Experimental Techniques	
S203.1	Do the mix proportion using IS and ACI codal provisions.
S203.2	Prepare the self-compacting concrete and study the flow characteristics of SCC
S203.3	Identify the proper portion of mineral and chemical admixture for concrete.
S203.4	Test the concrete in a non-destructive manner using rebound hammer.
S203.5	Know the permeability characteristics of concrete.
S204 – ST5204 - Finite Element Analysis	
S204.1	Formulate a finite element problem using basic mathematical principles
S204.2	Explain the various types of elements and Select the appropriate element for modelling
S204.3	Analyze a frame using truss element
S204.4	Formulate and analyze two and three dimensional solid finite element problems
S204.5	Analyze a shells, thick and thin plate and explain dynamic analysis in FEM
S205- ST5008 – Industrial Structures	
S205.1	Develop the concept of planning & functional requirement of industrial standards.
S205.2	Analyse and design of Steel Gantry girders & Crane girders and RCC design of corbels, nibs and staircase.
S205.3	Analyse & design of cooling towers, bunker, silos and pipe supporting structures.
S205.4	Analyse and design of Steel transmission line towers and chimneys.
S205.5	Design foundations for cooling tower, chimneys and turbo generator.
S206 – ST5009 – Pre Stressed Concrete	
S206.1	Identify the various methods of prestressing
S206.2	Design the beams for shear, bond and torsion
S206.3	Design the continuous beams
S206.4	Design the water tank, piles and masts
S206.5	Analyze and design the composite beams
S207 – ST5211 - Advanced Structural Engineering Laboratory	

S207.1	Do the mix proportion using IS and ACI codal provisions.
S207.2	Prepare the self-compacting concrete and study the flow characteristics of SCC
S207.3	Identify the proper portion of mineral and chemical admixture for concrete.
S207.4	Test the concrete in a non-destructive manner using rebound hammer.
S207.5	Know the permeability characteristics of concrete.
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.
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.
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.
S208.4	To development skills in facing and solving the field problems.
S208.5	They are trained in tracking a practical field/ industry oriented problem related to structural Engineering
S301 – ST5301- Earthquake Analysis and Design of Structures	
S301.1	Explain the effects of earthquake
S301.2	Explain the Earthquake resistant Masonry Structures
S301.3	Explain the Earthquake resistant RCC Structures
S301.4	The end of this course the students will be able to understand the causes and effect of earthquake.
S301.5	They will able to design masonry and RC structures to the earthquake forces as per the recommendations of IS codes of practice.
S302 – ST5014 – Design Of Steel Concrete Composite Structures	
S302.1	Explain composite action
S302.2	Design composite elements
S302.3	Design connections
S302.4	Explain the concept of design of composite box girder bridges
S302.5	Study and evaluate case studies
S303 – ST5015 – Design Of Sub Structures	
S303.1	To gain familiarity with different types of foundation.
S303.2	To expose the students to the design of shallow foundations and deep foundations.
S303.3	To understand the concepts of designing well, machine and special foundations.
S303.4	They will be in a position to determine the load carrying capacity of each type of foundation.

S303.5	On completion of this course students will be able to select appropriate foundation type based on available soil conditions.
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.
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.
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.
S304.4	To development skills in facing and solving the field problems.
S304.5	They are trained in tracking a practical field/ industry oriented problem related to structural Engineering
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.
S305.2	To be able to acquire the skills of oral presentation and to acquire technical writing abilities for conferences.
S305.3	To work on a specific technical topic in Structural Engineering and acquire the skills of written and oral presentation.
S305.4	To acquire writing abilities for seminars and conferences.
S305.5	The students will be trained to face an audience and to tackle any problem during group discussion in the Interviews.
S306 – ST5313 - Project Work (Phase – I)	
S306.1	To identify a specific problem for the current need of the society
S306.2	To collecting information related to the same through detailed review of literature.
S306.3	To develop the methodology to solve the identified problem.
S306.4	To train the students in preparing project reports and to face reviews and viva-voce examination.
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.
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.
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.
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.
S401.4	To development skills in facing and solving the field problems.
S401.5	They are trained in tracking a practical field/ industry oriented problem related to structural Engineering

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

S.No	Course Outcome											
S101- MA5151 - Advanced Mathematical Methods												
S101.1	3	-	-	-	-	-	-	-	-	-	-	2
S101.2	-	2	-	-	-	-	-	-	-	-	-	-
S101.3	-	-	-	-	-	-	-	-	-	-	-	2
S101.4	-	2	-	-	-	-	-	-	-	-	-	-
S101.5	2	-	-	-	-	-	-	-	-	2	-	-
S102 – ST5101 – Advanced Concrete Structures												
S102.1	2	1	2	1	-	2	2	2	3	3	3	3
S102.2	2	-	2	2	2	1	-	2	3	3	2	2
S102.3	2	2	2	2	2	2	-	2	2	3	2	2
S102.4	2	-	2	-	2	1	-	2	2	2	2	2
S102.5	2	2	2	1	2	2	-	2	3	3	2	2
S103 – ST5102 –Dynamics of Structures												
S103.1	3	-	-	-	-	-	2	-	-	-	-	2
S103.2	-	3	2	-	-	-	-	-	-	-	-	2
S103.3	-	3	2	-	-	2	-	-	-	-	-	-

S103.4	3	-	-	2	3	-	-	-	-	-	-	-
S103.5	-	-	-	-	3	-	-	-	2	-	-	3
S104 – ST5103 - Theory Of Elasticity and Plasticity												
S104.1	2	3	2	2	2	2	-	-	2	-	-	2
S104.2	3	2	3	2	2	2	-	-	2	-	-	3
S104.3	2	3	2	2	2	3	-	-	2	-	-	2
S104.4	3	3	3	2	2	2	-	-	2	-	-	3
S104.5	2	3	2	2	2	3	-	-	2	-	-	2
S105 –ST5001 – Maintenance and Rehabilitation Of Structures												
S105.1	3	2	-	-	-	-	-	-	-	-	-	-
S105.2	3	2	-	2	-	-	-	-	-	-	-	-
S105.3	3	2	-	-	-	-	-	-	-	-	-	-
S105.4	3	2	2	-	-	-	-	-	-	-	-	-
S105.5	3	2	2	2	-	-	-	-	-	-	-	-
S106 – ST5002 –Pre Fabricate Structures												
S106.1	3	1	-	-	-	-	-	-	2	-	-	2
S106.2	3	3	-	-	-	-	-	-	2	-	-	1
S106.3	3	3	-	-	-	-	-	-	2	-	-	-
S106.4	2	1	1	-	-	-	-	-	2	-	-	-
S106.5	3	1	-	-	-	-	-	-	2	-	-	2
S201 – ST5201 – Advanced Steel Structures												
S201.1	3	-	2	-	-	-	-	-	-	-	2	2
S201.2	3	-	2	-	-	-	-	-	2	-	2	2
S201.3	3	2	2	2	-	-	2	-	2	-	2	2
S201.4	3	2	2	2	-	-	2	-	2	-	2	2

S205.5	3	3	2	-	-	-	1	-	-	-	-	3
S206 – ST5009 – Pre Stressed Concrete												
S206.1	2	2	2	2	-	-	-	-	2	-	2	-
S206.2	2	2	2	2	-	-	-	-	2	-	2	-
S206.3	2	2	2	2	-	-	-	-	2	-	2	-
S206.4	2	2	2	-	-	-	-	-	2	-	2	-
S206.5	2	2	2	-	-	-	-	-	2	-	2	-
S207 – ST5211 - Advanced Structural Engineering Laboratory												
S207.1	3	2	2	-	2	-	2	-	-		2	-
S207.2	3	-	2	-	2	-	2	-	-		2	-
S207.3	3	-	2	2	2	-		-	-	2	2	-
S207.4	3	2	2	-	2	-	2	-	-	2		-
S207.5	3	2	-	-	2	2		-	-	2		-
S208 –ST5212 - Practical Training - I												
S208.1	3	1	-	-	-	1	1	-	-	-	-	-
S208.2	3	2	2	-	-	2	-	-	-	-	-	-
S208.3	3	2	2	2	-	2	2	-	-	-	-	-
S208.4	3	2	2	-	-	2	-	-	-	-	-	-
S208.5	3	2	2	2	-	2	2	-	-	-	-	-
S301 – ST5301- Earthquake Analysis and Design of Structures												
S301.1	2	2	-	2	2	-	2	-	2	-	2	2
S301.2	2	2	-	-	-	-	-	-	-	-	-	2
S301.3	2	2	-	2	-	-	-	-	2	-	-	-
S301.4	2	2	-	2	-	-	-	-	-	-	-	-
S301.5	2	2	2	2	2	-	-	-	2	-	-	-

S302 – ST5014 – Design Of Steel Concrete Composite Structures												
S302.1	2	3	2	3	2	2	-	-	-	-	-	2
S302.2	2	2	2	2	2	3	-	-	-	-	-	3
S302.3	2	3	3	3	2	2	-	-	-	-	-	2
S302.4	2	2	2	2	2	3	-	-	-	-	-	3
S302.5	2	2	2	3	3	2	-	-	-	-	-	2
S303 – ST5015 – Design Of Sub Structures												
S303.1	1	-	1	2	2	-	-	2	-	2	3	-
S303.2	1	1	1	-	2	-	3	3	-	-	1	-
S303.3	1	1	-	2	2	-	-	-	3	-	1	-
S303.4	1	1	-	-	2	-	3	-	-	2	1	-
S303.5	2	-	2	2	2	-	-	-	-	-	1	-
S304 – ST5211 - Practical Training - II												
S304.1	3	1	-	-	-	1	1	-	-	-	-	-
S304.2	3	2	2	-	-	2	-	-	-	-	-	-
S304.3	3	2	2	2	-	2	2	-	-	-	-	-
S304.4	3	2	2	-	-	2	-	-	-	-	-	-
S304.5	3	2	2	2	-	2	2	-	-	-	-	-
S305 – ST5212 – Structural Seminar												
S305.1	3	2	-	-	-	2	-	-	-	-	-	-
S305.2	2	3	-	-	-	2	-	-	-	-	-	-
S305.3	3	2	-	-	-	2	-	-	-	-	-	-
S305.4	3	3	-	-	-	2	-	-	-	-	-	-
S305.5	3	3	-	-	-	2	-	-	-	-	-	-

S306 – ST5313 - Project Work (Phase – I)												
S306.1	3	3	-	-	2	-	-	-	-	2	-	2
S306.2	3	3	2	-	-	-	-	-	-	-	-	2
S306.3	3	3	-	-	2	-	-	-	-	2	-	2
S306.4	3	3	2	-	-	-	-	-	-	-	-	2
S306.5	3	3	-	-	2	-	-	-	-	2	-	2
S401- ST5411 - Practical Training - III												
S401.1	3	1	-	-	-	1	1	-	-	-	-	-
S401.2	3	2	2	-	-	2	-	-	-	-	-	-
S401.3	3	2	2	2	-	2	2	-	-	-	-	-
S401.4	3	2	2	-	-	2	-	-	-	-	-	-
S401.5	3	2	2	2	-	2	2	-	-	-	-	-
S402 – ST5412 – Project Work (Phase – II)												
S402.1	3	3	-	-	2	-	-	-	-	2	-	2
S402.2	3	3	2	-	-	-	-	-	-	-	-	2
S402.3	3	3	-	-	2	-	-	-	-	2	-	2
S402.5	3	3	-	-	2	-	-	-	-	2	-	2
S402.5	3	3	2	-	-	-	-	-	-	-	-	2


PRINCIPAL

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

**COMPUTER SCIENCE
AND
ENGINEERING**

Regulation – 2013 - UG	
YEAR / SEMESTER : II/ III	
C301-MA6351/TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	
C301.1	Analyze partial differential equation in various methods
C301.2	Solving Fourier series for different types of functions
C301.3	Computing the solution of heat equation, wave equation and the Laplace equation subject to the boundary conditions
C301.4	Deduce the Gaussian function in self-reciprocal for using Fourier transform method
C301.5	Formation of finite difference equations in Z-transform method
C302-CS6301/PROGRAMMING AND DATASTRUCTURES-II	
C302.1	Have the hands on knowledge on the fundamentals object oriented programming
C302.2	Create the programs by implementing the basic concepts of OOPS such as Data Abstraction, Encapsulation and Inheritance
C302.3	Manage the errors that are generated by the systems and End users.
C302.4	Summarize about tree preliminaries and other tree structures
C302.5	Demonstrate different graph data structure algorithms to see the flow of computation
C303-CS6302/DATABASE MANAGEMENT SYSTEM	
C303.1	Illustrate the database design for applications.
C303.2	Make use of ER diagram and normalization techniques in database application
C303.3	Apply concurrency control & recovery mechanism for database problems.
C303.4	Apply the various concepts in query processing.
C303.5	Compare various storage techniques in database.
C304-CS6303/COMPUTER ARCHITECTURE	
C304.1	Identify the hardware blocks, instructions set & addressing mode
C304.2	Solving the architecture related problems using arithmetic operations
C304.3	Use various metrics to calculate the performance of a computer system
C304.4	Detect pipeline hazards and identify possible solutions to those hazards.
C304.5	Overcome the challenges of parallelism and its classifications.
C304.6	Relate the basic concepts of memory and I/O Systems
C305-CS6304-ANALOG AND DIGITAL COMMUNICATION	
C305.1	Demonstrate analog communication techniques

C305.2	Explain digital communication techniques
C305.3	Illustrate data and pulse communication techniques
C305.4	Identify and correct errors use of various error control coding techniques
C305.5	Outline multi-user radio communication
C305.6	Analyze different types of noise and its calculation.
C306-GE6351/ENVIRONMENTAL SCIENCE AND ENGINEERING	
C306.1	Understand the values, threats and conservation of biodiversity and classify various ecosystems.
C306.2	Identify and implement technological and eco solutions to environmental problems
C306.3	Develop the knowledge on various natural resources, their causes and their effects
C306.4	Understand various environmental acts and disaster management.
C306.5	Relate population and environment and the role of IT in environment and human health.
C306.6	Analyze the impact of environment integrated themes and social issues.
C307- CS6311/ PROGRAMMING AND DATA STRUCTURE LABORATORY II	
C307.1	Write simple programs using basic concepts of C++.
C307.2	Develop programs using Inheritance and Polymorphism.
C307.3	Design programs for implementing Virtual functions, Exception handling and Templates.
C307.4	Build programs to implement the concept of Binary search Tree and traversals.
C307.5	Solve problems with applications of Graphs.
C307.6	Apply the concepts of Linear Data Structures for problem solving.
C308-CS6312/DATABASE MANAGEMENT SYSTEMS LABORATORY	
C308.1	Infer database language commands to create simple database
C308.2	Analyze the database using queries to retrieve records
C308.3	Applying PL/SQL for processing database
C308.4	Analyze front end tools to design forms, reports and menus
C308.5	Develop solutions using database concepts for real time requirements.
YEAR / SEMESTER : II/ IV	
C401-MA6453/PROBABILITY AND QUEUEING THEORY	
C401.1	Analyze the fundamental knowledge of the concept of probability in real life

	phenomenon
C401.2	Apply the concept of two dimensional random variable in engineering discipline
C401.3	Make use of Stochastic process to solve real life application
C401.4	Analyze the queuing models
C401.5	Identify solutions for probabilistic models
C402-CS6551/COMPUTER NETWORKS	
C402.1	To erect different types of networks.
C402.2	Comprehend the functionality of each layer for a given application.
C402.3	Identify the concept for routing problems.
C402.4	Understand the flow of information from one network to another network
C402.5	Trace out the application layer.
C403-CS6401/OPERATING SYSTEMS	
C403.1	Able to understand the basic concepts and functions of Operating Systems
C403.2	Delineate various threading models, process synchronization and deadlocks
C403.3	Compare the performance of various CPU scheduling algorithms
C403.4	Understand the basic concepts of memory management systems
C403.5	Expound I/O management and file systems
C403.6	Understand the model of Linux multifunction server and utilize local network services
C404-CS6402/DESIGN AND ANALYSIS OF ALGORITHMS	
C404.1	Interpret the fundamental needs of algorithms in problem solving
C404.2	Classify the different algorithm design techniques for problem solving
C404.3	Develop algorithms for various computing problems
C404.4	Analyze the time and space complexity of various algorithms
C404.5	Identify the limitations of algorithms in problem solving
C405-EC6504/MICROPROCESSOR AND MICROCONTROLLER	
C405.1	Design & implement program on 8086 microprocessor.
C405.2	Design and interface I/O circuits.
C405.3	Design Memory Interfacing circuit
C405.4	Design and implement 8051 microcontroller based systems.
C405.5	Understand the Bus Structure and advanced processor
C405.6	Construct any system operation based on the knowledge using microprocessor and

	microcontroller
C406-CS6403/SOFTWARE ENGINEERING	
C406.1	Explain the software engineering process and project management
C406.2	Demonstrate software requirements and analysis
C406.3	Outline the software design process and user interface
C406.4	Compare and contrast various software testing
C406.5	Discuss about the software integration and project management
C407-CS6411/NETWORKS LABORATORY	
C407.1	Demonstrate the socket program using TCP & UDP
C407.2	Develop simple applications using TCP & UDP
C407.3	Implement the various protocols
C407.4	Able to implement various routing algorithms
C407.5	Experiment with congestion control algorithm using network simulator
C408-CS6412/MICROPROCESSOR AND MICROCONTROLLER LABORATORY	
C408.1	Describe the concepts of ALP
C408.2	Compare Interfacing of different I/Os with Microprocessors
C408.3	Differentiate Serial and Parallel Interface
C408.4	Write ALP for arithmetic and logical operations in 8086 and 8051
C408.5	Write the MASM program
C409-CS6413/OPERATING SYSTEMS LABORATORY	
C409.1	Understand basic Unix commands & to compare the performance of various CPU scheduling algorithms
C409.2	Analyze deadlock avoidance and detection algorithms
C409.3	Able to implement the concept of semaphores
C409.4	Create processes and implement IPC
C409.5	Analyze the performance of the various page replacement algorithms and apply various file allocation strategies
YEAR / SEMESTER : III/ V	
C501-MA6566/DISCRETE MATHEMATICS	
C501.1	Reformulating and applying statements from common language to formal logic
C501.2	Identify the structures at various levels in combinatorial

C501.3	Compare various graphs and its algorithms in computer programming
C501.4	Demonstrate the concept of groups & subgroups
C501.5	Exposed the concepts and properties of lattices and Boolean algebra in mathematical manner
C502-CS6501/INTERNET PROGRAMMING	
C502.1	Demonstrate how the real time logics are applied to java programs.
C502.2	Work on web and web applications using HTML and CSS
C502.3	Create an effective and dynamic web pages using JavaScript, Servlet and JSP
C502.4	Design and implement web pages in PHP and to present data in XML format
C502.5	Create web services using AJAX
C503-CS6502/OBJECT ORIENTED ANALYSIS AND DESIGN	
C503.1	Able to implement OOAD concepts and various UML diagrams
C503.2	Appropriate design layout can be selected
C503.3	Domain models and conceptual classes can be illustrated
C503.4	Compare and contrast various testing techniques
C503.5	Implementation of patterns
C504-CS6503/THEORY OF COMPUTATION	
C504.1	Design automata, convert the regular expression into minimized DFA and prove a language not regular.
C504.2	Build context free grammar for any language set and remove ambiguity
C504.3	Correlate the different types of automata to real world applications
C504.4	Design a Turing machine to solve problems based on mathematical foundations and algorithmic principles.
C504.5	Identify the different computational problems and associated complexity
C504.6	Develop the principles in construction of software systems.
C505-CS6504/COMPUTER GRAPHICS	
C505.1	Demonstrate the concepts for programming in computer graphics.
C505.2	Summarize two dimensional transformations and different types of clipping.
C505.3	Rephrase 3D computer graphics and projection.
C505.4	Relate basic illumination and color model.
C505.5	Carry out activities involving animation and realism.

C506-CS6511/CASE TOOLS LABORATORY	
C506.1	Able to design and implement projects using OO concepts.
C506.2	Use the UML analysis and design diagrams.
C506.3	Apply appropriate design patterns.
C506.4	Compare and contrast various testing techniques
C506.5	Implement OOAD concepts and various UML diagrams
C507-CS6512/INTERNET PROGRAMMING LABORATORY	
C507.1	Understand, analyze and apply the role of languages like HTML, XML, and JavaScript.
C507.2	analyze a web page and identify its elements and attributes
C507.3	Develop java program based on protocols like HTTP, SMTP, POP3 and FTP.
C507.4	Create dynamic web pages using Servlet and JSP.
C507.5	Obtain the knowledge on data manipulation in a web.
C508-CS6513/COMPUTER GRAPHICS LABORATORY	
C508.1	Draw 2D and 3D objects
C508.2	Perform transformations and projections for 2D and 3D objects
C508.3	Manipulate a graphical object using clipping algorithms and viewing technique
C508.4	Use an image editing tool for image manipulation and enhancement
C508.5	Utilize the authoring tool to develop a 3D scene and to perform 2D animation
YEAR / SEMESTER : III/ VI	
C601-CS6601/DISTRIBUTED SYSTEMS	
C601.1	Identify the challenges and approaches in Distributed Systems
C601.2	Grasp the knowledge to apply network virtualization, RMI and RPC.
C601.3	Understand the distributed file systems and the naming conventions used.
C601.4	Apply locks ,concurrency control and synchronization in distributed systems.
C601.5	Express process migration and resource management techniques.
C602-IT6601/MOBILE COMPUTING	
C602.1	Comprehend the basics of mobile Computing
C602.2	Express the functionality of Mobile IP and Transport Layer
C602.3	Classify different types of mobile telecommunication systems

C602.4	Implement Adhoc networks with routing protocols
C602.5	Use mobile operating systems in developing mobile applications
C602.6	Synthesize new knowledge in the area of mobile computing by using appropriate techniques.
C603-CS6660/COMPILER DESIGN	
C603.1	Design and implement a prototype compiler to correct code.
C603.2	Diagnose the data flow anomalies.
C603.3	Work with debugger.
C603.4	Relate parallel processing and architecture interface at runtime by customizing compilation process to application.
C603.5	Apply the various code optimization techniques.
C603.6	Utilize the different compiler construction tools for optimization of machine language.
C604-IT6502/DIGITAL SIGNAL PROCESSING	
C604.1	Understand the fundamentals of discrete time Signals, systems and their properties
C604.2	Apply DFT for the analysis of Digital signals and System.
C604.3	Design any type of Filters and obtain its realization.
C604.4	Knowledge about frequency Transformation by using analog and digital Filters.
C604.5	Apply the basics of DSP on Communication systems in both time and frequency domain.
C604.6	Identify the effect of finite precision representation on digital filters.
C605-CS6659/ARTIFICIAL INTELLIGENCE	
C605.1	Identify problems that are amenable to solution by AI methods.
C605.2	Recognize appropriate AI methods to solve a given problem.
C605.3	Able to interpret the problem in the given logic.
C605.4	Implement basic AI algorithms.
C605.5	Assess critically the techniques presented and apply them to real world problems
C606-IT6702/ DATA WAREHOUSING AND DATA MINING	
C606.1	Understand Data Warehousing and Data Mining and its applications and challenges.
C606.2	Comprehend Data Cube Implementation and OLAP concepts
C606.3	Generate and evaluate Association patterns

C606.4	Solving problems using various Classification techniques
C606.5	Exhibit various clustering methods
C607-CS6611/MOBILE APPLICATION DEVELOPMENT LABORATORY	
C607.1	Build native application using GUI components and Mobile application development framework
C607.2	Develop an application using basic graphical primitives and databases
C607.3	Construct an application using multithreading and RSS feed
C607.4	Make use of location identification using GPS in an application
C607.5	Design and Implement various mobile applications using emulators.
C608-CS6612/COMPILER LABORATORY	
C608.1	Design and implement a prototype compiler to correct code.
C608.2	Apply the various compiler optimization techniques.
C608.3	Use the different compiler construction tools for consistent and predictable optimization.
C608.4	Analyse data flow anomalies
C608.5	Work with debugger
C608.6	Relate parallel processing and explore architecture interface by customizing compilation process to application
C609-GE6674/COMMUNICATION AND SOFT SKILLS - LABORATORY	
C609.1	Take international examination such as IELTS and TOEFL
C609.2	Participate in Group Discussion
C609.3	Successfully answer questions in Interviews.
C609.4	Make effective Presentations.
C609.5	Participate confidently and appropriately in conversations both formal and informal
YEAR / SEMESTER : IV/ VII	
C701-CS6701/CRYPTOGRAPHY AND NETWORK SECURITY	
C701.1	To explain the basics of number theory and compare the encryption techniques
C701.2	To Summarize the functionality of public key cryptography
C701.3	To apply the message authentication functions and secure algorithms for secure transactions
C701.4	To demonstrate and apply the security systems

C701.5	To discuss the different levels of security and services
C701.6	To transact and keep the information in a secured manner
C702-CS6702/GRAPH THEORY AND APPLICATIONS	
C702.1	Describe computer programs in a formal mathematical manner.
C702.2	Classify precise and accurate mathematical definitions of objects in graph theory.
C702.3	Illustrate fundamentals of circuits, cutsets, network flows & graph.
C702.4	Outline Permutations and Combinations with generating function.
C702.5	Make use of theoretical knowledge and independent mathematical thinking in graph theory questions' investigation Reason from definitions to construct mathematical proofs.
C703-CS6703/GRID AND CLOUD COMPUTING	
C703.1	Understand the concept of distributed computing.
C703.2	Apply grid computing techniques.
C703.3	Understand the concept of virtualization.
C703.4	Use grid and cloud tool kits to develop the applications.
C703.5	Apply the security models in the grid and cloud environment
C703.6	Design and develop a private cloud environment with security enhanced.
C704-CS6704/RESOURCE MANAGEMENT TECHNIQUES	
C704.1	Formulate linear programming problem from a word problem and solve them graphically in 2-dimensions
C704.2	Demonstrate the concept of duality to solve the shortest route problem
C704.3	Make use of cutting plan method to solve Integer Programming problem
C704.4	Distinguish between the Concepts of Constrained and Unconstrained optimization problems
C704.5	Utilize Network Models in project management.
C705-IT6801/SERVICE ORIENTED ARCHITECTURE	
C705.1	Infer the XML Schema, Name Space and Document Structure.
C705.2	Build Applications based on XML.
C705.3	Outline the SOA ethics and Service levels.
C705.4	Develop web service using technology elements.
C705.5	Build SOA based applications for intra and inter enterprise applications.

C706-IT6005/DIGITAL IMAGE PROCESSING	
C706.1	Demonstrate how digital images are acquired, stored and relationship between pixels
C706.2	Apply image transformation, and image enhancement techniques.
C706.3	Remove noise from real-world imagery using a variety of filtering techniques in spatial and frequency domain
C706.4	Illustrate image compression, and image segmentation techniques.
C706.5	Represent features of images.
C707-CS6711/SECURITY LABORATORY	
C707.1	To apply the cryptographic algorithm for the secured data communication.
C707.2	Apply the knowledge of symmetric cryptography to implement simple ciphers
C707.3	Analyze and implement public key algorithms like RSA
C707.4	To utilize the open source tools for analyzing the network and to provide the security for the date.
C707.5	Apply and set up firewalls and intrusion detection systems using open source technologies and to explore email security.
C708-CS6712/GRID AND CLOUD COMPUTING LABORATORY	
C708.1	Make use of the grid toolkit.
C708.2	Design and implement new grid applications on the grid.
C708.3	Make use of the cloud toolkit.
C708.4	Build cloud applications on cloud.
C708.5	Construct the applications according to the services.
C708.6	Develop a grid and cloud portal
YEAR / SEMESTER : IV/ VIII	
C801-CS6801/MULTI – CORE ARCHITECTURES AND PROGRAMMING	
C801.1	Demonstrate parallel architectures and parallel programming models
C801.2	Comprehend the challenges in parallel programming
C801.3	Develop programs using Open MP
C801.4	Competent to develop programs using MPI
C801.5	Proficient to compare and contrast programming for serial processors and parallel

C302.4	3	1	0	0	0	0	0	0	0	0	0	0	3	1
C302.5	3	3	2	2	2	0	0	0	0	0	0	1	3	2
C303-CS6352/DATABASE MANAGEMENT SYSTEM														
C303.1	3	3	-	-	-	-	-	-	-	-	-	-	3	3
C303.2	3	3	-	2	-	2	-	-	-	-	-	-	3	2
C303.3	3	3	-	-	-	2	-	-	-	-	-	-	3	2
C303.4	3	3	-	-	-	-	-	-	-	-	-	-	3	1
C303.5	3	3	-	2	-	2	2	-	-	-	-	-	3	2
C303.6	3	3	-	2	-	2	2	-	-	-	-	-	3	2
C304-CS6353/COMPUTER ARCHITECTURE														
C304.1	3	2	2	-	-	-	-	-	-	-	-	-	-	-
C304.2	3	2	2	-	-	-	-	-	-	-	-	-	3	-
C304.3	3	3	2	2	-	-	-	-	-	-	-	-	-	2
C304.4	3	2	2	2	-	-	-	-	-	-	-	-	3	3
C304.5	3	3	2	2	-	-	-	-	-	-	-	-	3	3
C304.6	3	3	2	-	-	-	-	-	-	-	-	-	3	3
C305-CS6304/ANALOG AND DIGITAL COMMUNICATION														
C305.1	3	-	-	2	-	-	-	-	-	-	-	-	2	2
C305.2	3	-	-	2	-	-	-	-	-	-	-	-	2	2
C305.3	3	-	2	2	-	-	-	-	2	-	-	-	2	2
C305.4	3	2	2	2	-	-	-	-	-	-	-	-	2	2
C305.5	3	-	2	2	-	2	-	-	-	2	-	-	2	2
C305.6	3	2	2	2	-	-	-	-	-	-	-	3	2	2
C306-GE6351/ENVIRONMENTAL SCIENCE AND ENGINEERING														
C306.1	2	1	2	1	-	2	3	3	2	2	-	3	--	-
C306.2	2	-	2	2	2	1	3	3	2	-	-	2	-	-
C306.3	2	2	2	2	2	2	3	2	2	-	-	2	-	-
C306.4	2	-	2	-	2	1	2	2	2	-	-	2	-	-
C306.5	2	2	2	1	2	2	3	3	2	-	-	2	-	-
C306.6	2	1	2	1	2	2	3	3	2	-	-	2		

C605-CS6659/ ARTIFICIAL INTELLIGENCE														
C605.1	3	3	3	2	-	2	-	-	-	-	-	3	-	2
C605.2	3	3	3	2	-	-	2	-	-	-	-	3	2	2
C605.3	3	3	3	2	-	2	-	-	-	-	-	2	3	2
C605.4	3	3	3	-	-	-	-	-	-	-	-	-	3	-
C605.5	3	3	3	2	-	-	-	2	-	-	-	3	2	3
C606-IT6702/ DATA WAREHOUSING AND DATA MINING														
C606.1	3	2	-	-	-	-	-	-	-	-	-	-	-	2
C606.2	2	3	2	-	-	3	-	-	-	-	-	-	2	2
C606.3	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C606.4	3	3	2	2	2	-	2	-	-	-	-	-	3	2
C606.5	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C607-CS6611/ MOBILE APPLICATION DEVELOPMENT LABORATORY														
C607.1	3	3	3	-	3	2	-	-	-	-	-	3	2	2
C607.2	3	3	3	-	2	2	-	-	-	-	-	3	2	2
C607.3	3	3	3	-	-	2	-	-	-	-	-	3	-	-
C607.4	3	3	3	-	-	2	-	-	-	-	-	3	-	3
C607.5	3	3	3	-	3	2	-	-	-	-	-	3	-	3
C608-CS6612/ COMPILER 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
C608.6	3	3	2		2		-	-		-	-		3	2
C609-GE6674/ COMMUNICATION AND SOFT SKILLS - LABORATORY														
C609.1	3	2	-	2	3	2	2	2	3	3	-	2	2	-
C609.2	3	2	2	2	2	2	2	3	3	3	-	2	2	-
C609.3	3	2	2	2	2	3	2	2	3	3	-	2	2	2
C609.4	2	2	2	2	3	2	2	2	3	3	-	2	-	-

C609.5	2	2	2	2	2	2	2	2	2	3	3	-	2	2	3
C701-CS6701/ CRYPTOGRAPHY AND NETWORK SECURITY															
C701.1	3	3	2	2	2	-	-	-	-	-	-	-	2	3	2
C701.2	3	3	2	2	2	-	2	-	-	-	-	-	2	3	2
C701.3	3	3	3	2	3	2	2	3	3	-	3	2	3	3	2
C701.4	3	3	3	2	3	2	3	3	3	3	2	2	3	3	3
C701.5	3	3	2	2	2	2	2	2	-	-	-	2	3	3	3
C701.6	3	3	2	2	2	2	3	2	2	2	2	2	3	2	2
C702-CS6702/ GRAPH THEORY AND APPLICATIONS															
C702.1	3	2	3	2	2	2	-	-	2	-	-	2	2	2	2
C702.2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-
C702.3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-
C702.4	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-
C702.5	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-
C702.6	3	3	3	3	2	1	1	1	1	1	1	1	1	1	3
C703-CS6703/ GRID AND CLOUD COMPUTING															
C703.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C703.2	3	2	2	2	-	2	-	-	-	-	-	-	3	2	2
C703.3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C703.4	3	3	3	3	3	3	2	-	-	-	-	3	3	2	2
C703.5	3	3	2	2	-	-	2	-	-	-	-	-	2	2	2
C703.6	3	3	2	2	3	-	-	3	-	-	-	3	3	3	3
C704-CS6704/ RESOURCE MANAGEMENT TECHNIQUES															
C704.1	3	3	3	3	-	2	-	-	-	-	-	3	2	3	3
C704.2	3	3	3	3	-	2	-	-	-	-	-	-	3	3	3
C704.3	3	3	3	2	-	3	-	-	-	-	-	2	3	2	2
C704.4	3	3	-	2	-	2	-	-	-	-	-	2	3	2	2
C704.5	3	3	3	3	-	2	-	-	2	-	2	3	3	3	3
C705-IT6801/ SERVICE ORIENTED ARCHITECTURE															
C705.1	2	-	-	-	-	2	-	-	-	3	-	2	-	-	-

C802.2	3	2	3	2	2	-	-	-	-	-	-	-	3	3	
C802.3	2	3	2	2	-	-	-	2	-	2	-	-	-	3	
C802.4	3	3	2	2	3	2	2	2	-	-	-	2	2	3	
C802.5	3	3	3	2	2	2	-	2	-	-	-	2	3	3	
C803-MG6088/ SOFTWARE PROJECT MANAGEMENT															
C803.1	3	3	3	3	-	-	-	-	-	-	-	2	-	3	3
C803.2	3	3	2	2	-	-	-	-	-	-	-	-	-	3	1
C803.3	3	3	2	3	2	-	-	-	-	-	-	-	-	3	3
C803.4	3	2	-	1	-	-	2	-	-	-	-	-	-	3	3
C803.5	2	1	1	-	-	-	-	-	-	-	-	2	-	3	-
C804-CS6811/ 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	

Regulation - 2013 - PG

M.E. COMPUTER SCIENCE AND ENGINEERING

YEAR/SEMESTER : I/I	
S.No	Course Outcome
C101/MA7155/ 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.
C101.2	Find marginal, conditional distribution, statistical average for the standard probability function.
C101.3	For the standard probability function, find the marginal, conditional distribution, statistical average.
C101.4	Find the M.L.E. and fit curves and regression lines using the least squares principle.
C101.5	Small and large samples should be identified, and hypothesis testing should be used.
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.
C102/CP7101/DESIGN AND MANAGEMENT OF COMPUTER NETWORKS	
C102.1	Understand the process of designing a computer network
C102.2	Understand the addressing strategies for managing the networks.
C102.3	Understand the functions of flow analysis.
C102.4	Understand the routing strategies for managing the networks.
C102.5	To learn the process of optimizing a network.
C103/CP7102/ADVANCED DATA STRUCTURES AND ALGORITHMS	
C103.1	Design recursive and iterative algorithms for solving computing problems.
C103.2	Design Linear Programming algorithm and optimization algorithms.
C103.3	Prove NP Completeness of problems.
C103.4	Use randomized algorithms to solve some problems.
C103.5	Understand about the shared objects and concurrent objects.

C103.6	Solve problems using lists, stack, queue and synchronization.
C104/ CP7103/MULTICORE ARCHITECTURES	
C104.1	Identify the limitations of ILP and the need for multicore architectures
C104.2	Discuss the issues related to multiprocessing and suggest solutions
C104.3	Point out the salient features of different multicore architectures and how they exploit Parallelism
C104.4	Critically analyze the different types of inter connection networks
C104.5	Critically analyze the different types of inter connection networks
C105/ CP5153/OPERATING SYSTEM INTERNALS	
C105.1	Identify basic components of UNIX operating system.
C105.2	Conceptualize synchronization amongst various components of a typical operating System.
C105.3	Understand and simulate activities of various File System.
C105.4	Describe the memory management system
C105.5	Illustrate Process communication and program Execution.
C105.6	Correlate basic concepts of operating system with an existing operating system.
C106/ CP5191/MACHINE LEARNING TECHNIQUES	
C106.1	Differentiate various learning approaches, and to interpret the concepts of supervised learning.
C106.2	Compare the different dimensionality reduction techniques.
C106.3	Apply theoretical foundations of decision trees to identify best split and Bayesian classifier to label data points.
C106.4	Illustrate the working of classifier models like SVM, Neural Networks and identify classifier model for typical machine learning applications.
C106.5	Identify the state sequence and evaluate a sequence emission probability from a given HMM.
C106.6	Illustrate and apply clustering algorithms and identify its applicability in real life problems.
C107/ CP7111/ADVANCED DATA STRUCTURES LABORATORY	
C107.1	Implement algorithms using dynamic programming design techniques.

C107.2	Design programs by implementing recursive backtracking algorithms.
C107.3	Design and Implement randomized algorithms.
C107.4	Implement graph search algorithms to solve problems.
C107.5	Design shared objects and concurrent objects for applications.
C107.6	Develop programs of locking and synchronization mechanisms for concurrent linked lists, concurrent queues, and concurrent stacks.
C108/CP7112/CASE STUDY - NETWORK DESIGN (TEAM WORK)	
C108.1	Analyzed the performance of various configurations and protocols in LAN.
C108.2	Understanding the concept of RIP and OSPF
C108.3	Demonstrated the concept of Network Security and Networks Traffic Flow.
C108.4	Understand the configuration of Firewall.
C108.5	Understand the integration of EIGRP (Enhanced Interior Gateway Routing Protocol) into Existing Networks
C108.6	Analyzed the performance of various configurations and protocols in LAN.
YEAR/SEMESTER : I/II	
C109/CP7201/THEORETICAL FOUNDATIONS OF COMPUTER SCIENCE	
C109.1	Review sets, relations, functions, and other foundations
C109.2	Understand propositional and predicate logics and their applications
C109.3	Understand lambda calculus and functional programming
C109.4	Understand graph structures and their application
C109.5	Understand formal models of computation, computability, and decidability
C110/CP7202/ADVANCED DATABASES	
C110.1	Discuss the fundamental concepts of relational database and SQL.
C110.2	Use ER model for Relational model mapping to perform database design effectively.
C110.3	Summarize the properties of transactions and concurrency control mechanisms.
C110.4	Outline the various storage and optimization techniques.
C110.5	Compare and contrast various indexing strategies in different database systems.
C110.6	Explain the different advanced databases.
C111/ CP7203/PRINCIPLES OF PROGRAMMING LANGUAGES	
C111.1	Describe syntax and semantics of programming languages

C111.2	Explain data, data types, and basic statements of programming languages
C111.3	Design and implement subprogram constructs
C111.4	Apply object-oriented, concurrency, and event handling programming constructs
C111.5	Develop programs in Scheme, ML, and Prolog
C112/CP7204/ADVANCED OPERATING SYSTEMS	
C112.1	Discuss the various synchronization, scheduling and memory management issues
C112.2	Demonstrate the Mutual exclusion, Deadlock detection and agreement protocols of
C112.3	Distributed operating system
C112.4	Discuss the various resource management techniques for distributed systems
C112.5	Identify the different features of real time and mobile operating systems
C112.6	Install and use available open source kernel
C113/CS8791/CLOUD COMPUTING	
C113.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
C113.2	Learn the key and enabling technologies that help in the development of cloud.
C113.3	Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.
C113.4	Explain the core issues of cloud computing such as resource management and security.
C113.5	Be able to install and use current cloud technologies.
C114/ NE7202/NETWORK AND INFORMATION SECURITY	
C114.1	Understand the fundamentals of Cryptography
C114.2	Apply the knowledge of various algorithms to provide confidentiality, integrity and authenticity.
C114.3	Implementation of various key distribution and management schemes.
C114.4	Examine encryption techniques to secure data in transit across data networks
C114.5	Design security applications in the field of Information technology
C115/CP7211/ADVANCED DATABASES LABORATORY	
C115.1	Use typical data definitions and manipulation commands.
C115.2	Design applications to test Nested and Join Queries.
C115.3	Implement simple applications that use Views.

C115.4	Make use of ER modeling and normalization to design and implement database.
C115.5	Implement applications that require a Front-end Tool.
C115.6	Analyze the use of Tables, Views, Functions and Procedures.
C116/CP7212/CASE STUDY - OPERATING SYSTEMS DESIGN (TEAM WORK)	
C116.1	Develop assigned modules of operating systems design carrying out coding, testing, and documentation work involved.
C116.2	Demonstrate individual competence in building medium size operating system components.
C116.3	Demonstrate ethical and professional attributes of a computer engineer.
C116.4	Prepare suitable plan with clear statements of deliverables, and track the same.
C116.5	Make individual presentation of the work carried out.
C116.6	Prepare well-organized written documents to communicate individual work accomplished.
YEAR/SEMESTER : II/III	
C201/CP7301/SOFTWARE PROCESS AND PROJECT MANAGEMENT	
C201.1	able to understand overall SDLC and adopt suitable processes
C201.2	able to elicit, analyze, prioritize, and manage both functional and quality requirements
C201.3	able to estimate efforts required, plan, and track the plans
C201.4	able to understand and apply configuration and quality management techniques
C201.5	able to evaluate, manage, and design processes
C202/ CS8091/BIG DATA ANALYTICS	
C202.1	Understand the impact of data analytics for business decisions and strategy
C202.2	Carry out data analysis/statistical analysis
C202.3	To carry out standard data visualization and formal inference procedures
C202.4	Design Data Architecture
C202.5	Understand various Data Sources
C202.6	Collect, manage, store, query, and analyze various form of big data
C203/CP7026/SOFTWARE QUALITY ASSURANCE	
C203.1	Perform functional and nonfunctional tests in the life cycle of the software product.
C203.2	Understand system testing and test execution process.

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/CP7101/DESIGN AND MANAGEMENT OF COMPUTER NETWORKS														
C102.1	3	3	1	1	2	-	-	-	-	-	-	1	3	1
C102.2	3	3	2	2	3	2	3	3	3	3	2	3	3	2
C102.3	3	3	2	2	2	3	-	-	-	-	2	3	3	2
C102.4	3	3	2	2	3	2	2	3	3	3	3	2	3	2
C102.5	3	3	2	2	3	-	-	-	-	-	2	2	3	2
C103/CP7102/ADVANCED DATA STRUCTURES AND ALGORITHMS														
C103.1	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C103.2	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C103.3	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C103.4	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C103.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C103.6	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C104/ CP7103/MULTICORE ARCHITECTURES														
C104.1	3	3	1	1	2	-	-	-	-	-	-	1	3	1
C104.2	3	3	2	2	3	2	3	3	3	3	2	3	3	2
C104.3	3	3	2	2	2	3	-	-	-	-	2	3	3	2
C104.4	3	3	2	2	3	2	2	3	3	3	3	2	3	2
C104.5	3	3	2	2	3	-	-	-	-	-	2	2	3	2
C105/ CP5153-OPERATING SYSTEM INTERNALS														
C105.1	3	3	3	1	-	-	-	-	1	-	-	2	1	2
C105.2	3	3	3	1	-	-	-	-	1	-	-	1	1	2
C105.3	3	3	3	1	-	-	-	-	1	-	-	1	2	1
C105.4	3	3	3	1	-	-	-	-	1	-	-	2	1	1
C105.5	3	3	3	2	-	-	-	-	-	-	-	-	1	1
C105.6	3	3	3	3	-	-	-	-	-	-	-	-	1	1
C106/ CP5191-MACHINE LEARNING TECHNIQUES														

C115.3	3	2	2	-	-	-	-	-	-	-	-	-	2	2
C115.4	3	2	2	-	-	-	-	-	-	-	-	-	3	2
C115.5	3	2	2	-	-	-	-	-	-	-	-	-	2	2
C115.6	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C116/CP7212/CASE STUDY - OPERATING SYSTEMS DESIGN (TEAM WORK)														
C116.1	3	3	1	1	2	-	-	-	-	-	-	1	3	1
C116.2	3	3	2	2	3	2	3	3	3	3	2	3	3	2
C116.3	3	3	2	2	2	3	-	-	-	-	2	3	3	2
C116.4	3	3	2	2	3	2	2	3	3	3	3	2	3	2
C116.5	3	3	2	2	3	-	-	-	-	-	2	2	3	2
C116.6	3	3	2	2	3	-	-	-	-	-	2	2	3	2
C201/CP7301/SOFTWARE PROCESS AND PROJECT MANAGEMENT														
C201.1	3	3	-	3	3	-	-	-	-	-	-	-	3	-
C201.2	3	3	-	2	3	-	-	-	-	-	-	-	3	-
C201.3	3	3	-	2	3	-	-	-	-	-	-	2	3	3
C201.4	3	2	-	2	3	-	-	-	-	-	-	-	2	-
C201.5	3	3	2	2	2	-	-	-	-	-	-	2	3	3
C202/ CS8091/BIG DATA ANALYTICS														
C202.1	3	3	2	2	-	-	-	-	-	-	-	-	3	-
C202.2	3	3	2	2	2	-	-	-	-	-	-	-	3	-
C202.3	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C202.4	3	2	2	2	2	-	-	-	-	-	-	-	2	-
C202.5	3	2	2	2	2	-	-	-	-	-	-	-	2	-
C205.6	3	2	2	2	2	-	-	-	-	-	-	-	2	-
C203/ CP7026/SOFTWARE QUALITY ASSURANCE														
C203.1	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C203.2	3	3	-	3	2	-	-	-	-	-	-	-	3	-
C203.3	3	3	-	2	2	-	-	-	-	-	-	3	3	2
C203.4	3	3	-	2	2	-	-	-	-	-	-	-	3	-
C203.5	3	3	2	2	2	-	-	-	-	-	-	3	3	2

C204/ CP7028/ENTERPRISE APPLICATION INTEGRATION														
C204.1	3	3	1	1	2	-	-	-	-	-	-	1	3	1
C204.2	3	3	2	2	3	2	3	3	3	3	2	3	3	2
C204.3	3	3	2	2	2	3	-	-	-	-	2	3	3	2
C204.4	3	3	2	2	3	2	2	3	3	3	3	2	3	2
C204.5	3	3	2	2	3	-	-	-	-	-	2	2	3	2
C205/CP7311-PROJECT PHASE - I														
C205.1	3	3	-	-	-	2	-	-	-	-	-	2	2	-
C205.2	3	3	-	-	2	-	-	-	-	2	-	-	2	-
C205.3	3	-	-	2	2	2	-	-	-	2	-	2	-	2
C205.4	2	-	-	-	-	2	-	-	-	-	-	2	-	2
C205.5	3	2	-	-	-	2	-	-	-	-	-	2	2	-
C206/CP7411-PROJECT PHASE - II														
C206.1	3	3	-	-	-	2	-	-	-	-	-	2	2	-
C206.2	3	3	-	-	2	-	-	-	-	2	-	-	2	-
C206.3	3	-	-	2	2	-	-	-	-	2	-	2	-	2
C206.4	2	-	-	-	-	2	-	-	-	-	-	2	-	2
C206.5	3	2	-	-	-	2	-	-	-	-	-	2	2	-


PRINCIPAL

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

Regulation – 2017 – UG

YEAR / SEMESTER : II/III	
C301-MA8351/DISCRETE MATHEMATICS	
C301.1	Reformulating and applying statements from common language to formal logic
C301.2	Identify the structures at various levels in combinatorial
C301.3	Compare various groups and its algorithms in computer programming
C301.4	Demonstrate the concept of groups & subgroups
C301.5	Exposed the concepts and properties of lattices and Boolean algebra in mathematical manner
C302-CS8351/DIGITAL PRINCIPLES AND SYSTEM DESIGN	
C302.1	Simplify Boolean functions using K map and tabulation method.
C302.2	Design and Analyze Combinational Circuits
C302.3	Design and Analyze Sequential Circuits
C302.4	Implement designs using Programmable Logic Devices
C302.5	Interpret HDL code for combinational and Sequential Circuits
C303-CS8391/DATA STRUCTURES	
C303.1	Implement the operations of List ADT for problem solving.
C303.2	Apply the different linear data structures (Stack and Queue) to problem solutions.
C303.3	Implement the tree data structures for solving the given problems.
C303.4	Apply the graph data structures to solve the given problems.
C303.5	Implement various sorting and searching algorithms.
C303.6	Apply hashing Techniques to solve the collision problems.
C304-CS8392/OBJECT ORIENTED PROGRAMMING	
C304.1	Classify the difference between object oriented programming and procedural oriented language.
C304.2	Identify the members of a class and its relationship for a particular problem.
C304.3	Demonstrate the concepts of polymorphism and inheritance
C304.4	Identify how to overcome the disrupts of normal flow with the sequence of data.
C304.5	Illustrate the importance of concurrency and able to apply the classes and interfaces as parameter.
C304.6	Analyze platform independent application runtime environment and choose

	appropriate run time environment to create GUI and web application using java.
C305-EC8395/COMMUNICATION ENGINEERING	
C305.1	Illustrate analog communication techniques
C305.2	Explain digital communication techniques
C305.3	Illustrate data and pulse communication techniques
C305.4	Make use of various error control coding techniques to identify/correct errors
C305.5	Outline multi-user radio communication
C305.6	Illustrate different types of noise and its calculation.
C306-CS8381/DATA STRUCTURES LABORATORY	
C306.1	Develop programs to implement linear Data Structures operations
C306.2	Design programs to apply list, stack & queue operations
C306.3	Build programs to implement non linear Data Structures operations
C306.4	Apply non linear Data Structures for solving problems.
C306.5	Develop programs to implement sorting & searching algorithms.
C306.6	Design programs to implement various collision resolution techniques in hashing.
C307- CS8383/ OBJECT ORIENTED PROGRAMMING LABORATORY	
C307.1	Classify the difference between object oriented programming and procedural oriented language.
C307.2	Identify the members of a class and its relationship for a particular problem.
C307.3	Demonstrate the concepts of polymorphism and inheritance
C307.4	Identify how to overcome the disrupts of normal flow with the sequence of data.
C307.5	Summarize the importance of concurrency and able to apply the classes and interfaces as parameter.
C307.6	Analyze platform independent application runtime environment and choose appropriate run time environment to create GUI and web application using java.
C308-CS8382/DIGITAL SYSTEMS LABORATORY	
C308.1	Construct Sequential logic circuits to perform Count & Shift
C308.2	Build combinational logic circuits to perform arithmetic operations.
C308.3	Construct Sequential logic circuits to perform Count
C308.4	Implement sequential circuits like registers and counters.

C308.5	Construct Sequential logic circuits to perform Shift Operations
C309-HS8381/INTERPERSONAL SKILLS/LISTENING & SPEAKING	
C309.1	Adeptly use the spoken word in interpersonal communication, small group interactions and public speaking.
C309.2	Use the written word for informational, persuasive and creative poses.
C309.3	Use language in ways appropriate of the communicative contexts they find themselves in both during and after the education.
C309.4	Analyze communication context in terms of varieties of language.
C309.5	Develop a global awareness of political, social and corporate issues influenced by communication sensitivity and skills.
YEAR / SEMESTER : II/IV	
C401-MA8402/PROBABILITY AND QUEUEING THEORY	
C401.1	Analyze the fundamental knowledge of the concept of probability in real life phenomenon
C401.2	Apply the concept of two dimensional random variable in engineering discipline
C401.3	Make use of Stochastic process to solve real life application
C401.4	Analyze the queuing models
C401.5	Identify solutions for probabilistic models
C402- CS8491/COMPUTER ARCHITECTURE	
C304.1	Identify the hardware blocks, instructions set & addressing mode
C304.2	Solving the architecture related problems using arithmetic operations
C304.3	Use various matrix to calculate the performance of a computer system
C304.4	Detect pipeline hazards and identify possible solutions to those hazards.
C304.5	Overcome the challenges of parallelism and its classifications.
C304.6	Demonstrate the basic concepts of memory and I/O Systems
C403- CS8492/DATABASE MANAGEMENT SYSTEMS	
C403.1	Illustrate the database design for applications.
C403.2	Make use of ER diagram and normalization techniques in database application
C403.3	Apply concurrency control & recovery mechanism for database problems.
C403.4	Apply the various concepts in query processing.
C403.5	Compare various storage techniques in database.

C403.6	Apply security concepts to databases
C404- CS8451/DESIGN ANALYSIS OF ALGORITHMS	
C404.1	Interpret the fundamental needs of algorithms in problem solving.
C404.2	Classify the different algorithm design techniques for problem solving.
C404.3	Develop algorithms for various computing problems.
C404.4	Analyze the time and space complexity of various algorithms.
C404.5	Identify the limitations of algorithms in problem solving.
C404.6	To identify the types of problem, formulate, analyze and compare the efficiency of algorithms.
C405- CS8493/OPERATING SYSTEMS	
C405.1	Summarize the basic concepts and functions of Operating Systems
C405.2	Outline various threading models, process synchronization and deadlocks
C405.3	Compare the performance of various CPU scheduling algorithms
C405.4	Outline the basic concept of various memory management schemes
C405.5	Expound I/O management and file systems
C405.6	Identified the model Linux multifunction server and utilize local network services
C406- CS8494/SOFTWARE ENGINEERING	
C406.1	Explain the software engineering process and project management
C406.2	Demonstrate software requirements and analysis
C406.3	Outline the software design process and user interface
C406.4	Compare and contrast various software testing
C406.5	Discuss about the software integration and project management
C407-CS8481/DATABASE MANAGEMENT SYSTEMS LABORATORY	
C407.1	Infer database language commands to create simple database
C407.2	Analyze the database using queries to retrieve records
C407.3	Applying PL/SQL for processing database
C407.4	Analyze front end tools to design forms, reports and menus
C407.5	Develop solutions using database concepts for real time requirements.
C407.6	Develop database modeling for a problem.
C408-CS8461/OPERATING SYSTEMS LABORATORY	

C408.1	Illustrate about the Unix command, shell programming and to compare the performance of various cpu scheduling algorithm.
C408.2	Implement dead lock avoidance, detection algorithm.
C408.3	Implement semaphore.
C408.4	Create process and implement IPC.
C408.5	Analyze the performance of the various page replacement Algorithms
C408.6	Implement file organization and file allocation strategies
C409-3S8461/ADVANCED READING AND WRITING	
C409.1	Take international examination such as IELTS and TOEFL
C409.2	Participate in Group Discussion
C409.3	Successfully answer questions in Interviews.
C409.4	Make effective Presentations.
C409.5	Participate confidently and appropriately in conversations both formal and informal
YEAR / SEMESTER : III/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.
C501.2	Identify the structures on various levels in combinatorial analysis and generating functions
C501.3	Discuss various graph and its algorithms in computer programming.
C501.4	Demonstrate the examples of subgroups and normal subgroup and use the concepts of isomorphism and homomorphism for groups, rings.
C501.5	Exposed the concepts and properties of lattices and Boolean algebra in mathematical manner.
C502-CS8591/COMPUTER NETWORKS	
C502.1	Understand the basic layers and its function in computer networks.
C502.2	Evaluate the performance of a network.
C502.3	Evaluate the basis of how data flows one node to another
C502.4	Analyze and design routing algorithms
C502.5	Design protocols for various functions in the network
C502.6	Understand the working of various application layer protocols.

C503-EC8691/MICROPROCESSORS AND MICROCONTROLLERS	
C503.1	Design & implement program on 8086 microprocessor.
C503.2	Design and interface I/O circuits.
C503.3	Design Memory Interfacing circuit
C503.4	Design and implement 8051 microcontroller based systems.
C503.5	Understand the Bus Structure and advanced processor
C504-CS8501/THEORY OF COMPUTATION	
C504.1	Design automata and prove a statement
C504.2	Construct regular expression for a pattern
C504.3	Correlate different types of automata to real world applications
C504.4	Design a turning machine to solve problem on mathematical foundations
C504.5	Decide whether a problems is decidable or not
C504.6	Identify different computational complexities
C505-CS8592/OBJECT ORIENTED ANALYSIS AND DESIGN	
C505.1	Understand the difference between object oriented programming and procedural oriented language
C505.2	Identify members of a class and its relationships for a particular problem
C505.3	Demonstrate the concepts of polymorphism and inheritance
C505.4	Identify how to overcome the disrupts of normal flow with the sequence of data
C505.5	Understand the importance of concurrency and able to apply the classes and interfaces as parameters
C505.6	Analyze platform independent application runtime environment and choose appropriate runtime environment to create GUI and Web applications using Java language.
C506-OCE552/GEOGRAPHICAL INFORMATION SYSTEMS	
C506.1	Analyze the basic components of GIS.
C506.2	Classify the data models, coordinate systems and data quality.
C506.3	Process spatial and attribute data inputs and prepare the data linking and mapping.
C506.4	Identify the data analysis tools and rectify mapping inaccuracies.
C506.5	Formulate and solve geospatial problems.
C507-EC8681/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	

C507.1	Design & implement program on 8086 microprocessor.
C507.2	Design and interface I/O circuits.
C507.3	Design Memory Interfacing circuit
C507.4	Design and implement 8051 microcontroller based systems.
C507.5	Understand the Bus Structure and advanced processor
C508-CS8582/OBJECT ORIENTED ANALYSIS AND DESIGN LABORATORY	
C508.1	Analyze, design, document the requirements through use case driven approach
C508.2	Identity, analyze and model structural and behavioral concepts of the system
C508.3	Develop explore the conceptual model into various scenarios and applications
C508.4	Apply the concepts of architectural design for deploying the code for software.
C509-CS8581/NETWORKS LABORATORY	
C509.1	Implement various protocol using TCP and UDP
C509.2	Compare the performance of different transport layer protocols
C509.3	Use simulation tools to analyze the performance of various network protocols
C509.4	Analyze various routing algorithms
C509.5	Implement error correction codes
YEAR / SEMESTER : III/VI	
C601-CS8651/INTERNET PROGRAMMING	
C601.1	Implement various protocol using TCP and UDP
C601.2	Compare the performance of different transport layer protocols
C601.3	Use simulation tools to analyze the performance of various network protocols
C601.4	Analyze various routing algorithms
C601.5	Implement error correction codes
C602-CS8691/ ARTIFICIAL INTELLIGENCE	
C602.1	Identify problems that are able to solution by AI methods.
C602.2	Recognize appropriate AI methods to solve a given problem.
C602.3	Able to interpret the problem in the given logic.
C602.4	Implement basic AI algorithms.
C602.5	Assess critically the techniques presented and apply them to real world problems
C603-CS8601/MOBILE COMPUTING	

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

C606.6	Use practical knowledge of a variety of ways to test software and an understanding of some of the tradeoffs between testing techniques
C607-CS8661/INTERNET PROGRAMMING LABORATORY	
C607.1	Understand, analyze and apply the role of languages like HTML, XML, and JavaScript.
C607.2	analyze a web page and identify its elements and attributes
C607.3	Develop java program based on protocols like HTTP, SMTP, POP3 and FTP.
C607.4	Create dynamic web pages using Servlet and JSP.
C607.5	Obtain the knowledge on data manipulation in a web.
C608-CS8662/MOBILE APPLICATION DEVELOPMENT LABORATORY	
C608.1	Build a native application using GUI components and Mobile application development frame work
C608.2	Develop an application using basic graphical primitives and databases
C608.3	Construct an application using multi threading and RSS feed
C608.4	Make use of location identification using GPS in an application
C608.5	Design and Implement various mobile applications using emulators.
C609-CS8611/MINI PROJECT	
C609.1	Choose problems with technical importance and societal contribution
C609.2	Identify and survey the relevant literature for getting exposed to related solutions
C609.3	Build project plans with feasible requirements
C609.4	Analyze, design and develop adaptable and reusable solutions
C609.5	Implement and test solutions to trace against the user requirements
C609.6	Deploy the solutions for better manageability and provide scope for improvability
C610-HS8581/PROFESSIONAL COMMUNICATION	
C610.1	Apply appropriate communication skills across settings, purposes and audiences.
C610.2	Demonstrate knowledge of communication theory and applications.
C610.3	Practice critical thinking to develop innovative and well-founded perspectives related to the students emp3asis. Build and maintain healthy and effective relationships.
C610.4	Use technology to communicate effectively in various settings and contexts.
C610.5	Demonstrate appropriate and professional ethical behavior.

YEAR / SEMESTER : IV/VII	
C701-MG8591/PRINCIPLES OF MANAGENENT	
C701.1	Evaluate the global context for taking managerial actions of planning, organizing and controlling.
C701.2	Assess global situation, including opportunities and threats that will impact management of an organization.
C701.3	Integrate management principles into management practices.
C701.4	Assess managerial practices and choices relative to ethical principles and standards.
C701.5	Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances.
C702-CS8792/CRYPTOGRAPHY AND NETWORK SECURITY	
C702.1	To explain the basics of number theory and compare the encryption techniques
C702.2	To Summarize the functionality of public key cryptography
C702.3	To apply the message authentication functions and secure algorithms for secure transactions
C702.4	To demonstrate and apply the security systems
C702.5	To discuss the different levels of security and services
C702.6	To transact and keep the information in a secured manner
C703-CS8791/CLOUD COMPUTING	
C703.1	Understand the concept of distributed computing.
C703.2	Apply grid computing techniques.
C703.3	Understand the concept of virtualization.
C703.4	Use grid and cloud tool kits to develop the applications.
C703.5	Apply the security models in the grid and cloud environment
C703.6	Design and develop a private cloud environment with security enhanced.
C704- OBM772/HOSPITAL MANAGEMENT	
C704.1	Explain the principles of hospital administration.
C704.2	Identify the importance of human resource management
C704.3	List various marketing research techniques.
C704.4	Identify Information management systems and its uses.

C704.5	Understand safety procedures followed in hospitals
C705- IT8074/SERVICE ORIENTED ARCHITECTURE	
C705.1	Infer the XML Schema, Name Space and Document Structure.
C705.2	Build Applications based on XML.
C705.3	Outline the SOA ethics and Service levels.
C705.4	Develop web service using technology elements.
C705.5	Build SOA based applications for intra and inter-enterprise applications.
C705.6	Elucidate the security issues in XML.
C706- CS8079/HUMAN COMPUTER INTERACTION	
C706.1	Competent to design effective dialog for HCI
C706.2	Apply an interactive design process and universal design principles in designing HCI systems
C706.3	Able to discuss HCI issues in groupware, ubiquitous computing, virtual reality, multimedia, and Word Wide Web-related environments
C706.4	Design mock ups and carry out user and expert evaluation of interfaces
C706.5	Develop meaningful user interface
C706.6	how cognition and perception, which encompass attention, memory, thought, the“senses” play a role in affecting the experience of interactive design
C707-CS8711/CLOUD COMPUTING LABORATORY	
C707.1	Make use of the grid toolkit.
C707.2	Design and implement new grid applications on the grid.
C707.3	Make use of the cloud toolkit.
C707.4	Build cloud applications on cloud.
C707.5	Construct the applications according to the services.
C707.6	Develop a grid and cloud portal
C708-IT8761/SECURITY LABORATORY	
C708.1	To apply the cryptographic algorithm for the secured data communication.
C708.2	Apply the knowledge of symmetric cryptography to implement simple ciphers
C708.3	Analyze and implement public key algorithms like RSA
C708.4	To utilize the open source tools for analyzing the network and to provide the security for the date.

C708.5	Apply and set up firewalls and intrusion detection systems using open source technologies and to explore email security.
YEAR / SEMESTER : IV/VIII	
C801-CS8074/CYBER FORENSICS	
C801.1	Identify the process in taking digital evidence.
C801.2	Describe how to conduct an investigation using methods of memory, network and email forensics.
C801.3	Analyze various data acquisition tools for collecting digital evidence.
C801.4	outline a range of situations where digital forensics may be applicable
C801.5	Identify issues in the practice of digital forensic investigations.
C801.6	Identify and apply various computer forensics tools to solve the computer forensic cases.
C802-CS8078/GREEN COMPUTING	
C802.1	Acquire knowledge to adopt green computing practices to minimize negative impacts on the environment.
C802.2	Enhance the skill in energy saving practices in their use of hardware.
C802.3	Evaluate technology tools that can reduce paper waste and carbon footprint by the stakeholders.
C802.4	Understand the ways to minimize equipment disposal requirements.
C802.5	Identify and apply various Computing tools to solve the Environment cases.
C803-CS8811/PROJECT WORK	
C803.1	Identify and finalize problem statement by surveying variety of domains
C803.2	Perform requirement analysis and identify design methodologies
C803.3	Apply advanced programming techniques
C803.4	Present technical report by applying different visualization tools and Evaluation metrics

C301-MA8351/DISCRETE MATHEMATICS														
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
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

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 ARC3ITECTURE														
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
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 ALGORIT3MS														
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
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	-

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	
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	

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	-	-
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	-	-

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
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

Regulation - 2017 - PG

M.E. COMPUTER SCIENCE AND ENGINEERING

YEAR/SEMESTER : I/I	
S.No	Course Outcome
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.
C101.2	Find marginal, conditional distribution, statistical average for the standard probability function.
C101.3	For the standard probability function, find the marginal, conditional distribution, statistical average.
C101.4	Find the M.L.E. and fit curves and regression lines using the least squares principle.
C101.5	Small and large samples should be identified, and hypothesis testing should be used.
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.
C102/CP5151/ADVANCED DATA STRUCTURES AND ALGORITHMS	
C102.1	Understand Asymptotic notations and use recurrences methods.
C102.2	Design programs for implementing trees and hierarchical data structures.
C102.3	Implement various algorithms using graph structures
C102.4	Develop programs for dynamic programming problems.
C102.5	Design programs to implement greedy algorithms.
C102.6	Understand and prove NP Completeness
C103/CP5152/ADVANCED COMPUTER ARCHITECTURE	
C103.1	Understands the concepts of parallel computing and hardware technologies.
C103.2	Analyze linear and non-linear pipeline processors.
C103.3	Compare and contrast the parallel architectures.
C103.4	Illustrate parallel programming concepts.
C103.5	Measure the performance of the architecture in terms of right parameters.
C103.6	Summarize parallel architecture and software used for them.

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

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

C111.6	Collect, manage, store, query, and analyze various form of big data
C112/ CP5093MOBILE AND PERVASIVE COMPUTING	
C112.1	Obtain a thorough understanding of Basic Mobile computing architecture and concepts
C112.2	Explain the latest 4G Telecommunications systems
C112.3	Express the knowledge of basic concepts of pervasive computing
C112.4	Implement the Human Computer Interaction in Pervasive computing
C112.5	Work on the pervasive concepts in Mobile Environment
C113/CP5071/IMAGE PROCESSING AND ANALYSIS	
C113.1	Demonstrate how digital images are acquired, stored and relationship between pixels
C113.2	Apply image transformation, and image enhancement techniques.
C113.3	Remove noise from real-world imagery using a variety of filtering techniques in spatial and frequency domain
C113.4	Illustrate image compression, and image segmentation techniques.
C113.5	Represent features of images.
C114/ CS5261/DATA ANALYTICS LABORATORY	
C114.1	Process big data using Hadoop framework
C114.2	Build linear and logistic regression models
C114.3	Apply linear and logistic regression models
C114.4	Perform data analysis with machine learning methods
C114.5	Perform graphical data analysis
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
C115.2	To Develop the Reading and notes for first 5 papers.
C115.3	Write the sections of your paper based on the classification / categorization diagram in keeping with the goals of your survey
C115.4	Illustrate the Collecting the relevant bibliography
C115.5	Studying the papers and understanding the author's contributions and critically analyzing each paper.

C115.6	Illustrate and Writing the Final Paper and giving the final Presentation.
YEAR/SEMESTER : II/III	
C201/CP5005/SOFTWARE QUALITY ASSURANCE AND TESTING	
C201.1	Perform functional and nonfunctional tests in the life cycle of the software product.
C201.2	Understand system testing and test execution process.
C201.3	Identify defect prevention techniques and software quality assurance metrics.
C201.4	Apply techniques of quality assurance for typical applications.
C201.5	To build design concepts for system testing and execution
C202/ CP5074/SOCIAL NETWORK ANALYSIS	
C202.1	Work on the internals components of the social network.
C202.2	Model and visualize the social network.
C202.3	Mine the behavior of the users in the social network.
C202.4	Predict the possible next outcome of the social network.
C202.5	Apply social network in real time applications.
C203/CP5076/INFORMATION STORAGE MANAGEMENT	
C203.1	To Understand the Concept of Information Storage and Data center Environment.
C203.2	To understand about Data Protection.
C203.3	To Know and understand Intelligent Storage System.
C203.4	To Understand Fiber Channel SAN
C203.5	To Understand Network Attached Storage (NAS).
C203.6	To Know the Backup and Archive Technologies.
C204/CP5311/ PROJECT WORK PHASE – I	
C204.1	Identify and finalize problem statement by surveying variety of domains
C204.2	Perform requirement analysis and identify design methodologies
C204.3	Apply advanced programming techniques
C204.4	Present technical report by applying different visualization tools and Evaluation metrics
C204.5	Able to know the importance of collection framework in developing effective programs
YEAR/SEMESTER : II/IV	
C206/CP5411-PROJECT PHASE - II	
C206.1	Plan and construct improved methods for an identified problem by applying acquired knowledge

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

Course Outcome	Programme Outcomes I & II YEAR PG SUBJECTS												PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
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														
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														
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	-
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

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


PRINCIPAL

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

**ELECTRICAL AND
ELECTRONICS ENGINEERING**

Regulation – 2013 - UG

YEAR/SEMESTER : II / III	
C201-MA6351/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.
C201.2	To develop Fourier Series for different types of functions.
C201.3	Find the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions
C201.4	To solve the Problems using Fourier Transforms and its inverse Transforms.
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.
C201.6	After successfully completing the course, the student will have a good understanding of the topics and their applications
C202-EE6301/DIGITAL LOGIC CIRCUITS	
C202.1	Develop a digital logic and apply it to solve real life problems.
C202.2	Analyze, design and implement combinational logic circuits.
C202.3	Classify different semiconductor memories.
C202.4	Analyze, design and implement sequential logic circuits.
C202.5	Analyze digital system design using PLD.
C202.6	Simulate and implement combinational and sequential circuits using VHDL systems.
C203-EE6302/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.
C203.2	Able to analyse, find the Electric field produced in free space, dielectrics and apply boundary conditions to find Capacitance, Energy density.
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 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.
C203.5	Capable to analyse the magnetic Circuits ,apply Faraday's law solve problems related to Displacement current
C203.6	To describe and derive the Maxwell's equations and apply it in solving Electromagnetic wave generating equations.
C204-GE6351/ ENVIRONMENTAL SCIENCE AND ENGINEERING	
C204.1	Understand the values, threats and conservation of biodiversity and classify various ecosystems.
C204.2	Identify and implement technological and eco solutions to environmental problems
C204.3	Develop the knowledge on various natural resources, their causes and their effects
C204.4	Understand various environmental acts and disaster management.
C204.5	Relate population and environment and the role of IT in environment and human health.
C204.6	Analyze the impact of environment integrated themes and social issues
C205-EC6202/ELECTRONIC DEVICES AND CIRCUITS	
C205.1	Understand the construction and modeling of semiconductor diodes and rectifiers.
C205.2	Discuss the methods of transistors and its characteristics.
C205.3	Interpret the mid band analysis of amplifier circuits with gain and impedance values.
C205.4	Analyze the frequency response of differential amplifier and tuned circuits.
C205.5	Examine the methods of feedback and generation of oscillator conditions.
C205.6	Understand characteristics of electron devices towards its applications.
C206-EE6303/ LINEAR INTEGRATED CIRCUITS AND APPLICATIONS	
C206.1	Explain the procedure for the fabrication of IC
C206.2	Summarize the DC & AC characteristics of Operational amplifier.
C206.3	Discuss the applications of Operational amplifier
C206.4	Describe the internal functional blocks of special ICs like Timer and PLL
C206.5	Classify types of voltage regulators and describe the special ICs
C206.6	Ability to understand and analyse, linear and digital electronic circuits.
C207- EC6361/ELECTRONICS LABORATORY	
C207.1	Analyse various types of diodes and its v-i characteristics.
C207.2	Construct the various types of transistors and draw its v-i characteristics.

C207.3	Demonstrate the various types of amplifiers.
C207.4	Categorize about filter circuits and multivibrators.
C207.5	Design and analyze the feedback amplifiers and oscillator circuits.
C207.6	Ability to perform different types of electronic circuits and its characteristics.
C208- EE6311/ LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY	
C208.1	Apply Boolean functions to implement adder, subtractor circuits and convert Excess 3 to BCD, Binary to Gray code and vice versa.
C208.2	Test Parity generator and checker and Design encoder decoder circuits
C208.3	Demonstrate 4 bit synchronous, asynchronous counter and Shift registers
C208.4	Illustrate multiplexer demultiplexer circuit and apply 555 timer in Monostable and As table operation.
C208.5	Apply OP-AMP to construct Adder, comparator, differentiator, Integrator and Describe VCO, PLL characteristics.
C208.6	Ability to understand and analyse, linear and digital electronic circuits.
YEAR/SEMESTER : II / IV	
C209-MA6459/ 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.
C209.2	To make effective use of the interpolation formulas to find the missing data using the given data.
C209.3	Apply the techniques of solving any algebraic, transcendental equations
C209.4	Distinguish among the criteria of selection and procedures of various Numerical integration as well as Numerical differentiation rules.
C209.5	Apply various numerical methods in solving an initial value problem involving an ordinary differential equation.
C209.6	Estimate the best fit polynomial for the given tabulated data using the methods of Newton's interpolation and Lagrange's interpolation.
C210-EE6401/ ELECTRICAL MACHINES – I	
C210.1	Obtain the knowledge about the fundamental of Magnetic circuits and Magnetic Materials.
C210.2	Secure the idea about the various construction details and erection of Transformer

C210.3	Assured the working principles of electrical machines and classify the various generator and its mathematical models
C210.4	Establish the working principles of electrical machines and classify the various motor and its speed control techniques
C210.5	Expertise in testing methods to obtain the performance of DC Machines.
C210.6	Analyze the realtime recent applications of DC Machines and Transformers.
C211-CS6456/ OBJECT ORIENTED PROGRAMMING	
C211.1	Gain the basic knowledge on object oriented concepts
C211.2	Ability to implement features of object oriented programming to solve real world problems.
C211.3	Analyze the suitable test to validate the programs with exception handling mechanism.
C211.4	Analyze and apply to evaluate the concept of overloading.
C211.5	Develop the concept of java in creating classes, objects using arrays and control statements.
C211.6	Create packages, handle exceptions and develop multi-threaded programs.
C211- EE6402/TRANSMISSION AND DISTRIBUTION	
C212.1	Identify the basic elements of the electric power system, generation, transmission, distribution and describe the role played by each element.
C212.2	Compute the losses, efficiency and parameters of the Transmission line.
C212.3	Analyze the Performance of Transmission Lines.
C212.4	Solve the voltage distribution in insulator strings, cables and methods to improve the same.
C212.5	Design overhead lines both Mechanical and electrical aspects using Sag calculation..
C212.6	Ability to understand and analyze power system operation, stability, control and protection.
C213- EE6403DISCRETE TIME SYSTEMS AND SIGNAL PROCESSING	
C213.1	Gain the basic knowledge on object oriented concepts
C213.2	Ability to implement features of object oriented programming to solve real world problems.
C213.3	Analyze the suitable test to validate the programs with exception handling mechanism.
C213.4	Analyze and apply to evaluate the concept of overloading

C213.5	Develop the concept of java in creating classes, objects using arrays and control statements.
C213.6	Create packages, handle exceptions and develop multi-threaded programs
C214- EE6404/MEASUREMENTS AND INSTRUMENTATION	
C214.1	To introduce the basic functional elements of instrumentation.
C214.2	To introduce the fundamentals of electrical and electronic instruments.
C214.3	To construct a suitable bridges for measurement of particular parameters.
C214.4	To introduce various storage and display devices.
C214.5	To introduce various transducers and the data acquisition systems.
C215-CS6461/OBJECT ORIENTED PROGRAMMING LABORATORY	
C215.1	Design C++ programs using functions, classes with objects, member functions and constructors.
C215.2	Develop operator and function overloading and run time polymorphism using C++.
C215.3	Develop file handling techniques in C++ for sequential and random access also use Java code for strings.
C215.4	Construct packages and interfaces in Java.
C215.5	Create threads in Java and handle predefined and user defined exceptions.
C216- EE6411/ELECTRICAL MACHINES LABORATORY – I	
C216.1	Analyze the characteristics of DC shunt generator DC compound generator and calculate critical resistance and critical speed
C216.2	Examine load characteristics of DC shunt, series and compound motor and identify its maximum efficiency operating point
C216.3	Predict the efficiency of DC shunt machine in different methods
C216.4	Explain the load characteristics of single phase and three phase transformer , separate the different losses and to find the efficiency
C216.5	Predetermine the equivalent circuit parameters of single phase transformer in two different methods and compare the results
C216.6	Explore the DC starters.

C301- EE6501/POWER SYSTEM ANALYSIS	
C301.1	Discuss Various components of Power System, their characteristics and Modelling.
C301.2	Draw equivalent single line reactance and impedance diagrams and per unit representation of a power system
C301.3	Explain significance of load flow problem and apply numerical techniques to obtain Load flow solution..
C301.4	Interpret the effect of symmetrical fault conditions and select suitable rating for various protective devices in a. power system
C301.5	Apply symmetrical components and solve unsymmetrical faults. in a power system.
C301.6	Discuss stability classifications and calculate stability limits using equal area criterion and numerical methods.
C302- EE6502/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.
C302.2	Classify the instructions with the help of Addressing modes of 8085 with necessary programs.
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.
C302.4	Analyze the architecture of various Interfacing Devices like 8255 PPI, 8259 PIC, 8251 USART, 8279, 8253
C302.5	Analyze the architecture of various Interfacing Devices like ADC and DAC and Programming of all the Interfacing IC's.
C302.6	Apply the knowledge of programming concepts of 8051 Microcontroller for various applications like keyboard display interface, servo motor etc.,
C303- ME6701/POWER PLANT ENGINEERING	
C303.1	Draw the layout of modern coal power plant and list the various components used in thermal power plant.
C303.2	Identify the components of diesel and gas turbine power plants and construct the integrated gasified based combined cycle systems.
C303.3	Describe the layout of subsystems of various nuclear power plants and express

	safety measures for nuclear power plants.
C303.4	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.
C303.5	Calculate the per unit cost of electrical energy based on Power tariff, load factor, demand factor, diversity factor and plant safety factor.
C304- EE6503/POWER ELECTRONICS	
C304.1	Explain the significance of switching devices and its application to power Converters and demonstrate the triggering circuit and snubber circuits.
C304.2	Compare the operation of two, three Pulse Converters and draw output Waveforms with and without source and load inductance.
C304.3	Classify the operation of Choppers and outline the application of SMPS.
C304.4	Analyze the operation of single phase and three phase Inverters with and without.
C304.5	Illustrate the operation of cyclo-converter and its application.
C304.6	Illustrate the operation of AC voltage controller and its application.
C305-EE6504/ELECTRICAL MACHINES-II	
C305.1	Draw the constructional details and explain the performance of salient and non – salient type synchronous generators.
C305.2	Draw and explain the Principle of operation and performance of synchronous motor.
C305.3	Draw and describe the construction, principle of operation and performance of induction machines.
C305.4	Describe the starting and speed control of three-phase induction motors.
C305.5	Explain the construction, principle of operation and performance of single phase induction motors and special machines.
C305.6	Ability to model and analyze electrical apparatus and their application to power system.
C306- IC6501/CONTROL SYSTEMS	
C306.1	Develop electrical models/ mechanical models to design a physical system for a specific operation.
C306.2	Understand, define different time domain specification parameters and thus can apply that knowledge to conclude dynamic performance of a system.

C306.3	Use the basic knowledge in obtaining the open loop and closed-loop frequency responses of systems
C306.4	Able to explain the stability analysis and types of compensators.
C306.5	To describe the state variable representation of physical systems and the effect of state feedback
C306.6	Able to explain and use all the control techniques and to determine stability of all systems
C307- EE6511/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
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
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
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
C307.5	Measure the Power and Energy experimentally
C307.6	Analyze the Signal Conditioning units (a) Instrumentation Amplifier (b) ADC and DACs and Use the MATLAB for Process Simulation
C308- GE6674/COMMUNICATION SKILLS - LABORATORY BASED	
C308.1	Apply appropriate communication skills across settings, purposes and audiences.
C308.2	Demonstrate knowledge of communication theory and applications.
C308.3	Practice critical thinking to develop innovative and well-founded perspectives related to the students emphasis. Build and maintain healthy and effective relationships.
C308.4	Use technology to communicate effectively in various settings and contexts.
C308.5	Demonstrate appropriate and professional ethical behavior.

C309-EE6512/ELECTRICAL MACHINES LABORATORY - II	
C309.1	Determine the voltage regulation of three phase alternator in different methods and compare the results.
C309.2	Determine the voltage regulation of salient pole synchronous machine and find negative & zero sequence components.
C309.3	Explain the V and inverted V characteristics of three phase synchronous machine at different load condition.
C309.4	Determine and pre determine performance characteristics of three phase induction Motor.
C309.5	Determine and pre determine performance characteristics of single phase induction Motor.
C309.6	Ability to model and analyze electrical apparatus and their application to power system.
YEAR/SEMESTER : III / VI	
C310- EC6651/COMMUNICATION ENGINEERING	
C310.1	Can be able to design different types of AM systems
C310.2	Analyze various types of digital communication systems.
C310.3	Understand different types of line codes & error control codes in digital communication .
C310.4	Able to understand various source coding techniques used in compression technique.
C310.5	Analyze different multiple access technique that is used in wire and wireless communication
C310.6	Ability to understand and analyze various communication medias like fiber optic and satellite communications.
C311-EE6601/SOLID STATE DRIVES	
C311.1	Classify the various types of drives and load torque characteristics and Apply the multi quadrant dynamics in hoist load system.
C311.2	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.
C311.3	Explain the operation and characteristics of various methods of solid state speed

	control of induction motor.
C311.4	Describe the operation of various modes of V/f control of synchronous motor drives and different types of permanent magnet synchronous motor drives.
C311.5	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.
C311.6	Ability to understand and apply basic science, circuit theory, and Electro-magnetic field theory control theory and apply them to electrical engineering problems.
C312-EE6602/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.
C312.2	Classify the types of I/O device ports and buses and different interfaces for data transfer.
C312.3	Model the Embedded Product Development Life Cycle (EDLC) by using different techniques like state machine model, sequential program model and concurrent model
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
C312.5	Apply the knowledge of programming concepts of Embedded Systems for various applications like Washing Machine automotive and Smart Card System applications
C313-EE6603/POWER SYSTEM OPERATION AND CONTROL	
C313.1	Explain the concept of transients and Compute the solution of transient current equation for RL and RLC system.
C313.2	Illustrate the importance of switching transients; Explain the concept of resistance switching, load switching and capacitance switching.
C313.3	Explain the concept of lightning mechanism, Describe the interaction between lightning and power system
C313.4	Apply the concept of reflection and refraction, Draw the Bewley Lattice diagram for different systems.

C313.5	Analyze the concept of short line (or) Kilometric fault and justify the EMTP for transient computation.
C313.6	Ability to understand and analyze power system operation, stability, control and protection.
C314-EE6604/DESIGN OF ELECTRICAL MACHINES	
C314.1	Ability to discuss on Electrical Engineering Materials ,Choice of Specific Electrical and Magnetic loadings and concept of Thermal considerations.
C314.2	Able to illustrate and derive the Output Equations and find the Main dimensions and to solve the problems regarding Real & Apparent flux densities.
C314.3	Capable to justify the selection of number of poles on designing the armature Design of Armature, commutator and brushes .
C314.4	Able to derive and solve the Output Equations and to determine the kVA output for single and three phase
C314.5	Capable to illustrate the design details for designing the transformer and design of transformer tanks.
C314.6	To describe and derive the Output equation of Induction motor and to evaluate – Main dimensions ,Length of air gap, Design of rotor bars & slots.
C315-EE6002/POWER SYSTEM TRANSIENTS	
C315.1	Explain the concept of transients and Compute the solution of transient current equation for RL and RLC system.
C315.2	Illustrate the importance of switching transients, Explain the concept of resistance switching, load switching and capacitance switching.
C315.3	Explain the concept of lightning mechanism, Describe the interaction between lightning and power system
C315.4	Apply the concept of reflection and refraction, Draw the Bewley Lattice diagram for different systems.
C315.5	Analyze the concept of short line (or) Kilometric fault and justify the EMTP for transient computation.
C316- EE6611/POWER ELECTRONICS AND DRIVES LABORATORY	
C316.1	Draw the VI characteristics of SCR and generate the Gate Pulse using R, RC and UJT

C316.2	Plot the characteristics of MOSFET and IGBT
C316.3	Simulate a single phase AC to DC half and fully controlled converter
C316.4	Draw the output response of step up and step down MOSFET based chopper and Simulate a single phase IGBT based PWM inverter.
C316.5	Plot the output response of AC voltage controller and Simulate the Power Electronic Circuits
C316.6	Ability to understand and analyze, linear and digital electronic circuits.
C317- EE6612/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	
C317.1	Demonstrate and apply working of programs in microprocessor 8085 and 8051 microcontroller.
C317.2	Explain various assembly language programs
C317.3	Develop the basic knowledge of microprocessor and microcontroller interfacing and their application
C317.4	Design the system using capabilities of stack program counter and status register and show how these are used to execute a machine code program
C317.5	Justify the programming proficiency using various addressing modes and data transfer instruction of target microprocessor
C317.6	Develop mini-projects using 8085 processor
C318- EE6613/PRESENTATION SKILLS AND TECHNICAL SEMINAR	
C318.1	Present seminar in the field of electrical and electronics engineering subjects studied.
C318.2	Solve objective type questions in the field of electrical and electronics engineering.
C318.3	Communicate effectively, the subjects learned in the form of seminar presentation.
C318.4	Communicate effectively, the modern trends in the field of electrical and electronics engineering.
C318.5	Answer effectively during technical interviews.
YEAR/SEMESTER : IV / VII	
C401-EE6701/HIGH VOLTAGE ENGINEERING	
C401.1	Identify the causes of over voltage and its effects in power system.
C401.2	Classify the breakdown Mechanisms in Solid, Liquid, gases and Composite dielectrics
C401.3	Design different type of Generating circuit for high voltage D.C and high

	voltage A.C
C401.4	Measure A.C and D.C high voltage and current using appropriate method
C401.5	Test the transformer ,insulator , circuit breakers, surge diverters and cables also discuss the insulation coordination
C401.6	Ability to understand and analyze power system operation, stability, control and protection.
C402-EE6702/PROTECTION AND SWITCH GEAR	
C402.1	Summarize the causes and effects of faults in power system and explain the necessity of protection in power system.
C402.2	Describe the operation of various relays and summarize the various protective schemes
C402.3	List out the various faults that can occur on alternator, transformer, bus bar and transmission line and select the suitable protection schemes.
C402.4	Synthesize the static relays using comparators and explain numerical relays.
C402.5	Derive the expression for RRRV, critical resistance value
C402.6	Express the various types of circuit breakers and its application.
C403-EE6703/SPECIAL ELECTRICAL MACHINES	
C403.1	Explain the construction, operating principle and performance characteristics of synchronous reluctance motors and its applications.
C403.2	Discuss the constructional features, modes of excitation for different configuration and derive the torque equations, closed control operation and its applications.
C403.3	Describe the constructional features, principle of operation, performance analysis and applications of SRMs and develop control circuits for power converters.
C403.4	Describe the constructional features, principle of operation, performance analysis and applications of PMSM motor and discuss the power converter and controller circuits.
C403.5	Explain the principle and operational characteristics of ideal PMSM.
C403.6	Explain the principle and operational characteristics, VA requirements and power converter for PMSM.
C404-MG6851/PRINCIPLES OF MANAGEMENT	
C404.1	Describe the basic of management and its types, skills, management roles, types of business organizations and current trends in business.

C404.2	Explain the nature and purpose of planning , types, objective of planning and decision process
C404.3	Compare the different organization structures, Authorities and responsibilities, Human resource management and training and development.
C404.4	Estimate the individual and group behaviour, motivation, job satisfaction, types and theories of leadership, communication and IT.
C404.5	Apply the knowledge using the various System and process of controlling, budgetary and non-budgetary control techniques, use of computers and IT in Management control, reporting
C404.6	Assess managerial practices and choices relative to ethical principles and standards. Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances
C405-EE6004/FLEXIBLE AC TRANSMISSION SYSTEMS	
C405.1	Understand the importance of controllable parameters and benefits of FACTS Controllers.
C405.2	Know the significance of shunt, series compensation and role of FACTS devices on system control.
C405.3	Analyze the functional operation and control of GCSC, TSSC and TCSC.
C405.4	Describe the principles, operation and control of UPFC and IPFC.
C405.5	Dispatch the load economically among thermal plants.
C405.6	Explain power system security and voltage stability.
C406-EE6008/MICROCONTROLLER BASED SYSTEM DESIGN	
C406.1	Describe the basic architecture of PIC16cxx and apply the instruction set for simple operations.
C406.2	Explain about the PIC micro controllers interrupts and write the interrupt programs
C406.3	Apply the program to interface I/O devices with controller like LCD, Keyboard, and Sensors etc.,
C406.4	Develop simple applications using ARM assembly language programs
C406.5	Analyze ARM Organization and ARM Coprocessor interface

C407- EE6711/POWER SYSTEM SIMULATION LABORATORY	
C407.1	Determine the bus impedance and admittance matrices using C and MATLAB
C407.2	Apply numerical methods for solving load flow problems and verify using C and MATLAB
C407.3	Analyze various faults occurring in power system and simulate the faults using PSCAD.
C407.4	Analyze small signal stability of Single Machine Infinite Bus (SMIB) system and draw the swing curve using AUPOWER Lab and MATLAB.
C407.5	Generate the coding for economic dispatch problems and load frequency dynamics problems using MATLAB.
C408- EE6712/COMPREHENSION	
C408.1	Describe the basic concepts of electrical and electronics subjects
C408.2	Solve objective type questions in the field of electrical and electronics engineering
C408.3	Review, prepare and present technological developments
C408.4	Analyze the modern trends in the field of electrical and electronics engineering.
C408.5	Answer effectively during technical interviews.
C408.6	Answer the question correctly in competitive exams
YEAR/SEMESTER : IV / VIII	
C409- EE6801/ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION	
C409.1	Evaluate tractive effort for the propulsion of train, name the traction motors, list the traction motor control, track equipment and collection gear.
C409.2	Categorize different light sources and design various illumination systems for the indoor lighting schemes, factory lighting, halls, outdoor lighting schemes, flood lighting, street lighting.
C409.3	Compare the different methods of electric heating and types of electric welding.
C409.4	Estimate average solar radiation and illustrate the physical principles of the conversion of solar radiation into heat.
C409.5	Analyze aerodynamic forces acting on the blade and draw basic components of a WECS.
C410- GE6075/PROFESSIONAL ETHICS IN ENGINEERING	

C410.1	Understand the basic perception of profession, professional ethics, various moral issues & uses of ethical theories.
C410.2	Explain various social issues, industrial standards, code of ethics and role of professional ethics in engineering field.
C410.3	Describe responsibilities of an engineer for safety and risk benefit analysis.
C410.4	Aware of professional rights and responsibilities of an engineer.
C410.5	Acquire knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives.
C410.6	Apply ethics in society and discuss the ethical issues related to engineering and realize the responsibilities, rights in the society.
C411-EE/ POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS	
C411.1	Examine the various types of renewable energy sources
C411.2	Acquiring the knowledge about the performance of IG, PMSG, SCIG and DFIG
C411.3	Ability to fabricate different power converters namely AC to DC , DC to DC and AC to AC converters for renewable energy sources
C411.4	Analyze various operating modes of wind electrical generators and solar energy system
C411.5	Strengthen the knowledge about maximum power point tracking algorithms
C411.6	Gain the knowledge about various grid integrated systems
C412- EE6811 / PROJECT WORK	
C412.1	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 .
C412.2	Apply appropriate techniques and modern engineering hardware and software tools in electrical and electronics engineering and allied applications.
C412.3	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.
C412.4	Function effectively as an individual and as a member or leader in diverse teams in multidisciplinary settings and make effective presentation, and communicate effectively.

C412.5	Demonstrate the understanding of the engineering and management principles in multidisciplinary environments to engage in lifelong learning in the broadest context of technological change.
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C201-MA6351/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-EE6301/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-EE6302/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-GE6351/ ENVIRONMENTAL SCIENCE AND ENGINEERING												
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

C204.6	2	2	2	2	2	2	-	2	3	3	2	2
C205-EC6202/ELECTRONIC 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-EE6303/ LINEAR INTEGRATED CIRCUITS AND APPLICATIONS												
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- EC6361/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- EE6311/ LINEAR AND DIGITAL INTEGRATED 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
C209-MA6459/ 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-EE6401/ ELECTRICAL MACHINES - I												
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-CS6456/ OBJECT ORIENTED PROGRAMMING												
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- EE6402/TRANSMISSION AND DISTRIBUTION												
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
C213- EE6403DISCRETE TIME SYSTEMS AND SIGNAL PROCESSING												
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- EE6404/MEASUREMENTS AND INSTRUMENTATION												
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-CS6461/OBJECT ORIENTED PROGRAMMING LABORATORY												
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
C216- EE6411/ELECTRICAL MACHINES LABORATORY - I												
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
C301- EE6501/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- EE6502/MICROPROCESSORS AND MICROCONTROLLERS												

C306.4	3	3	2	2	-	-	-	-	-	-	-	2
C306.5	3	3	3	2	-	-	-	-	-	-	-	2
C306.6	3	3	3	2	-	-	-	-	-	-	-	2
C307- EE6511/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- GE6674/COMMUNICATION SKILLS - 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
C309-EE6512/ELECTRICAL MACHINES LABORATORY - II												
C309.1	3	3	3	2	2	-	-	-	-	-	3	-
C309.2	3	2	3	2	2	-	-	-	-	-	2	-
C309.3	3	2	2	2	2	-	-	-	-	-	2	-
C309.4	3	3	2	2	3	-	-	-	-	-	2	-
C309.5	3	3	3	2	2	-	-	-	-	-	2	-
C309.6	2	2	3	2	3	-	-	-	-	-	2	-
C310- EC6651/COMMUNICATION ENGINEERING												
C310.1	2	-	-	-	-	2	2	-	2	3	-	2
C310.2	2	-	-	-	-	2	2	-	2	3	-	2
C310.3	3	-	-	-	-	3	2	-	2	3	-	2
C310.4	3	-	-	-	-	3	2	-	2	3	-	2
C310.5	2	-	-	-	-	2	3	-	2	3	-	2
C310.6	2	-	-	-	-	2	3	-	2	3	-	2
C311-EE6601/SOLID STATE DRIVES												

C311.1	3	2	2	2	-	-	-	-	-	2	2	2
C311.2	3	2	2	2	-	-	-	-	-	2	2	2
C311.3	3	2	2	2	-	-	-	-	-	2	2	2
C311.4	3	2	2	2	-	-	-	-	-	2	2	2
C311.5	3	2	2	2	-	-	-	-	-	2	2	2
C311.6	3	2	2	2	-	-	-	-	-	2	2	2
C312-EE6602/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
C313-EE6603/POWER SYSTEM OPERATION AND CONTROL												
C313.1	3	3	3	2	2	-	-	-	-	-	3	-
C313.2	3	2	3	2	2	-	-	-	-	-	2	-
C313.3	3	2	2	2	2	-	-	-	-	-	2	-
C313.4	3	3	2	2	3	-	-	-	-	-	2	-
C313.5	3	3	3	2	2	-	-	-	-	-	2	-
C313.6	2	2	3	2	3	-	-	-	-	-	2	-
C314-EE6604/DESIGN OF ELECTRICAL MACHINES												
C314.1	3	3	3	2	2	2	-	2	2	2	3	-
C314.2	3	2	3	2	2	-	-	-	-	3	2	2
C314.3	3	2	2	2	2	-	-	-	-	2	2	-
C314.4	3	3	2	2	3	-	2	-	-	2	2	-
C314.5	3	3	3	2	2	-	-	-	-	3	2	-
C314.6	2	2	3	2	3	-	-	2	-	2	2	-
C315-EE6002/POWER SYSTEM TRANSIENTS												
C315.1	3	2	2	2	-	-	-	-	-	2	2	2
C315.2	3	2	2	2	-	-	-	-	-	2	2	2
C315.3	3	2	2	2	-	-	-	-	-	2	2	2

C315.4	3	2	2	2	-	-	-	-	-	2	2	2
C315.5	3	2	2	2	-	-	-	-	-	2	2	2
C315.6	3	2	2	2	-	-	-	-	-	2	2	2
C316- EE6611/POWER ELECTRONICS AND DRIVES LABORATORY												
C316.1	3	3	3	2	-	-	-	2	-	-	3	2
C316.2	3	2	3	2	-	-	-	2	-	-	2	2
C316.3	3	2	2	2	-	-	-	2	-	-	2	2
C316.4	3	3	2	2	-	-	-	2	-	-	2	2
C316.5	3	3	3	2	-	-	-	2	-	-	2	2
C316.6	3	3	3	2	-	-	-	2	-	-	2	2
C317- EE6612/MICROPROCESSORS AND MICROCONTROLLERS 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- EE6613/PRESENTATION SKILLS AND TECHNICAL SEMINAR												
C318.1	3	2	3	-	-	-	-	-	3	2	2	2
C318.2	3	2	2	-	-	-	-	-	3	2	2	3
C318.3	3	3	2	-	-	-	-	-	3	2	2	3
C318.4	3	2	2	-	-	-	-	-	3	2	2	2
C318.5	3	3	2	-	-	-	-	-	3	2	2	3
C401-EE6701/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-EE6702/PROTECTION AND SWITCH GEAR												

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-EE6703/SPECIAL ELECTRICAL MACHINES												
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-MG6851/PRINCIPLES OF MANAGEMENT												
C404.1	2	-	2	-	-	3	-	3	-	2	-	2
C404.2	2	-	2	-	-	3	-	3	-	2	-	2
C404.3	2	-	2	-	-	3	-	3	-	2	-	2
C404.4	2	-	2	-	-	3	-	3	-	2	-	2
C404.5	2	-	2	-	-	3	-	3	-	2	-	2
C404.6	2	-	2	-	-	3	-	3	-	2	-	2
C405-EE6004/FLEXIBLE AC TRANSMISSION SYSTEMS												
C405.1	3	3	3	2	3	3	2	2	2	2	2	2
C405.2	3	2	3	2	3	2	2		2		2	2
C405.3	2	3	2	2	3	2	2	2	2	2	-	-
C405.4	2	2	2	2	2	2	-	-	-	-	-	2
C405.5	3	3	2	2	2	2	2	-	2	-	2	2
C405.6	2	2	2	2	2	2	2	2	2	2	-	2
C406-EE6008/MICROCONTROLLER BASED SYSTEM DESIGN												
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	-
C406.6	2	2	3	2	3	-	-	2	-	2	2	-
C407- EE6711/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
C408- EE6712/COMPREHENSION												
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- EE6801/ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION												
C409.1	3	3	2	-	2	2	2	2	-	2	2	2
C409.2	3	2	3	-	2	2	2	2	-	2	2	2
C409.3	2	2	2	-	2	2	2	2	-	2	2	2
C409.4	2	2	2	2	2	2	2	2	-	2	2	2
C409.5	2	2	2	2	2	2	2	2	-	2	2	2
C409.6	2	2	2	2	2	2	2	3	-	2	2	2
C410- GE6075/PROFESSIONAL ETHICS IN ENGINEERING												
C410.1	-	-	2	2	-	3	3	3	3	3	2	2
C410.2	-	-	2	2	-	2	3	3	3	3	2	2
C410.3	-	-	3	2	-	3	3	3	3	2	2	2
C410.4	-	-	2	2	-	2	3	3	3	-	2	2
C410.5	-	-	3	2	-	3	3	3	3	-	2	2
C410.6	-	-	2	2	-	2	3	3	3	2	2	2

C411-EE/ POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS												
C411.1	2	2	-	-	-	2	2	-	-	-	-	2
C411.2	2	3	-	-	-	2	2	2	-	-	-	2
C411.3	2	3	-	-	-	2	2	2	-	-	2	2
C411.4	2	3	2	-	-	2	2	2	-	-	2	2
C411.5	2	3	2	-	-	2	2	3	-	-	2	2
C411.6	2	3	-	-	-	2	2	2	-	-	2	2
C412- EE6811 / PROJECT WORK												
C412.1	3	3	3	2	3	3	2	-	2	2	2	2
C412.2	3	2	3	2	3	2	2	-	2	-	2	2
C412.3	2	3	2	2	3	2	2	2	2	2	-	2
C412.4	2	2	2	2	2	2	-	-	-	-	-	2
C412.5	3	3	2	2	2	2	2	-	2	-	-	2

Regulation – 2013 - PG
M.E. POWER ELECTRONICS AND DRIVES
YEAR/SEMESTER: I/I

S.No	Course Outcome
C101-MA7163/APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERS	
C101.1	Ability to apply the concepts of Linear programming in Electrical Engineering problems.
C101.2	Ability to achieve an understanding of the basic concepts of one dimensional random variables and apply in electrical engineering problems.
C101.3	Ability to familiarize the students in calculus of variations and solve problems using Fourier transforms associated with engineering applications.
C101.4	Ability to understand the matrix theory in electrical engineering problems.
C101.5	Ability to apply the concept of Fourier series in electrical engineering problems.
C101.6	Ability to analyze the power spectrum in electrical engineering problems.
C102-PX7101/ANALYSIS OF ELECTRICAL MACHINES	
C102.1	Ability to have knowledge about the fundamentals of magnetic circuits, energy, force and torque of multi-excited systems.
C102.2	Ability to analyze the steady state and dynamic state operation of DC machine through mathematical modeling and simulation in digital computer.
C102.3	Ability to understand the theory of transformation of three phase variables to two phase variables.
C102.4	Ability to analyze the steady state and dynamic state operation of three-phase induction machines using transformation theory based mathematical modeling.
C102.5	Ability to analyze the steady state and dynamic state operation of three-phase synchronous machines using transformation theory based mathematical modeling
C102.6	Ability to apply digital computer simulation for PMSM and D.C shunt motor.

S.No	Course Outcome
C103-PX7102/ANALYSIS OF POWER CONVERTERS	
C103.1	Able to understand the electrical circuit concepts behind the different working modes of power converters so as to enable deep understanding of their operation.
C103.2	Able to acquire skills to derive the criteria for the design of power converters starting from basic fundamentals.
C103.3	Able to analyze and comprehend the various operating modes of different configurations of power converters.
C103.4	Able to design different power converters namely AC to DC, DC to DC and AC to AC converters.
C103.5	Ability to analyze the voltage controllers with R and R-L loads.
C103.6	Able to understand the difference between single phase and three phase cyclo converters
C104-PX7103/ANALYSIS AND DESIGN OF INVERTERS	
C104.1	Able to understand the concepts behind the different working modes of inverters so as to enable deep understanding of their operation.
C104.2	Able to acquire skills to derive the criteria for the design of power converters for UPS, Drives etc.,
C104.3	Able to analyze and comprehend the various operating modes of different configurations of power converters.
C104.4	Able to design different single phase and three phase inverters.
C104.5	Able to understand series and parallel resonant inverters
C104.6	Able to analyze PWM techniques for MLI

S.No	Course Outcome
C105-PX7104/ADVANCED POWER SEMICONDUCTOR DEVICES	
C105.1	Able to improve power semiconductor device structures for adjustable speed motor control applications.
C105.2	Able to understand the static and dynamic characteristics of current controlled power semiconductor devices
C105.3	Able to understand the static and dynamic characteristics of voltage controlled power semiconductor devices
C105.4	Enable the students for the selection of devices for different power electronics applications
C105.5	Able to understand the control and firing circuit for different devices.
C105.6	Able to understand the thermal protection in power semiconductor devices.
C106-ET7102/MICROCONTROLLER BASED SYSTEM DESIGN	
C106.1	Able to expose the students to the fundamentals of microcontroller based system design.
C106.2	Able to teach I/O and RTOS role on microcontroller.
C106.3	Able to impart knowledge on PIC Microcontroller based system design.
C106.4	Able to introduce Microchip PIC 8 bit peripheral system Design
C106.5	Able to acquire knowledge in flash and EPROM memories.
C106.6	Able to get case study experiences for microcontroller based applications.

YEAR/SEMESTER : I/II

S.No	Course Outcome
C107-PX7201/SOLID STATE DC DRIVES	
C107.1	Able to understand steady state operation and transient dynamics of a motor load system
C107.2	Able to study and analyze the operation of the converter fed DC drive, both qualitatively and quantitatively.
C107.3	Able to analyze and design the current and speed controllers for a closed loop solid state DC motor drives.
C107.4	Able to understand the implementation of control algorithms using microcontrollers and phase locked loop.
C107.5	Able to study and analyze the operation of chopper fed DC drive, both qualitatively and quantitatively.
C107.6	Able to analyze the digital control of DC drive
C108-PX7202/SOLID STATE AC DRIVES	
C108.1	Able to understand various operating regions of the induction motor drives.
C108.2	Able to study and analyze the operation of VSI & CSI fed induction motor control.
C108.3	Able to understand the speed control of induction motor drive from the rotor side.
C108.4	Able to understand the field oriented control of induction machine.
C108.5	Able to understand the control of synchronous motor drives.
C108.6	Able to apply DTC control strategy in three phase induction motor.

S.No	Course Outcome
C109-PX7203/SPECIAL ELECTRICAL MACHINES	
C109.1	Able to review the fundamental concepts of permanent magnets and the operation of permanent magnet brushless DC motors.
C109.2	Able to introduce the concepts of permanent magnet brushless synchronous motors and synchronous reluctance motors.
C109.3	Able to develop the control methods and operating principles of switched reluctance motors.
C109.4	Able to introduce the concepts of stepper motors and its applications.
C109.5	Able to understand the basic concepts of other special machines.
C109.6	Able to understand the torque speed characteristics of synchronous reluctance motor.
C110-PX7204/POWER QUALITY	
C110.1	Able to understand the various power quality issues.
C110.2	Able to understand the concept of power and power factor in single phase and three phase systems supplying non linear loads
C110.3	Able to understand the conventional compensation techniques used for power factor correction and load voltage regulation.
C110.4	Able to understand the active compensation techniques used for power factor correction.
C110.5	Able to understand the active compensation techniques used for load voltage regulation.
C110.6	Able to realize and control of DSTATCOM in voltage control.

S.No	Course Outcome
C111-CL7204/SOFT COMPUTING TECHNIQUES	
C111.1	Able to expose the concepts of feed forward neural networks.
C111.2	Able to provide adequate knowledge about feedback neural networks.
C111.3	Able to teach about the concept of fuzziness involved in various systems.
C111.4	Able to expose the ideas about genetic algorithm.
C111.5	Able to provide adequate knowledge about of FLC and NN toolbox.
C111.6	Able to implement fuzzy logic controller in stability analysis.
C112-PS7202/FLEXIBLE AC TRANSMISSION SYSTEMS	
C112.1	To emphasis the need for FACTS controllers.
C112.2	To learn the characteristics, applications and modeling of series and shunt FACTS controllers.
C112.3	To analyze the interaction of different FACTS controller and perform control Coordination
C112.4	Able to study the transient stability of FACTS controller.
C112.5	Able to modeling of UPFC and IPFC for load flow studies.
C112.6	Able to find the applications of TCSC and GCSC.
C113-PX7211/POWER ELECTRONICS AND DRIVES LAB	
C113.1	Able to do speed control of Converter and chopper fed DC motor.
C113.2	Able to analyze V/f control of three-phase induction motor.

C113.3	Able to understand Micro controller based speed control of Stepper motor.
C113.4	Able to do speed control of BLDC and SRM motor.
C113.5	Able to design of switched mode power supplies and UPS
C113.6	Able to simulate the Four quadrant operation of three-phase induction motor and voltage regulation of synchronous generator.

YEAR/SEMESTER: II/III

C201-PX7301/POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS	
C201.1	Able to Provide knowledge about the stand alone and grid connected renewable energy systems.
C201.2	Able to equip with required skills to derive the criteria for the design of power converters for renewable energy applications.
C201.3	Able to analyze and comprehend the various operating modes of wind electrical generators and solar energy systems.
C201.4	Able to design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems.
C201.5	Able to develop maximum power point tracking algorithms.
C201.6	Able to analyze the grid integrated PMSG and SCIG based WECS.

S.No	Course Outcome
C202-PS7004/SOLAR AND ENERGY STORAGE SYSTEMS	
C202.1	Able to know the characteristics of sunlight and their properties.
C202.2	Able to Study about solar modules and PV system design and their applications.
C202.3	Able to Deal with grid connected PV systems.
C202.4	Able to discuss about different energy storage systems.

C202.5	Able to find out the applications in water pumping, battery chargers and other solar cars etc.,
C202.6	Able to know the international PV programs.
C203-PS7007/WIND ENERGY CONVERSION SYSTEMS	
C203.1	Able to learn the design and control principles of Wind turbine.
C203.2	Able to understand the concepts of fixed speed and variable speed, wind energy conversion systems.
C203.3	Able to analyze the grid integration issues.
C203.4	Able to understand the concept of variable speed systems.
C203.5	Able to know grid connected systems.
C203.6	Able to analyze the steady state and dynamic performance of power system.

C101-MA7163/APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERS												
C101.1	3	2	2	-	-	-	-	-	-	-	-	2
C101.2	2	2	2	-	-	2	-	-	2	-	-	2
C101.3	2	2	2	-	-	2	-	-	2	-	-	2
C101.4	3	3	3	-	-	2	-	-	-	-	-	3
C101.5	2	3	3	-	-	-	-	-	2	-	-	3
C101.6	2	3	3	2	2	-	-	2	2	-	-	2
C102-PX7101/ANALYSIS OF ELECTRICAL MACHINES												
C102.1	3	3	3	-	2	2	-	2	2	-	-	2
C102.2	3	2	3	-	2	-	-	-	-	-	-	3
C102.3	3	2	2	-	2	-	-	-	-	2	-	2
C102.4	3	3	2	-	3	-	2	-	-	-	-	3
C102.5	3	3	3	2	2	-	-	-	-	-	2	2
C102.6	2	2	3	-	3	-	-	2	-	-	-	2

C103-PX7102/ANALYSIS OF POWER CONVERTERS												
C103.1	3	2	2	2	-	2	-	-	-	2	-	2
C103.2	3	3	2	2	-	2	-	-	-	2	-	2
C103.3	3	2	3	2	-	2	-	-	-	2	-	2
C103.4	3	2	2	2	-	2	-	-	-	2	-	2
C103.5	3	2	3	2	-	2	-	-	-	2	-	2
C103.6	3	2	2	2	-	2	-	-	-	2	-	2
C104-PX7103/ANALYSIS AND DESIGN OF INVERTERS												
C104.1	3	3	2	2	2	-	-	-	-	-	-	3
C104.2	3	3	3	3	3	-	-	-	-	-	-	3
C104.3	3	2	3	2	3	-	-	-	-	-	-	2
C104.4	3	3	2	2	2	-	-	-	-	-	-	2
C104.5	3	3	2	2	3	-	-	-	-	-	-	3
C104.6	3	2	2	2	3	-	-	-	-	-	-	3
C105- PX7104/ADVANCED POWER SEMICONDUCTOR DEVICES												
C105.1	3	2	3	2	2	3	2	3	2	2	2	2
C105.2	3	2	3	2	3	3		3	2			2
C105.3	3	2	3	2	2	2	2	2	2	2	2	
C105.4	3	2	2	2	2	2	2	2		2	2	2
C105.5	3	2	2	2	2	2	2	2	2	2		2
C105.6	3	2	2	2	2	2	2		2	2	2	2
C106- ET7102/MICROCONTROLLER BASED SYSTEM DESIGN												
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
C107-PX7201/SOLID STATE DC DRIVES												
C107.1	2	3	3	2	2	-	2	-	-	-	3	-
C107.2	2	2	3	2	2	3	-	2	-	3	2	2

C107.3	2	2	2	2	2	-	-	-	2	-	2	-
C107.4	3	3	2	2	3	-	3	-	-	-	2	2
C107.5	3	3	3	2	2	-	-	-	3	-	2	-
C107.6	2	2	3	2	3	-	-	-	-	2	2	2
C108- PX7202/SOLID STATE AC DRIVES												
C108.1	3	3	2	2	-	-	-	-	-	-	-	2
C108.2	3	3	3	2	-	-	-	-	-	-	-	2
C108.3	3	3	3	2	-	-	-	-	-	-	-	2
C108.4	3	3	2	2	-	-	-	-	-	-	-	2
C108.5	3	3	3	2	-	-	-	-	-	-	-	2
C108.6	3	3	3	2	-	-	-	-	-	-	-	2
C109- PX7203/SPECIAL ELECTRICAL MACHINES												
C109.1	3	3	3	-	2	2	-	2	2	-	-	2
C109.2	3	2	3	-	2	-	-	-	-	-	-	3
C109.3	3	2	2	-	2	-	-	-	-	2	-	2
C109.4	3	3	2	-	3	-	2	-	-	-	-	3
C109.5	3	3	3	2	2	-	-	-	-	-	2	2
C109.6	2	2	3	-	3	-	-	2	-	-	-	2
C110-PX7204/POWER QUALITY												
C110.1	3	2	3	-	-	-	-	-	3	2	2	2
C110.2	3	2	2	-	-	-	-	-	3	2	2	3
C110.3	3	3	2	-	-	-	-	-	3	2	2	3
C110.4	3	2	2	-	-	-	-	-	3	2	2	2
C110.5	3	3	2	-	-	-	-	-	3	2	2	3
C110.6	2	2	3	-	3	-	-	2	-	-	-	2
C111- CL7204 SOFT COMPUTING TECHNIQUES												
C111.1	3	3	3	2	2	-	-	-	-	-	3	-
C111.2	3	2	3	2	2	-	-	-	-	-	2	-
C111.3	3	2	2	2	2	-	-	-	-	-	2	-
C111.4	3	3	2	2	3	-	-	-	-	-	2	-
C111.5	3	3	3	2	2	-	-	-	-	-	2	-

C111.6	2	2	3	2	3	-	-	-	-	-	2	-
C112- PS7202 FLEXIBLE AC TRANSMISSION SYSTEMS												
C112.1	2	-	-	-	-	2	2	-	2	3	-	2
C112.2	2	-	-	-	-	2	2	-	2	3	-	2
C112.3	3	-	-	-	-	3	2	-	2	3	-	2
C112.4	3	-	-	-	-	3	2	-	2	3	-	2
C112.5	2	-	-	-	-	2	3	-	2	3	-	2
C112.6	2	-	-	-	-	2	3	-	2	3	-	2
C113-PX7211 POWER ELECTRONICS AND DRIVES LAB												
C113.1	3	2	2	2	-	-	-	-	-	2	2	2
C113.2	3	2	2	2	-	-	-	-	-	2	2	2
C113.3	3	2	2	2	-	-	-	-	-	2	2	2
C113.4	3	2	2	2	-	-	-	-	-	2	2	2
C113.5	3	2	2	2	-	-	-	-	-	2	2	2
C113.6	3	2	2	2	-	-	-	-	-	2	2	2
C201- PX7301/POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS												
C201.1	3	2	2	2	-	-	-	-	-	2	2	2
C201.2	3	2	2	2	-	-	-	-	-	2	2	2
C201.3	3	2	2	2	-	-	-	-	-	2	2	2
C201.4	3	2	2	2	-	-	-	-	-	2	2	2
C201.5	3	2	2	2	-	-	-	-	-	2	2	2
C201.6	3	2	2	2	-	-	-	-	-	2	2	2
C202-PS7004/SOLAR AND ENERGY STORAGE SYSTEMS												
C202.1	3	3	3	2	2	-	-	-	-	-	3	-
C202.2	3	2	3	2	2	-	-	-	-	-	2	-
C202.3	3	2	2	2	2	-	-	-	-	-	2	-
C202.4	3	3	2	2	3	-	-	-	-	-	2	-
C202.5	3	3	3	2	2	-	-	-	-	-	2	-
C202.6	2	2	3	2	3	-	-	-	-	-	2	-
C203- PS7007/WIND ENERGY CONVERSION SYSTEMS												
C203.1	3	3	3	2	2	2	-	2	2	2	3	-

C203.2	3	2	3	2	2	-	-	-	-	3	2	2
C203.3	3	2	2	2	2	-	-	-	-	2	2	-
C203.4	3	3	2	2	3	-	2	-	-	2	2	-
C203.5	3	3	3	2	2	-	-	-	-	3	2	-
C203.6	2	2	3	2	3	-	-	2	-	2	2	-


PRINCIPAL

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

Regulation – 2017 - UG

YEAR/SEMESTER: II / 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.
C201.2	To develop Fourier Series for different types of functions.
C201.3	Find the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions
C201.4	To solve the Problems using Fourier Transforms and its inverse Transforms.
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.
C201.6	After successfully completing the course, the student will have a good understanding of the topics and their applications
C202-EE8351/DIGITAL LOGIC CIRCUITS	
C202.1	Develop a digital logic and apply it to solve real life problems.
C202.2	Analyze, design and implement combinational logic circuits.
C202.3	Classify different semiconductor memories.
C202.4	Analyze, design and implement sequential logic circuits.
C202.5	Analyze digital system design using PLD.
C202.6	Simulate and implement combinational and sequential circuits using VHDL systems.
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.
C203.2	Able to analyse, find the Electric field produced in free space, dielectrics and apply boundary conditions to find Capacitance, Energy density.
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 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.
C203.5	Capable to analyse the magnetic Circuits ,apply Faraday's law solve problems related to Displacement current
C203.6	To describe and derive the Maxwell's equations and apply it in solving Electromagnetic wave generating equations.
C204-EE8301/ ELECTRICAL MACHINES – I	
C204.1	Obtain the knowledge about the fundamental of Magnetic circuits and Magnetic Materials.
C204.2	Secure the idea about the various construction details and erection of Transformer
C204.3	Assured the working principles of electrical machines and classify the various generator and its mathematical models
C204.4	Establish the working principles of electrical machines and classify the various motor and its speed control techniques
C204.5	Expertise in testing methods to obtain the performance of DC Machines.
C204.6	Analyze the realtime recent applications of DC Machines and Transformers.
C205-EC8353/ELECTRON DEVICES AND CIRCUITS	
C205.1	Understand the construction and modeling of semiconductor diodes and rectifiers.
C205.2	Discuss the methods of transistors and its characteristics.
C205.3	Interpret the midband analysis of amplifier circuits with gain and impedance values.
C205.4	Analyze the frequency response of differential amplifier and tuned circuits.
C205.5	Examine the methods of feedback and generation of oscillator conditions.
C205.6	Understand characteristics of electron devices towards its applications.
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.
C206.2	Identify the components of diesel and gas turbine power plants and construct the integrated gasifier based combined cycle systems.
C206.3	Describe the layout of subsystems of various nuclear power plants and express safety measures for nuclear power plants.
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.
C206.5	Calculate the per unit cost of electrical energy based on Power tariff, load factor, demand factor, diversity factor and plant safety factor.
C206.6	Draw the layout of modern coal power plant and list the various components used in thermal power plant.

C207- EC8311/ELECTRONICS LABORATORY	
C207.1	Analyse various types of diodes and its v-i characteristics.
C207.2	Construct the various types of transistors and draw its v-i characteristics.
C207.3	Demonstrate the various types of amplifiers.
C207.4	Categorize about filter circuits and multivibrators.
C207.5	Design and analyze the feedback amplifiers and oscillator circuits.
C207.6	Ability to perform different types of electronic circuits and its characteristics.
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
C208.2	Examine load characteristics of DC shunt, series and compound motor and identify its maximum efficiency operating point
C208.3	Predict the efficiency of DC shunt machine in different methods
C208.4	Explain the load characteristics of single phase and three phase transformer , separate the different losses and to find the efficiency
C208.5	Predetermine the equivalent circuit parameters of single phase transformer in two different methods and compare the results
C208.6	Explore the DC starters.
YEAR/SEMESTER : II / 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.
C209.2	To make effective use of the interpolation formulas to find the missing data using the given data.
C209.3	Apply the techniques of solving any algebraic, transcendental equations
C209.4	Distinguish among the criteria of selection and procedures of various Numerical integration as well as Numerical differentiation rules.
C209.5	Apply various numerical methods in solving an initial value problem involving an ordinary differential equation.
C209.6	Estimate the best fit polynomial for the given tabulated data using the methods of Newton's interpolation and Lagrange's interpolation.

C210-EE8401/ ELECTRICAL MACHINES – II	
C210.1	Draw the constructional details and explain the performance of salient and non – salient type synchronous generators.
C210.2	Draw and explain the Principle of operation and performance of synchronous motor.
C210.3	Draw and describe the construction, principle of operation and performance of induction machines.
C210.4	Describe the starting and speed control of three-phase induction motors.
C210.5	Explain the construction, principle of operation and performance of single phase induction motors and special machines.
C210.6	Ability to model and analyze electrical apparatus and their application to power system.
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.
C211.2	Compute the losses, efficiency and parameters of the Transmission line.
C211.3	Analyze the Performance of Transmission Lines.
C211.4	Solve the voltage distribution in insulator strings, cables and methods to improve the same.
C211.5	Design overhead lines both Mechanical and electrical aspects using Sag calculation..
C211.6	Ability to understand and analyze power system operation, stability, control and protection.
C211- EE8403/ MEASUREMENTS AND INSTRUMENTATION	
C212.1	To introduce the basic functional elements of instrumentation.
C212.2	To introduce the fundamentals of electrical and electronic instruments.
C212.3	To construct a suitable bridges for measurement of particular parameters.
C212.4	To introduce various storage and display devices.
C212.5	To introduce various transducers and the data acquisition systems.
C213- EE8451/ LINEAR AND DIGITAL INTEGRATED CIRCUITS LABORATORY	
C213.1	Explain the procedure for the fabrication of IC
C213.2	Summarize the DC & AC characteristics of Operational amplifier.
C213.3	Discuss the applications of Operational amplifier

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

C216.2	Test Parity generator and checker and Design encoder decoder circuits
C216.3	Demonstrate 4 bit synchronous, asynchronous counter and Shift registers
C216.4	Illustrate multiplexer demultiplexer circuit and apply 555 timer in Monostable and Astable operation.
C216.5	Apply OP-AMP to construct Adder, comparator, differentiator, Integrator and Describe VCO, PLL characteristics.
C216.6	Ability to understand and analyse, linear and digital electronic circuits.
C217- EE8412/TECHNICAL SEMINAR	
C217.1	Present seminar in the field of electrical and electronics engineering subjects studied.
C217.2	Solve objective type questions in the field of electrical and electronics engineering.
C217.3	Communicate effectively, the subjects learned in the form of seminar presentation.
C217.4	Communicate effectively, the modern trends in the field of electrical and electronics engineering.
C217.5	Answer effectively during technical interviews.
YEAR/SEMESTER : III / V	
C301- EE8501/POWER SYSTEM ANALYSIS	
C301.1	Discuss Various components of Power System, their characteristics and Modelling.
C301.2	Draw equivalent single line reactance and impedance diagrams and per unit representation of a power system
C301.3	Explain significance of load flow problem and apply numerical techniques to obtain Load flow solution..
C301.4	Interpret the effect of symmetrical fault conditions and select suitable rating for various protective devices in a. power system
C301.5	Apply symmetrical components and solve unsymmetrical faults.in a power system.
C301.6	Discuss stability classifications and calculate stability limits using equal area criterion and numerical methods.
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.
C302.2	Classify the instructions with the help of Addressing modes of 8085 with necessary programs.
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.
C302.4	Analyze the architecture of various Interfacing Devices like 8255 PPI, 8259 PIC, 8251 USART, 8279, 8253
C302.5	Analyze the architecture of various Interfacing Devices like ADC and DAC and Programming of all the Interfacing IC's.
C302.6	Apply the knowledge of programming concepts of 8051 Microcontroller for various applications like keyboard display interface, servo motor etc.,
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.
C303.2	Compare the operation of two, three Pulse Converters and draw output Waveforms with and without source and load inductance.
C303.3	Classify the operation of Choppers and outline the application of SMPS.
C303.4	Analyze the operation of single phase and three phase Inverters with and without.
C303.5	Illustrate the operation of cycloconverter and its application.
C303.6	Illustrate the operation of AC voltage controller and its application.
C304- EE8591/DIGITAL SIGNAL PROCESSING	
C304.1	Classify the different types of signals and systems and Explain the sampling process of continuous time signal.
C304.2	Apply z-transform and inverse Z transform and analyze discrete time systems.
C304.3	Apply Radix-2 Decimation in Time (DIT) and Decimation in Frequency (DIF) FFT Algorithm to Compute Discrete Fourier Transform
C304.4	Explain different types of Infinite Impulse Response (IIR) filters and Finite Impulse Response (FIR) filters
C304.5	An understanding of sampling conversion technique in signal processing and its applications.

C304.6	Explain various architectures of Digital signal processors.
C305-CS8392/OBJECTED ORIENTED PROGRAMMING	
C305.1	Gain the basic knowledge on object oriented concepts
C305.2	Ability to implement features of object oriented programming to solve real world problems.
C305.3	Analyze the suitable test to validate the programs with exception handling mechanism.
C305.4	Analyze and apply to evaluate the concept of overloading.
C305.5	Develop the concept of java in creating classes, objects using arrays and control statements.
C305.6	Create packages, handle exceptions and develop multi-threaded programs.
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
C306.2	Ability to identify, formulate and solve air and noise pollution problems
C306.3	Ability to design stacks and particulate air pollution control devices to meet applicable standards.
C306.4	Ability to select control equipments.
C306.5	Ability to ensure quality, control and preventive measures.
C306.6	To impart knowledge on the principle and design of control of Indoor/ particulate/ gaseous air pollutant and its emerging trends.
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
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
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
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
C307.5	Measure the Power and Energy experimentally
C307.6	Analyze the Signal Conditioning units (a) Instrumentation Amplifier (b) ADC and DACs and Use the MATLAB for Process Simulation
C308- HS8581/PROFESSIONAL COMMUNICATION	
C308.1	Apply appropriate communication skills across settings, purposes and audiences.
C308.2	Demonstrate knowledge of communication theory and applications.
C308.3	Practice critical thinking to develop innovative and well-founded perspectives related to the students emphasis. Build and maintain healthy and effective relationships.
C308.4	Use technology to communicate effectively in various settings and contexts.
C308.5	Demonstrate appropriate and professional ethical behavior.
C309-CS8383/ OBJECT ORIENTED PROGRAMMING LABORATORY	
C309.1	Design C++ programs using functions, classes with objects, member functions and constructors.
C309.2	Develop operator and function overloading and run time polymorphism using C++.
C309.3	Develop file handling techniques in C++ for sequential and random access also use Java code for strings.
C309.4	Construct packages and interfaces in Java.
C309.5	Create threads in Java and handle predefined and user defined exceptions.
C309.6	Ability to model and analyze electrical apparatus and their application to power system.
YEAR/SEMESTER : III / 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.
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.

C310.3	Explain the operation and characteristics of various methods of solid state speed control of induction motor.
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.
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.
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.
C311-EE8602/ PROTECTION AND SWITCH GEAR	
C311.1	Summarize the causes and effects of faults in power system and explain the necessity of protection in power system.
C311.2	Describe the operation of various relays and summarize the various protective schemes
C311.3	List out the various faults that can occur on alternator, transformer, busbar and transmission line and select the suitable protection schemes.
C311.4	Synthesize the static relays using comparators and explain numerical relays.
C311.5	Derive the expression for RRRV, critical resistance value
C311.6	Express the various types of circuit breakers and its application.
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.
C312.2	Classify the types of I/O device ports and buses and different interfaces for data transfer.
C312.3	Model the Embedded Product Development Life Cycle (EDLC) by using different techniques like state machine model, sequential program model and concurrent model
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
C312.5	Apply the knowledge of programming concepts of Embedded Systems for various applications like Washing Machine automotive and Smart Card System applications

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.
C313.2	Recognize the crucial role of IP in organizations of different industrial sectors for the purposes of product and technology development.
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.
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.
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.
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
C314- EI8073/BIOMEDICAL INSTRUMENTATION	
C314.1	Ability to understand the philosophy of the heart, lung, blood circulation and respiration system.
C314.2	Ability to provide latest ideas on devices of non-electrical devices.
C314.3	Ability to gain knowledge on various sensing and measurement devices of electrical origin.
C314.4	Ability to understand the analysis systems of various organ types.
C314.5	Ability to bring out the important and modern methods of imaging techniques and their analysis.
C314.6	Ability to explain the medical assistance/techniques, robotic and therapeutic equipments.
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

C315.2	Plot the characteristics of MOSFET and IGBT
C315.3	Simulate a single phase AC to DC half and fully controlled converter
C315.4	Draw the output response of step up and step down MOSFET based chopper and Simulate a single phase IGBT based PWM inverter.
C315.5	Plot the output response of AC voltage controller and Simulate the Power Electronic Circuits
C315.6	Ability to understand and analyze, linear and digital electronic circuits.
C316- EE8681/ MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	
C316.1	Demonstrate and apply working of programs in microprocessor 8085 and 8051 microcontroller.
C316.2	Explain various assembly language programs
C316.3	Develop the basic knowledge of microprocessor and microcontroller interfacing and their application
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
C316.5	Justify the programming proficiency using various addressing modes and data transfer instruction of target microprocessor
C316.6	Develop mini-projects using 8085 processor
C317- EE8611/MINI PROJECT	
C317.1	Able to develop their own innovative prototype of ideas.
C317.2	Able to frame and use right principles.
C317.3	Able to implement proper methodology.
C317.4	Able to take up their final year project work.
C317.5	Able to prepare mini project reports and examination.
C317.6	Able to find solution for real time applications.
YEAR/SEMESTER : IV / VII	
C401-EE8701/HIGH VOLTAGE ENGINEERING	
C401.1	Identify the causes of over voltage and its effects in power system.
C401.2	Classify the breakdown Mechanisms in Solid, Liquid, gases and Composite dielectrics
C401.3	Design different type of Generating circuit for high voltage D.C and high

	voltage A.C
C401.4	Measure A.C and D.C high voltage and current using appropriate method
C401.5	Test the transformer ,insulator , circuit breakers, surge diverters and cables also discuss the insulation coordination
C401.6	Ability to understand and analyze power system operation, stability, control and protection.
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.
C402.2	Illustrate the importance of switching transients; Explain the concept of resistance switching, load switching and capacitance switching.
C402.3	Explain the concept of lightning mechanism, Describe the interaction between lightning and power system
C402.4	Apply the concept of reflection and refraction, Draw the Bewley Lattice diagram for different systems.
C402.5	Analyze the concept of short line (or) Kilometric fault and justify the EMTP for transient computation.
C402.6	Ability to understand and analyze power system operation, stability, control and protection.
C403-EE8703/RENEWABLE ENERGY SYSTEMS	
C403.1	Examine the various types of renewable energy sources
C403.2	Acquiring the knowledge about the performance of IG, PMSG, SCIG and DFIG
C403.3	Ability to fabricate different power converters namely AC to DC , DC to DC and AC to AC converters for renewable energy sources
C403.4	Analyze various operating modes of wind electrical generators and solar energy system
C403.5	Strengthen the knowledge about maximum power point tracking algorithms
C403.6	Gain the knowledge about various grid integrated systems
C404- EE8005/ SPECIAL ELECTRICAL MACHINES	
C404.1	Explain the construction, operating principle and performance characteristics of synchronous reluctance motors and its applications.
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.
C404.3	Describe the constructional features, principle of operation, performance analysis and applications of SRMs and develop control circuits for power converters.
C404.4	Describe the constructional features, principle of operation, performance analysis and applications of PMBLDC motor and discuss the power converter and controller circuits.
C404.5	Explain the principle and operational characteristics of ideal PMSM.
C404.6	Explain the principle and operational characteristics, VA requirements and power converter for PMSM.
C405- EE8015/ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION	
C405.1	To understand the main aspects of generation, utilization and conservation.
C405.2	To identify an appropriate method of heating for any particular industrial application
C405.3	To evaluate domestic wiring connection and debug any faults occurred.
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.
C405.5	To realize the appropriate type of electric supply system as well as to evaluate the performance of a traction unit
C405.6	To understand the main aspects of Traction.
C406- OBT751/ANALYTICAL METHODS AND INSTRUMENTATION	
C406.1	Able to understand the properties of electromagnetic radiation.
C406.2	Able to understand the molecular absorption spectrometry.
C406.3	Able to get the knowledge of NMR and Mass spectrometry.
C406.4	Able to understand the various chromatographies.
C406.5	Able to analyze the electro and surface microscopy.
C406.6	Able to find the various scanning probe microscopes.
C407- EE8711/POWER SYSTEM SIMULATION LABORATORY	
C407.1	Determine the bus impedance and admittance matrices using C and MATLAB
C407.2	Apply numerical methods for solving load flow problems and verify using C and MATLAB
C407.3	Analyze various faults occurring in power system and simulate the faults using PSCAD.

C407.4	Analyze small signal stability of Single Machine Infinite Bus (SMIB) system and draw the swing curve using AUPOWER Lab and MATLAB.
C407.5	Generate the coding for economic dispatch problems and load frequency dynamics problems using MATLAB.
C408- EE8712/RENEWABLE ENERGY SYSTEMS LABORATORY	
C408.1	Ability to understand and analyze Renewable energy systems
C408.2	Ability to train the students in Renewable Energy Sources and technologies.
C408.3	Ability to provide adequate inputs on a variety of issues in harnessing Renewable Energy.
C408.4	Ability to simulate the various Renewable energy sources.
C408.5	Ability to recognize current and possible future role of Renewable energy sources.
C408.6	Ability to understand basics of Intelligent Controllers.
YEAR/SEMESTER : IV / VIII	
C409- GE8074 /HUMAN RIGHTS	
C409.1	Able to understand the classifications of rights.
C409.2	Able to understand the Evolution of the concept of Human Rights.
C409.3	Able to understand the theories and perspectives of UN laws.
C409.4	Able to identify the human rights in India.
C409.5	Able to acquire the basic knowledge of human rights.
C409.6	Able to understand the role of NGO's in human rights.
C410- EE8010/POWER SYSTEM TRANSIENTS	
C410.1	Ability to understand and analyze switching and lightning transients.
C410.2	Ability to acquire knowledge on generation of switching transients and their control.
C410.3	Ability to analyze the mechanism of lightning strokes.
C410.4	Ability to understand the importance of propagation, reflection and refraction of travelling waves.
C410.5	Ability to find the voltage transients caused by faults.
C410.6	Ability to understand the concept of circuit breaker action, load rejection on integrated power system.
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 .
C411.2	Apply appropriate techniques and modern engineering hardware and software tools in electrical and electronics engineering and allied applications.
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.
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.
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.

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
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
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
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
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
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
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

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/BIO MEDICAL 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
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
C401-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
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
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
C411.6	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

Regulation – 2017 - PG
M.E POWER ELECTRONICS AND DRIVES
YEAR/SEMESTER: I/I

S.No	Course Outcome
C101-MA5155/APPLIED MATHEMATICS FOR ELECTRICAL ENGINEERS	
C101.1	Ability to apply the concepts of Linear programming in Electrical Engineering problems.
C101.2	Ability to achieve an understanding of the basic concepts of one dimensional random variables and apply in electrical engineering problems.
C101.3	Ability to familiarize the students in calculus of variations and solve problems using Fourier transforms associated with engineering applications.
C101.4	Ability to understand the matrix theory in electrical engineering problems.
C101.5	Ability to apply the concept of Fourier series in electrical engineering problems.
C101.6	Ability to analyze the power spectrum in electrical engineering problems.
C102-PX5101/POWER SEMICONDUCTOR DEVICES	
C102.1	Able to improve power semiconductor device structures for adjustable speed motor control applications.
C102.2	Able to understand the static and dynamic characteristics of current controlled power semiconductor devices
C102.3	Able to understand the static and dynamic characteristics of voltage controlled power semiconductor devices
C102.4	Enable the students for the selection of devices for different power electronics applications
C102.5	Able to understand the control and firing circuit for different devices.
C102.6	Able to understand the thermal protection in power semiconductor devices.
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.
C103.2	Ability to analyze the steady state and dynamic state operation of DC machine

	through mathematical modeling and simulation in digital computer.
C103.3	Ability to understand the theory of transformation of three phase variables to two phase variables.
C103.4	Ability to analyze the steady state and dynamic state operation of three-phase induction machines using transformation theory based mathematical modeling.
C103.5	Ability to analyze the steady state and dynamic state operation of three-phase synchronous machines using transformation theory based mathematical modeling
C103.6	Ability to apply digital computer simulation for PMSM and D.C shunt motor.
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.
C104.2	Able to acquire skills to derive the criteria for the design of power converters starting from basic fundamentals.
C104.3	Able to analyze and comprehend the various operating modes of different configurations of power converters.
C104.4	Able to design different power converters namely AC to DC, DC to DC and AC to AC converters.
C104.5	Ability to analyze the voltage controllers with R and R-L loads.
C104.6	Able to understand the difference between single phase and three phase cyclo converters.
C105-IN5152/SYSTEM THEORY	
C105.1	Able to understand the fundamentals of physical systems in terms of its linear and nonlinear models.
C105.2	Able to find solution on representing systems in state variable form.
C105.3	Able to analysis on solving linear and non-linear state equations.
C105.4	Able to estimate the properties of linear systems such as controllability and observability.

C105.5	Able to study the stability analysis of systems using Lyapunov's theory.
C105.6	Able to understand the model concepts and design of state and output feedback controllers and estimators.
C106-IN5091/SOFT COMPUTING TECHNIQUES	
C106.1	Able to expose the concepts of feed forward neural networks.
C106.2	Able to provide adequate knowledge about feedback neural networks.
C106.3	Able to teach about the concept of fuzziness involved in various systems.
C106.4	Able to expose the ideas about genetic algorithm.
C106.5	Able to provide adequate knowledge about of FLC and NN toolbox.
C106.6	Able to implement fuzzy logic controller in stability analysis.
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.
C107.2	Able to implementing analog interfacing as well as control circuits used in a closed-loop control for power electronic system.
C107.3	Able to acquire knowledge on mathematical modeling of power electronic circuits and implementing the same using simulation tools.
C107.4	Able to design and fabricate a power converter circuits at appreciable voltage/power levels.
C107.5	Able to develop skills on PCB design and fabrication.
C107.6	Able to get an insight on the switching behaviours of power electronic switches.

YEAR/SEMESTER : I/II

S.No	Course Outcome
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.
C108.2	Able to acquire skills to derive the criteria for the design of power converters for UPS, Drives etc.,
C108.3	Able to analyze and comprehend the various operating modes of different configurations of power converters.
C108.4	Able to design different single phase and three phase inverters.
C108.5	Able to understand series and parallel resonant inverters.
C108.6	Able to analyze PWM techniques for MLI.
C109- PX5202/SOLID STATE DRIVES	
C109.1	Able to understand various operating regions of the induction motor drives.
C109.2	Able to study and analyze the operation of VSI & CSI fed induction motor control.
C109.3	Able to understand the speed control of induction motor drive from the rotor side.
C109.4	Able to understand the field oriented control of induction machine.
C109.5	Able to understand the control of synchronous motor drives.
C109.6	Able to apply DTC control strategy in three phase induction motor.
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.
C110.2	Able to introduce the concepts of permanent magnet brushless synchronous motors and synchronous reluctance motors.

C110.3	Able to develop the control methods and operating principles of switched reluctance motors.
C110.4	Able to introduce the concepts of stepper motors and its applications.
C110.5	Able to understand the basic concepts of other special machines.
C110.6	Able to understand the torque speed characteristics of synchronous reluctance motor.
C111-PX5252/POWER QUALITY	
C111.1	Able to understand the various power quality issues.
C111.2	Able to understand the concept of power and power factor in single phase and three phase systems supplying non linear loads
C111.3	Able to understand the conventional compensation techniques used for power factor correction and load voltage regulation.
C111.4	Able to understand the active compensation techniques used for power factor correction.
C111.5	Able to understand the active compensation techniques used for load voltage regulation.
C111.6	Able to realize and control of DSTATCOM in voltage control.
C112-PX5003/FLEXIBLE AC TRANSMISSION SYSTEMS	
C112.1	Able to expose the concepts of feed forward neural networks.
C112.2	Able to provide adequate knowledge about feedback neural networks.
C112.3	Able to teach about the concept of fuzziness involved in various systems.
C112.4	Able to expose the ideas about genetic algorithm.
C112.5	Able to provide adequate knowledge about of FLC and NN toolbox.
C112.6	Able to implement fuzzy logic controller in stability analysis.

C113-PS5071/DISTRIBUTED GENERATION AND MICROGRID	
C113.1	Able to illustrate the concept of distributed generation.
C113.2	Able to analyze the impact of grid integration.
C113.3	Able to understand the concept of Micro grid and its configuration.
C113.4	Able to know the power electronics interfaces in DC and AC microgrids.
C113.5	Able to study the power quality issues in micogrids.
C113.6	Able to find non conventional energy resources.
C114-PX5211/ELECTRICAL DRIVES LABORATORY	
C114.1	Able to design and analyze the various DC and AC drives.
C114.2	Able to generate the firing pulses for converters and inverters using digital processors.
C114.3	Able to design of controllers for linear and nonlinear systems.
C114.4	Able to implement of closed loop system using hardware simulation.
C114.5	Able to design Cycloconverter fed Induction motor drives.
C114.6	Able to design Single phase Multi Level Inverter based induction motor drive.
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.
C115.2	Able to acquire practical knowledge within the chosen area of technology for project development.
C115.3	Able to Identify, analyze, formulate and handle programming projects with a comprehensive and systematic approach.

C115.4	Able to contribute as an individual or in a team in development of technical projects.
C115.5	Able to develop effective communication skills for presentation of project related activities.
C115.6	Able to prepare a project reports and to face reviews and viva voce examination.

YEAR/SEMESTER: II/III

S.No	Course Outcome
C201-PS5092/SOLAR AND ENERGY STORAGE SYSTEMS	
C201.1	Able to know the characteristics of sunlight and their properties.
C201.2	Able to Study about solar modules and PV system design and their applications.
C201.3	Able to Deal with grid connected PV systems.
C201.4	Able to discuss about different energy storage systems.
C201.5	Able to find out the applications in water pumping, battery chargers and other solar cars etc.,
C201.6	Able to know the international PV programs.
C202- PX5071/WIND ENERGY CONVERSION SYSTEMS	
C202.1	Able to learn the design and control principles of Wind turbine.
C202.2	Able to understand the concepts of fixed speed and variable speed, wind energy conversion systems.
C202.3	Able to analyze the grid integration issues.
C202.4	Able to understand the concept of variable speed systems.
C202.5	Able to know grid connected systems.

C202.6	Able to analyze the steady state and dynamic performance of power system.
C203-PX5072/POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS	
C203.1	Able to Provide knowledge about the stand alone and grid connected renewable energy systems.
C203.2	Able to equip with required skills to derive the criteria for the design of power converters for renewable energy applications.
C203.3	Able to analyze and comprehend the various operating modes of wind electrical generators and solar energy systems.
C203.4	Able to design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems.
C203.5	Able to develop maximum power point tracking algorithms.
C203.6	Able to analyze the grid integrated PMSG and SCIG based WECS.

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

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
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	-
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												
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


PRINCIPAL

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

**ELECTRONICS AND
COMMUNICATION
ENGINEERING**

Regulation – 2013 - UG

YEAR/SEMESTER: II/III	
C201 / MA6351/TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	
C201.1	Analyze Partial Differential Equations in various methods.
C201.2	Solving Fourier Series for different types of functions.
C201.3	Computing the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions
C201.4	Deduce the Gaussian function in Self reciprocal form using Fourier Transforms.
C201.5	Formation of finite difference method in Z-transforms.
C202 / EE6352/ELECTRICAL AND ENGINEERING AND INSTRUMENTATION	
C202.1	Fundamentals of semiconductor and basic theorems used in Electrical circuits
C202.2	Design amplifier circuits under CB, CE, CC Configurations.
C202.3	Design the Adders – Flip-Flops – Registers and Counters with logic gates.
C202.4	Discuss the Principles of Amplitude and Frequency Modulations and various blocks Communication Systems
C202.5	Demonstrate the working of Television systems, FAX machines and micro wave systems.
C202.6	Fundamentals of semiconductor and basic theorems used in Electrical circuits
C203/ EC6301/OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURES	
C203.1	Do simple programs using basic concepts of C.
C203.2	Design programs with derived data type and files.
C203.3	Solve the problem by applying linear data structures.
C203.4	Finding solutions to various problems using FIFO& LIFO.
C203.5	Sort and search the data by applying various algorithms.
C203.6	Develop applications in C and Solve problems using various linear data structures algorithms.
C204- EC6302/ DIGITAL ELECTRONICS	
C204.1	Apply the laws of Boolean algebra to simplify circuits and Boolean algebra expressions
C204.2	analyze the different methods used for simplifications of Boolean expressions and digital logic families

C204.3	Design and implement Combinational circuits.
C204.4	Design and implement Sequential circuits
C204.5	Study the various types of memory devices and understand the concept PLD's
C204.6	Design and implement synchronous and asynchronous sequential circuits
C205- EC6303/ SIGNALS AND SYSTEMS	
C205.1	Categorize the signals based on their properties.
C205.2	Analyze the Continuous Time & Discrete Time systems.
C205.3	Apply Laplace and Fourier Transform to Analyze Continuous Time signals.
C205.4	Apply Laplace Transform and convolution integral to Analyze Continuous Time LTI systems.
C205.5	Apply Discrete Time Fourier Transform and Z-transform to Analyze Discrete Time LTI signals.
C205.6	Describe the mathematical modelling of DT systems.
C206- EC6304/ ELECTRONIC CIRCUITS- I	
C206.1	Design circuits with transistor biasing
C206.2	To design and analyze single stage and multistage amplifier circuits
C206.3	Analyze the small signal equivalent circuits of transistors
C206.4	Design and analyze large signal amplifiers
C206.5	Construct amplifiers with active loads
C206.6	Apply the knowledge gained in the design of Electronic circuits
C207- EC6311/ ANALOG AND DIGITAL CIRCUITS LABORATORY	
C207.1	Design and test BJT/JFET Amplifiers
C207.2	Differentiate cascode and cascade amplifiers
C207.3	Analyze the limitation in bandwidth of singlestage and multistage amplifier
C207.4	Simulate and analyze amplifiers circuits using pspice
C207.5	Design and test the combinational digital logic circuits
C207.6	Design and test the sequential digital logic circuits
C208- EC6312/ OOPS AND DATA STRUCTURES LABORATORY	
C208.1	Do simple programs using basic concepts of C.
C208.2	Design programs with derived data type and files.
C208.3	Solve the problem by applying linear data structures.

C208.4	Finding solutions to various problems using FIFO& LIFO.
C208.5	Sort and search the data by applying various algorithms.
C208.6	Develop applications in C and Solve problems using various linear data structures algorithms.
YEAR/SEMESTER: II/IV	
C209-MA6451/ PROBABILITY AND RANDOM PROCESSES	
C209.1	The method of analyzing of feedback amplifiers
C209.2	Design LC and RC oscillators and analyze its performance
C209.3	Analyze performance of tuned amplifiers.
C209.4	The concept and working of wave shaping circuits
C209.5	To design and analyze the functions of multivibrators
C209.6	The fundamentals of blocking oscillators and time base generators
C210- EC6401/ ELECTRONIC CIRCUITS II	
C210.1	The method of analyzing of feedback amplifiers
C210.2	Design LC and RC oscillators and analyze its performance
C210.3	Analyze performance of tuned amplifiers.
C210.4	The concept and working of wave shaping circuits
C210.5	To design and analyze the functions of multivibrators
C210.6	The fundamentals of blocking oscillators and time base generators
C211-EC6402/COMMUNICATION THEORY	
C211.1	Can be able to design different types of AM system
C211.2	Design angle modulated communication systems.
C211.3	Apply the concepts of Random Process to design a Communication systems
C211.4	Analyze the noise performance of AM and FM systems
C211.5	Able to understand various source coding technique
C211.6	Could analyze the different types of receivers.
C212-EC6403/ELECTROMAGNETIC FIELDS	
C212.1	Analyze field potentials due to static electric fields
C212.2	Explain how materials affect electric fields
C212.3	Analyze field potentials due to static magnetic fields
C212.4	Explain how materials affect magnetic fields.
C212.5	Perform the relation between the fields under time varying Situations

C212.6	Discuss the principles of propagation of uniform plane waves
C213-EC6404/LINEAR INTEGRATED CIRCUITS	
C213.1	Know the op-amp's basic construction, characteristics, parameter limitations, various configurations
C213.2	Describe the Internal layout of an Op-amp
C213.3	Design linear and nonlinear Countless applications of op-amp
C213.4	Design applications using analog multiplier and PLL
C213.5	Design ADC & DAC using op-amps.
C213.6	Generate waveforms using op-amp circuits
C214-EC6405/CONTROL SYSTEM ENGINEERING	
C214.1	Analyze various types of feedback amplifiers.
C214.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.
C214.3	Demonstrate the feedback amplifiers using SPICE Tool.
C214.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.
C214.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.
C214.6	Demonstrate the voltage and current time base circuits using SPICE Tool.
C215-EC6411/ CIRCUIT AND SIMULATION INTEGRATED LABORATORY	
C215.1	Analyze various types of feedback amplifiers.
C215.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.
C215.3	Demonstrate the feedback amplifiers using SPICE Tool.
C215.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.
C215.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.
C215.6	Demonstrate the voltage and current time base circuits using SPICE Tool.
C216-EC6412/LINEAR INTEGRATED CIRCUIT LABORATORY	
C216.1	Design of amplifiers and oscillators using IC 741
C216.2	Construct and design integrator and differentiator circuit using IC 741
C216.3	Design filters using Opamp and perform experiment on frequency response
C216.4	Analyse the working of PLL and use PLL as frequency multiplier
C216.5	Design DC power supply using ICs
C216.6	Analyse the performance of oscillators and multivibrators using SPICE

C217-EE6461/ ELECTRICAL ENGINEERING AND CONTROL SYSTEM LABORATORY	
C217.1	Analyze various types of feedback amplifiers.
C217.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.
C217.3	Demonstrate the feedback amplifiers using SPICE Tool.
C217.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.
C217.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.
C217.6	Demonstrate the voltage and current time base circuits using SPICE Tool.
YEAR/SEMESTER: III/V	
C301-EC6501/DIGITAL COMMUNICATION	
C301.1	To Understand the basic steps involved in Digital Communication
C301.2	To compare and learn various waveform coding style in digital communication system
C301.3	To know about all types of pass band and pass band transmission scheme
C301.4	To analyze the various techniques to involved in facilitating the transmission schemes
C301.5	To understand the various error occurring and to calculate the requirements needed for a real time design
C301.6	To apply various error controlling algorithm to ensure the reliability of the transmission.
C302-EC6502/PRINCIPLES OF DIGITAL SIGNAL PROCESSING	
C302.1	Apply DFT and FFT for the analysis of digital signals & systems.
C302.2	Design an analog to digital IIR filters and its realization.
C302.3	Design of digital FIR filters using the windowing techniques and frequency sampling method and to realize their structures.
C302.4	Characterize finite Word length effect on filters.
C302.5	Implement the Multirate Filters and Apply Adaptive Filters to equalization
C302.6	An understanding of sampling conversion technique in signal processing and its applications.

C303-EC6503/TRANSMISSION LINES AND WAVE GUIDES	
C303.1	Students can able to understand the characteristics of transmission line and its losses
C303.2	Students can understand about standing wave ration and input impedance in high frequency transmission line
C303.3	Analyze impedance matching by stubs using smith chart
C303.4	Design filters and equalizers for given applications
C303.5	To analyze the characteristics of TE and TM waves.
C303.6	Evaluate the characteristics of Circular wave guides and rectangular wave guides
C304-GE6351/ENVIRONMENTAL SCIENCE AND ENGINEERING	
C304.1	Analyze various types of feedback amplifiers.
C304.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.
C304.3	Demonstrate the feedback amplifiers using SPICE Tool.
C304.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.
C304.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.
C304.6	Demonstrate the voltage and current time base circuits using SPICE Tool.
C305- EC6504/ MICROPROCESSOR AND MICROCONTROLLER	
C305.1	Understand and execute programs based on 8086 microprocessor.
C305.2	Design Memory Interfacing circuits.
C305.3	Design and interface I/O circuits.
C305.4	Design and implement 8051 microcontroller based systems.
C305.5	Demonstrate the interfacing circuit in real system.
C305.6	Construct any system operation based on the knowledge using system design using microcontroller
C306-EC6511/ DIGITAL SIGNAL PROCESSING LABORATORY	
C306.1	Demonstrate the simulation of DSP systems.
C306.2	Demonstrate the abilities of digital signal processor based DSP systems implementation.
C306.3	Analyze the finite word length effect on DSP systems.
C306.4	Demonstrate the applications of FFT to DSP systems.
C306.5	Analyze the MAC operation using various addressing modes on DSP systems.
C306.6	Apply the adaptive filters for various applications of DSP systems.
C307-EC6512/ COMMUNICATION SYSTEM LABORATORY	
C307.1	Simulate end-to-end Communication Link

C307.2	Demonstrate their knowledge in base band signaling schemes through implementation of FSK, PSK and DPSK
C307.3	Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication system
C307.4	Simulate the various functional modules of a communication system
C307.5	Validate the the functional modules of a communication system
C307.6	Implement adaptive filters for various applications of DSP
C308-EC6513/ MICROPROCESSOR AND MICROCONTROLLER LABORATORY	
C308.1	Demonstrate and apply working of programs in 8086 microprocessor and 8051 Microcontroller
C308.2	Develop the basic knowledge of icroprocessor and microcontroller interfacing and
C308.3	Interface different I/Os with processor and Generate waveforms using Microprocessors.
C308.4	Execute Programs in 8051
C308.5	Summarize the concepts of Assembly level language programming and its applications.
C308.6	Develop the assembly level programming using 8086 and 8051 instruction set
YEAR/SEMESTER: III/VI	
C309-MG 6851/PRINCIPLES OF MANAGEMENT	
C309.1	Evaluate the global context for taking managerial actions of planning, organizing and controlling.
C309.2	Assess global situation, including opportunities and threats that will impact management of an organization.
C309.3	Integrate management principles into management practices.
C309.4	Assess managerial practices and choices relative to ethical principles and standards.
C309.5	Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances.
C310-CS6303/COMPUTER ARCHITECTURE	
C310.1	Use various metrics to calculate the performance of a computer system.
C310.2	Identify the addressing mode of instructions and to Determine which hardware blocks and control lines are used for specific instructions.

C310.3	Demonstrate how to add and multiply integers and floating-point numbers using two's complement and IEEE floating point representation.
C310.4	Analyze clock periods, performance, and instruction throughput of single-cycle, multi-cycle, and pipelined implementations of a simple instruction set.
C310.5	Detect pipeline hazards and identify possible solutions to those hazards
C310.6	Show how cache design parameters affect cache hit rate and to Map a virtual address into a physical address
C311-CS6551/COMPUTER NETWORKS	
C311.1	Explain the components requirement of networks and link layer service
C311.2	Classify the Media Access Control Protocols and different Internetworking
C311.3	Demonstrate various types of routing techniques
C311.4	Outline the mechanisms involved in transport layer
C311.5	Experiment with different application layer protocols
C311.6	Analyze various routing algorithms
C312-EC6601/VLSI DESIGN	
C312.1	Students will be able to recollect all concepts of device characteristics of MOS and basic of Digital Electronics.
C312.2	Student can construct various types of digital circuits in different logic styles.
C312.3	Students can also enumerate the various issues which has to be taken care off while designing a combinational or sequential circuits
C312.4	They can easily link simple logic circuit to complex block of a processor
C312.5	They are introduced to various implementing strategies and basic architecture of leading FPGA and design steps.
C312.6	They will be familiarized with the steps of fabrication and verification of layout of the circuit.
C313-EC6602/ANTENNA AND WAVE PROPAGATION	
C313.1	Explain the radiation mechanism through an antenna.
C313.2	Measure the parameters of an antenna under test
C313.3	Design and analyze wire antennas
C313.4	Design and analyze an array of antenna
C313.5	Analyze the radiation mechanism of a wireless communication systems

C313.6	Design and analyze aperture antennas
C314-EC6001/MEDICAL ELECTRONICS	
C314.1	Analyze and evaluate the effect of different diagnostic and therapeutic methods, their risk potential, physical principles, opportunities and possibilities for different medical procedures.
C314.2	Measure the various electrical signals from human system.
C314.3	Examine biochemical and various physiological information.
C314.4	Describe the working of units which will help to restore normal functioning.
C314.5	Understand the position of biomedical instrumentation in modern Hospital care
C314.6	Construct a system for telemedicine and electrical safety.
C315-EC6611/ COMPUTER NETWORKS LABORATORY	
C315.1	Explain the components requirement of networks and link layer service
C315.2	Classify the Media Access Control Protocols and different Internetworking
C315.3	Demonstrate various types of routing techniques
C315.4	Outline the mechanisms involved in transport layer
C315.5	Experiment with different application layer protocols
C315.6	Analyze various routing algorithms
C316-EC6612/ VLSI DESIGN LABORATORY	
C316.1	Students will be able to recollect all concepts of device characteristics of MOS and basic of Digital Electronics.
C316.2	Student can construct various types of digital circuits in different logic styles.
C316.3	Students can also enumerate the various issues which has to be taken care off while designing a combinational or sequential circuits
C316.4	They can easily link simple logic circuit to complex block of a processor
C316.5	They are introduced to various implementing strategies and basic architecture of leading FPGA and design steps.
C316.6	They will be familiarised with the steps of fabrication and verification of layout of the circuit.
C317-GE6674/ COMMUNICATION AND SOFT SKILLS - LABORATORY	
C317.1	Explain the components requirement of networks and link layer service
C317.2	Classify the Media Access Control Protocols and different Internetworking

C317.3	Demonstrate various types of routing techniques
C317.4	Outline the mechanisms involved in transport layer
C317.5	Experiment with different application layer protocols
C317.6	Analyze various routing algorithms
YEAR/SEMESTER: IV/VII	
C401-EC6701/ RF AND MICROWAVE ENGINEERING	
C401.1	Analyze the different low frequency parameters and S parameters and describe the RF component basics.
C401.2	Explain the active & passive microwave devices & components used in Microwave communication systems.
C401.3	Analyze the multi- port RF networks and RF transistor amplifiers.
C401.4	Generate Microwave signals and design microwave amplifiers.
C401.5	Explain about the working principle of various microwave tubes and the limitations of conventional tubes.
C401.6	Measure and analyze Microwave signal and parameters.
C402-EC6702/OPTICAL COMMUNICATION AND NETWORKS	
C402.1	To recollect the basic concept of light propagation and to know how to make use of light as a communication signal
C402.2	To know about all the issues related to fiber regarding splicing techniques, coupling and lensing schemes and fiber related losses and degradation and to measure the parameters of the fiber.
C402.3	To understand the construction of optical sources and detector.
C402.4	To analyze the performance of sources and detector and the link as a whole.
C402.5	To analyze the receiver configuration ,types of preamplifier and fiber amplifier.
C402.6	To understand the concepts optical networks
C403-EC6703/EMBEDDED AND REAL TIME SYSTEMS	
C403.1	Describe the architecture and programming of ARM processor
C403.2	Outline the concepts of embedded systems
C403.3	Explain the basic concepts of real time operating system design
C403.4	Differentiate between the general purpose operating system and the real time operating system
C403.5	Explain the concept of design methodologies techniques for embedded system.

C403.6	Model real-time applications using embedded-system concepts
C404-IT6005/DIGITAL IMAGE PROCESSING	
C404.1	Able to know the fundamentals of digital image processing techniques.
C404.2	Understand the concept of visual system, various types of sensing and acquisition systems.
C404.3	Determine the various image enhancement techniques in spatial and frequency domain
C404.4	Analyze the various filtering methods for image restoration and segmentation.
C404.5	Use various coding techniques for image compression.
C404.6	Analyze various image descriptors and features of image representation techniques.
C405-EC6009/ADVANCED COMPUTER ARCHITECTURE	
C405.1	Explain the components requirement of networks and link layer service
C405.2	Classify the Media Access Control Protocols and different Internetworking
C405.3	Demonstrate various types of routing techniques
C405.4	Outline the mechanisms involved in transport layer
C405.5	Experiment with different application layer protocols
C405.6	Analyze various routing algorithms
C406-EC6016/OPTO ELECTRONIC DEVICES	
C406.1	Review Solid state semiconductor physics.
C406.2	Explain concepts of lasers.
C406.3	Classify different optical detection devices
C406.4	Distinguish among different light modulation techniques
C406.5	Summarize applications of opto electronic circuits
C407-EC6711/EMBEDDED LABORATORY	
C407.1	Write programs in ARM for a specific Application
C407.2	Interface memory and Write programs related to memory operations
C407.3	Interface A/D and D/A convertors with ARM system
C407.4	Analyze the performance of interrupt
C407.5	Write programs for interfacing keyboard, display and motor
C407.6	Formulate a mini project using embedded system

C408-EC6712/OPTICAL AND MICROWAVE LABORATORY	
C408.1	Analyze the performance of simple optical link by measurement of losses and Analyzing the mode characteristics of fiber.
C408.2	Analyze the Eye Pattern, Pulse broadening of optical fiber and the impact on BER.
C408.3	Estimate the Wireless Channel Characteristics and Analyze the performance of Wireless Communication System.
C408.4	Understand the intricacies in Microwave System design.
YEAR/SEMESTER: IV/VIII	
C409 / EC6801/WIRELESS COMMUNICATION	
409.1	Explain the Characteristics of fading in wireless channels
409.2	Describe the fundamentals of Cellular Architecture
409.3	Use various signaling schemes for wireless communication channels
409.4	Compare the performance of channel using various propagation models
409.5	Analyze the various mitigation techniques to address fading and interference in multipath propagation.
409.6	Design MIMO Systems in fading and nonfading channels
C410 / EC6802/WIRELESS NETWORKS	
410.1	Conversant with the latest 3G/4G networks and its architecture
410.2	Design and implement wireless network environment for any application using latest wireless protocols and standards
410.3	Ability to select the suitable network depending on the availability and requirement
410.4	Implement different type of applications for smart phones and mobile devices with latest network strategies
410.5	Analyze the latest wireless protocols for the problems associated with Wireless Networks.
410.6	Interpret the latest 4G networks and its architecture.
C411 / CS6303/AD HOC AND WIRELESS SENSOR NETWORKS	
411.1	Know the basics of Ad hoc networks and Wireless Sensor Networks
411.2	Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement
411.3	Apply the knowledge to identify appropriate physical and MAC layer protocols
411.4	Understand Mediation Device Protocol, Contention based protocols

411.5	Understand the transport layer and security issues possible in Ad hoc and sensor networks.
411.6	Be familiar with the OS used in Wireless Sensor Networks and build basic modules
C412 / GE8077/TOTAL QUALITY MANAGEMENT	
412.1	Describe the dimensional barrier regarding Quality.
412.2	Summarize the Total quality principles.
412.3	Demonstrate the tools utilization for quality improvement.
412.4	Discover the new decision of principle in real time projects.
412.5	Analyze the various types of techniques are used to measure quality.
412.6	Apply the various quality systems in implementation of Total quality management.
C413 /EC6811/PROJECT WORK	
413.1	Demonstrate profound technical knowledge of the project.
413.2	Identify a real world problem, review literature and suggest its solution.
413.3	Demonstrate solutions to complex engineering problems utilizing a systems approach
413.4	Provide solutions to meet the specified needs of the society.
413.5	Create a system and validate its conformance
413.6	Perform data analysis, interpret and provide valid conclusions.

C201-MA6351/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- EE6352/ ELECTRICAL ENGINEERING AND INSTRUMENTATION												
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- EC6301/ OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURES												
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- EC6302/ DIGITAL ELECTRONICS												
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
C204.6	2	2	2	2	2	2	-	2	3	3	2	2
C205- EC6303/ SIGNALS AND SYSTEMS												
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- EC6304/ ELECTRONIC CIRCUITS- I												
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

C215.6	2	2	2	-	-	-	-	-	-	-	-	2
C216- EC6412/LINEAR INTEGRATED CIRCUIT 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
C217 EE6461/ ELECTRICAL ENGINEERING AND CONTROL SYSTEM 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- EC6501/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- EC6502/PRINCIPLES OF DIGITAL 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-EC6503/TRANSMISSION LINES AND WAVE GUIDES												
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-GE6351/ENVIRONMENTAL SCIENCE AND ENGINEERING												
C304.1	2	3	3	2	2	-	2	-	-	-	3	-
C304.2	2	2	3	2	2	3	-	2	-	3	2	2
C304.3	2	2	2	2	2	-	-	-	2	-	2	-
C304.4	3	3	2	2	3	-	3	-	-	-	2	2
C304.5	3	3	3	2	2	-	-	-	3	-	2	-
C304.6	2	2	3	2	3	-	-	-	-	2	2	2
C305- EC6504/ MICROPROCESSOR AND MICROCONTROLLER												
C305.1	3	3	2	2	-	-	-	-	-	-	-	2
C305.2	3	3	3	2	-	-	-	-	-	-	-	2
C305.3	3	3	3	2	-	-	-	-	-	-	-	2
C305.4	3	3	2	2	-	-	-	-	-	-	-	2
C305.5	3	3	3	2	-	-	-	-	-	-	-	2
C305.6	3	3	3	2	-	-	-	-	-	-	-	2
C306- EC6511/ DIGITAL SIGNAL PROCESSING LABORATORY												
C306.1	3	3	3	-	2	2	-	2	2	-	-	2
C306.2	3	2	3	-	2	-	-	-	-	-	-	3
C306.3	3	2	2	-	2	-	-	-	-	2	-	2
C306.4	3	3	2	-	3	-	2	-	-	-	-	3
C306.5	3	3	3	2	2	-	-	-	-	-	2	2
C306.6	2	2	3	-	3	-	-	2	-	-	-	2
C307- EC6512/ COMMUNICATION SYSTEM LABORATORY												
C307.1	3	2	3	-	-	-	-	-	3	2	2	2
C307.2	3	2	2	-	-	-	-	-	3	2	2	3

C307.3	3	3	2	-	-	-	-	-	3	2	2	3
C307.4	3	2	2	-	-	-	-	-	3	2	2	2
C307.5	3	3	2	-	-	-	-	-	3	2	2	3
C307.6	3	2	2	-	-	-	-	-	3	2	2	2
C308- EC6513/ MICROPROCESSOR AND MICROCONTROLLER LABORATORY												
C308.1	3	3	3	2	2	-	-	-	-	-	3	-
C308.2	3	2	3	2	2	-	-	-	-	-	2	-
C308.3	3	2	2	2	2	-	-	-	-	-	2	-
C308.4	3	3	2	2	3	-	-	-	-	-	2	-
C308.5	3	3	3	2	2	-	-	-	-	-	2	-
C308.6	2	2	3	2	3	-	-	-	-	-	2	-
C309- MG 6851/PRINCIPLES OF MANAGEMENT												
C309.1	2	-	-	-	-	2	2	-	2	3	-	2
C309.2	2	-	-	-	-	2	2	-	2	3	-	2
C309.3	3	-	-	-	-	3	2	-	2	3	-	2
C309.4	3	-	-	-	-	3	2	-	2	3	-	2
C309.5	2	-	-	-	-	2	3	-	2	3	-	2
C309.6	2	-	-	-	-	2	3	-	2	3	-	2
C310- CS6303/COMPUTER ARCHITECTURE												
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- CS6551/COMPUTER NETWORKS												
C311.1	3	2	2	2	-	-	-	-	-	2	2	2
C311.2	3	2	2	2	-	-	-	-	-	2	2	2
C311.3	3	2	2	2	-	-	-	-	-	2	2	2
C311.4	3	2	2	2	-	-	-	-	-	2	2	2
C311.5	3	2	2	2	-	-	-	-	-	2	2	2

C311.6	3	2	2	2	-	-	-	-	-	2	2	2
C312- EC6601/VLSI DESIGN												
C312.1	3	3	3	2	2	-	-	-	-	-	3	-
C312.2	3	2	3	2	2	-	-	-	-	-	2	-
C312.3	3	2	2	2	2	-	-	-	-	-	2	-
C312.4	3	3	2	2	3	-	-	-	-	-	2	-
C312.5	3	3	3	2	2	-	-	-	-	-	2	-
C312.6	2	2	3	2	3	-	-	-	-	-	2	-
C313- EC6602/ANTENNA AND WAVE PROPAGATION												
C313.1	3	3	3	2	2	2	-	2	2	2	3	-
C313.2	3	2	3	2	2	-	-	-	-	3	2	2
C313.3	3	2	2	2	2	-	-	-	-	2	2	-
C313.4	3	3	2	2	3	-	2	-	-	2	2	-
C313.5	3	3	3	2	2	-	-	-	-	3	2	-
C313.6	2	2	3	2	3	-	-	2	-	2	2	-
C314- EC6001/MEDICAL ELECTRONICS												
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- EC6611/ COMPUTER NETWORKSLABORATORY												
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- EC6612/ VLSI DESIGN 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
C317- GE6674/ COMMUNICATION AND SOFT SKILLS – LABORATORY												
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
C401- EC6701/ RF 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- EC6702/OPTICAL COMMUNICATION AND NETWORKS												
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- EC6703/EMBEDDED AND REAL TIME SYSTEM												
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- IT6005/DIGITAL IMAGE PROCESSING												
C404.1	2	-	2	-	-	3	-	3	-	2	-	2
C404.2	2	-	2	-	-	3	-	3	-	2	-	2
C404.3	2	-	2	-	-	3	-	3	-	2	-	2
C404.4	2	-	2	-	-	3	-	3	-	2	-	2
C404.5	2	-	2	-	-	3	-	3	-	2	-	2
C404.6	2	-	2	-	-	3	-	3	-	2	-	2
C405- EC6009/ADVANCED COMPUTER ARCHITECTURE												
C405.1	3	3	3	2	3	3	2	2	2	2	2	2
C405.2	3	2	3	2	3	2	2		2		2	2
C405.3	2	3	2	2	3	2	2	2	2	2	-	-
C405.4	2	2	2	2	2	2	-	-	-	-	-	2
C405.5	3	3	2	2	2	2	2	-	2	-	2	2
C405.6	2	2	2	2	2	2	2	2	2	2	-	2
C406- EC6016/OPTO ELECTRONIC DEVICES												
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- EC6711/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- EC6712/ OPTICAL AND MICROWAVE 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- EC6801/WIRELESS COMMUNICATION												
C409.1	3	3	2	-	2	2	2	2	-	2	2	2
C409.2	3	2	3	-	2	2	2	2	-	2	2	2
C409.3	2	2	2	-	2	2	2	2	-	2	2	2
C409.4	2	2	2	2	2	2	2	2	-	2	2	2
C409.5	2	2	2	2	2	2	2	2	-	2	2	2
C409.6	2	2	2	2	2	2	2	3	-	2	2	2
C410- EC6802/WIRELESS NETWORKS												
C410.1	-	-	2	2	-	3	3	3	3	3	2	2
C410.2	-	-	2	2	-	2	3	3	3	3	2	2
C410.3	-	-	3	2	-	3	3	3	3	2	2	2
C410.4	-	-	2	2	-	2	3	3	3	-	2	2
C410.5	-	-	3	2	-	3	3	3	3	-	2	2
C410.6	-	-	2	2	-	2	3	3	3	2	2	2
C411- CS6303/AD HOC AND WIRELESS SENSOR NETWORKS												
C411.1	2	2	-	-	-	2	2	-	-	-	-	2
C411.2	2	3	-	-	-	2	2	2	-	-	-	2
C411.3	2	3	-	-	-	2	2	2	-	-	2	2
C411.4	2	3	2	-	-	2	2	2	-	-	2	2
C411.5	2	3	2	-	-	2	2	3	-	-	2	2
C411.6	2	3	-	-	-	2	2	2	-	-	2	2
C412- GE/6757 TOTAL QUALITY MANAGEMENT												
C412.1	3	3	3	2	3	3	2	-	2	2	2	2
C412.2	3	2	3	2	3	2	2	-	2	-	2	2

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M.E. VLSI DESIGN

S.No	Course Outcome
C101/ MA7157 Applied Mathematics for Electronics Engineers	
C101.1	Apply the concept of diagonalisation of matrices in the field of electronics and communication engineering.
C101.2	Apply the concept of number theory in cryptography.
C101.3	Apply the probability concepts and distributions in engineering applications.
C101.4	Model the real life problems into Mathematical problems and analyse them.
C101.5	Apply the concept of Algebraic structures in Engineering Applications.
C102/ VL7101 VLSI Signal Processing	
C102.1	Ability to understand the DSP algorithms and implement the FIR filter VLSI architectures
C102.2	Ability to implement the algorithmic strength reduction techniques in filter structures
C102.3	Ability to understand the clocking styles, synchronous and Asynchronous protocols suitable
C102.4	Area reduction using folding techniques, Strategies for arithmetic implementation
C102.5	Synchronous, wave, and asynchronous pipelining
VL7102 VLSI Design Techniques	
C103.1	Carry out transistor level design of the most important building blocks used in digital CMOS VLSI circuits
C103.2	Discuss design methodology of arithmetic building block
C103.3	Analyze tradeoffs of the various circuit choices for each of the building block
C103.4	Extract the analog parasitic elements from the layout and analyze the circuit timing using a logic simulator and an analog simulator
C103.5	Design logic circuit layouts for both static CMOS and dynamic clocked CMOS circuits
VL7103 Solid State Device Modelling and Simulation	
C104.1	Know about the basics of MOSFET device modeling and noise modeling

C104.2	Understand and apply the concepts of noise modeling in system design
C104.3	Realize concepts about process variation and quality assurance
C104.4	Distinguish degenerate and non-degenerate semiconductors
C104.5	Analyze behaviour of different electronic structures using MATLAB software.
C105 / AP7008 DSP Integrated Circuits	
C105.1	Basic knowledge of Digital Signal Processing, Discrete Time Transforms and VLSI circuit technologies
C105.2	Exposure to digital filters, multi rate signal processing and finite word length effects
C105.3	Understanding of the principle of state of art DSP architectures and design of arithmetic units.
C105.4	Concept behind multi rate systems is understood
C105.5	Get familiar with the DSP processor architectures and how to perform synthesis of processing
C106 / VL7002 Security Solutions in VLSI	
C106.1	Design architectures for security threats
C106.2	Optimize design in terms of area, speed and power
C106.3	Implement various cryptography algorithms in the design
C106.4	Design and implement the various cryptography algorithms in VLSI
C106.5	Get familiar with the DSP processor architectures and how to perform synthesis of processing
C107 / VL7111 VLSI Design Laboratory I	
C107.1	Program in Verilog/VHDL and implement the program in FPGA
C107.2	Have knowledge of hardware implementation of digital signal processing circuits
C107.3	Design a microcontroller based systems
C107.4	Design and implement the various cryptography algorithms in VLSI
C107.5	Design a microcontroller based systems
C108 / AP7201 Analysis and Design of Analog Integrated Circuits	
C108.1	Knowledge on circuit configuration for linear integrated circuits and multiple transistor amplifiers

C108.2	Ability to analyze nonlinear analog circuits
C108.3	Ability to analyze and design Operational amplifier
C108.4	Able to analyze and design analog circuits such as Differential Amplifier, Current mirrors, Biasing circuits
C108.5	Able to carry out research and development in the area of analog and mixed signal IC design
C109 / VL7201 CAD for VLSI Circuits	
C109.1	Design advanced electronics systems
C109.2	Evaluate and analyze the systems in VLSI design environments
C109.3	Apply advanced technical knowledge in multiple contexts
C109.4	Conduct an organized and systematic study on significant research topic within the field of VLSI and its allied field
C109.5	Discuss the hardware models for high level synthesis
C110 / VL7202 Low Power VLSI Design	
C110.1	Awareness of power consumption , power dissipation in CMOS device and get exposed to logic level power optimization
C110.2	Knowledge on low power design and power estimation techniques in CMOS circuits
C110.3	Understanding of the synthesis and software design for low power
C110.4	Use mathematical methods and circuit analysis models in analysis of CMOS digital electronics circuits, including logic components and their interconnect.
C110.5	Create models of moderately sized CMOS circuits that realize specified digital functions
C111 /VL7006 Analog VLSI Design	
C111.1	Understand analog transistor fundamentals, circuits and amplifiers of CMOS FET
C111.2	Gain knowledge analog filters and converters
C111.3	Test the analog circuits and to apply the knowledge to build common analog blocks
C111.4	Able to analyze and design mixed mode circuits such as Comparator, ADCs, DACs, PLL.
C111.5	Solve practical and state of the art analog IC design problems to serve VLSI industries.
C112/ CU7001 Real Time Embedded Systems	
C112.1	Make PCB design, assembling of Embedded Systems

C112.2	Work on the Embedded OS and RTOS available
C112.3	Use the function routines of UCOS-II RTOS
C112.4	Design RTOS based Embedded Systems
C112.5	Apply various real time algorithms in building embedded systems
C113 / AP7016 System on Chip design	
C113.1	Ability to design combinational and sequential logic networks
C113.2	Knowledge on optimization of power in combinational and sequential logic machines
C113.3	Ability to design FPGA and PLA and Knowledge on floor planning methods for system design
C113.4	Understand the basics of System on Chip, On chip communication architectures like AMBA,AXI and utilizing Platform based design.
C113.5	Appreciate high performance algorithms available for ASICs
C114/ VL7211 VLSI Design Laboratory II	
C114.1	Program and interface ARM and PSoC using embedded C.
C114.2	Design an analog circuit and analyze it for specific applications.
C114.3	Synthesize application modules in FPGA.
C114.4	Program in DSP processor TMS320C50
C114.5	Ability to design using FPGA/CPLD devices
C201 / VL7301 Testing of VLSI Circuits	
C201.1	Prepare design for testability Discuss test algorithms
C201.2	Explain fault diagnosis
C201.3	Apply the concepts in testing which can help them design a better yield in IC design
C201.4	Implement combinational and sequential circuit test generation algorithms.
C201.5	Design the appropriate circuit to embed fault-tolerant techniques.
C202/ VL7011 Signal Integrity for High Speed Devices	
C202.1	Develop the skills for analyzing high-speed circuits
C202.2	Analyze signal measurements and make trade off decisions based on signal budget and design requirements.
C202.3	Use hand calculations to solve propagation and termination problems on lossless and low-loss transmission lines for digital circuits.

C202.4	Design the physical layout of signal and return paths affect
C202.5	Apply various real time algorithms in building embedded systems
C203/ VL7014 IP Based VLSI Design	
C203.1	Examine the basic building blocks of large-scale digital integrated circuits
C203.2	Analysis the physical design process of VLSI design flow
C203.3	Implementation of special purpose structures for complex digital systems
C203.4	Optimize Routing, Clock Distributions and Floor-planning
C203.5	Design IC manufacturing and fabrication
C204/ VL7311 Project Work (Phase I)	
C204.1	An exposure to take up real time problems and challenges.
C204.2	Confidence to take up a project independently.
C204.3	An understanding of technical dissertation presentation and writing.
C204.4	An understanding of technical dissertation presentation and writing.
C204.5	Design engineering solutions to complex problems utilising a systems approach.
C205 / VL7411 Project Work (Phase II)	
C205.1	An exposure to take up real time problems and challenges.
C205.2	Confidence to take up a project independently.
C205.3	An understanding of technical dissertation presentation and writing.
C205.4	Confidence to take up a project independently.
C205.5	An understanding of technical dissertation presentation and writing.

S.No	Course Outcome											
	C101/ MA7157 Applied Mathematics for Electronics Engineers											
	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
C102/ VL7101 VLSI Signal Processing												
C102.1	3	2	2	-	-	2	-	-	-	3	-	2

C102.2	2	3	2	-	-	-	-	-	-	-	-	-
C102.3	3	2	2	-	-	-	-	-	-	2	-	-
C102.4	3	2	2	-	-	-	-	-	-	2	-	-
C102.5	3	2	2	-	-	-	-	-	-	2	-	-
C103/VL7102 VLSI Design Techniques												
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	2	-	-	-	-	-	-	-	-	-	3
C103.5	3	2	-	-	-	-	-	-	-	-	-	3
C104/ VL7103 Solid State Device Modeling and Simulation												
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
C105 / AP7008 DSP Integrated Circuits												
C105.1	3	2	-	-	-	-	-	-	-	-	-	-
C105.2	3	2	2	-	-	-	-	-	-	-	-	-
C105.3	3	2	2	-	-	-	-	-	-	-	-	-
C105.4	3	2	2	-	-	-	-	-	-	-	-	-
C105.5	3	2	2	-	-	-	-	-	-	-	-	-
C106 / VL7002 Security Solutions in VLSI												
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 / VL7111 VLSI Design Laboratory I												
C107.1	3	-	-	-	-	-	-	-	-	-	-	-
C107.2	3	3	3	2	-	-	-	-	-	-	-	-
C107.3	3	3	3	2	-	-	-	-	-	-	-	-
C107.4	3	3	3	2	-	-	-	-	-	-	-	-
C107.5	3	3	3	2	-	-	-	-	-	-	-	-
C108 / AP7201 Analysis and Design of Analog Integrated 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	2	2	-	-	-	-	-	3	2	2	3
C108.5	3	3	2	-	-	-	-	-	3	2	2	3
C109 / VL7201 CAD for VLSI Circuits												
C109.1	2	-	2	2	3	-	2	2	3	2	3	2
C109.2	2	-	2	3	3	-	2	2	2	2	3	2
C109.3	2	-	2	2	2	-	2	2	2	2	3	2

C203/ VL7014 IP Based VLSI Design												
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
C203.3	3	3	2	2	3	-	-	-	-	2	2	2
C203.3	3	2	2	2	2	-	-	-	-	2	2	2
C204/ VL7311 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
C205 / VL7411 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


PRINCIPAL

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

Regulation – 2017 - UG

YEAR/SEMESTER:II/III	
C201 / MA8352/LINEAR ALGEBRA AND PARTIAL DIFFERENTIAL EQUATIONS	
C201.1	Analyze Partial Differential Equations in various methods.
C201.2	Solving Fourier Series for different types of functions.
C201.3	Computing the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions
C201.4	Deduce the Gaussian function in Self reciprocal form using Fourier Transforms.
C201.5	Formation of finite difference method in Z-transforms.
C202/ EC8393/FUNDAMENTALS OF DATA STRUCTURES IN C	
C202.1	Do simple programs using basic concepts of C.
C202.2	Design programs with derived data type and files.
C202.3	Solve the problem by applying linear data structures.
C202.4	Finding solutions to various problems using FIFO& LIFO.
C202.5	Sort and search the data by applying various algorithms.
C202.6	Develop applications in C and Solve problems using various linear data structures algorithms.
C203/ EC8351/ELECTRONIC CIRCUITS- I	
C203.1	Acquire knowledge of Working principles, characteristics and applications of BJT and FET
C203.2	Acquire knowledge of Frequency response characteristics of BJT and FET amplifiers
C203.3	Analyze the performance of small signal BJT and FET amplifiers -single stage and multi stage amplifiers
C203.4	Apply the knowledge gained in the design of Electronic circuits
C203.5	Analyze Amplifier frequency response
C203.6	Acquire knowledge Cascade, Cascade configurations
C204/ EC8352/SIGNALS AND SYSTEMS	
C204.1	Categorize the signals based on their properties.
C204.2	Analyze the Continuous Time & Discrete Time systems.
C204.3	Apply Laplace and Fourier Transform to Analyze Continuous Time signals.
C204.4	Apply Laplace Transform and convolution integral to Analyze Continuous Time LTI systems.

C204.5	Apply Discrete Time Fourier Transform and Z-transform to Analyze Discrete Time LTI signals.
C204.6	Describe the mathematical modelling of DT systems.
C205 / EC8392/DIGITAL ELECTRONICS	
C205.1	Apply the laws of Boolean algebra to simplify circuits and Boolean algebra expressions
C205.2	analyze the different methods used for simplifications of Boolean expressions and digital logic families
C205.3	Design and implement Combinational circuits.
C205.4	Design and implement Sequential circuits
C205.5	Study the various types of memory devices and understand the concept PLD's
C205.6	Design and implement synchronous and asynchronous sequential circuits
C206 / EC8391/CONTROL SYSTEMS ENGINEERING	
C206.1	Analyze various types of feedback amplifiers.
C206.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.
C206.3	Demonstrate the feedback amplifiers using SPICE Tool.
C206.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.
C206.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.
C206.6	Demonstrate the voltage and current time base circuits using SPICE Tool.
C207/ EC8381/FUNDAMENTALS OF DATA STRUCTURES IN C LABORATORY	
C207.1	Do simple programs using basic concepts of C.
C207.2	Design programs with derived data type and files.
C207.3	Solve the problem by applying linear data structures.
C207.4	Finding solutions to various problems using FIFO& LIFO.
C207.5	Sort and search the data by applying various algorithms.
C207.6	Develop applications in C and Solve problems using various linear data structures algorithms.
C208 / EC8361/ANALOG AND DIGITAL CIRCUITS LABORATORY	
C208.1	Design and test BJT/JFET Amplifiers
C208.2	Differentiate cascade and cascade amplifiers
C208.3	Analyze the limitation in bandwidth of single stage and multistage amplifier
C208.4	Simulate and analyze amplifiers circuits using pspice

C208.5	Design and test the combinational digital logic circuits
C208.6	Design and test the sequential digital logic circuits
C209/ HS8381/ INTERPERSONAL SKILLS / LISTENING & SPEAKING	
C209.1	Take international examination such as IELTS and TOEFL
C209.2	Participate in Group Discussion.
C209.3	Successfully answer questions in Interviews.
C209.4	Make effective Presentations.
C209.5	Participate confidently and appropriately in conversations both formal and informal
YEAR/SEMESTER:II/IV	
C210 / MA8451/PROBABILITY AND RANDOM PROCESSES	
C210.1	The method of analyzing of feedback amplifiers
C210.2	Design LC and RC oscillators and analyze its performance
C210.3	Analyze performance of tuned amplifiers.
C210.4	The concept and working of wave shaping circuits
C210.5	To design and analyze the functions of multivibrators
C210.6	The fundamentals of blocking oscillators and time base generators
C211/ EC8452/ELECTRONIC CIRCUITS II	
C211.1	The method of analyzing of feedback amplifiers
C211.2	Design LC and RC oscillators and analyze its performance
C211.3	Analyze performance of tuned amplifiers.
C211.4	The concept and working of wave shaping circuits
C211.5	To design and analyze the functions of multivibrators
C211.6	The fundamentals of blocking oscillators and time base generators
C212/ EC8491/COMMUNICATION THEORY	
C212.1	Can be able to design different types of AM system
C212.2	Design angle modulated communication systems.
C212.3	Apply the concepts of Random Process to design a Communication systems
C212.4	Analyze the noise performance of AM and FM systems
C212.5	Able to understand various source coding technique
C212.6	Could analyze the different types of receivers.

C213 / EC8451/ELECTROMAGNETIC FIELDS	
C213.1	Analyze field potentials due to static electric fields
C213.2	Explain how materials affect electric fields
C213.3	Analyze field potentials due to static magnetic fields
C213.4	Explain how materials affect magnetic fields.
C213.5	Perform the relation between the fields under time varying Situations
C213.6	Discuss the principles of propagation of uniform plane waves
C214 / EC8453/LINEAR INTEGRATED CIRCUITS	
C214.1	Able to learn the basic building blocks of linear integrated circuits such as op-amps.
C214.2	Design linear and non linear applications of operational amplifiers
C214.3	Design applications using analog multiplier and PLL
C214.4	Design ADC and DAC using operational amplifiers
C214.5	Analyze special function ICs
C214.6	Generate waveforms using operational amplifiers Circuits
C215 / GE8291/ ENVIRONMENTAL SCIENCE AND ENGINEERING	
C215.1	Realize the importance of ecosystems and the importance of biodiversity.
C215.2	Describe about Environmental pollution and their effects.
C215.3	Design the techniques which require optimum use of natural resources in future.
C215.4	Understand that Environmental Pollution / problems cannot be solved by mere laws.
C215.5	Explain importance of women and child education and HIV /AIDS.
C216 / EC8461/CIRCUITS DESIGN AND SIMULATION LABORATORY	
C216.1	Analyze various types of feedback amplifiers.
C216.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.
C216.3	Demonstrate the feedback amplifiers using SPICE Tool.
C216.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.
C216.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.
C216.6	Demonstrate the voltage and current time base circuits using SPICE Tool.
C217 / EC8462/LINEAR INTEGRATED CIRCUITS LABORATORY	
C217.1	Design amplifiers, oscillators, D-A converters using operational amplifiers.
C217.2	Construct and design intergrater and differentiator circuit using IC 741

C217.3	Design filters using op-amp and performs an experiment on frequency response.
C217.4	Analyze the working of PLL and describe its application as a frequency multiplier
C217.5	Design DC power supply using ICs.
C217.6	Analyze the performance of filters, multivibrators, A/D converter and analog multiplier using SPICE
YEAR/SEMESTER:III/V	
C301 / EC8501/DIGITAL COMMUNICATION	
C301.1	Understanding The Principles Of Sampling & Quantization
C301.2	Knowing about The Various Waveform Coding Schemes
C301.3	Learn and analyze The Various Baseband Transmission Schemes
C301.4	Analyzing Digital Modulation Schemes
C301.5	Understanding The Various Band Pass Signalling Schemes
C301.6	Remembering The Fundamentals Of Channel Coding
C302 / EC8553/DISCRETE-TIME SIGNAL PROCESSING	
C302.1	Apply DFT and FFT for the analysis of digital signals & systems.
C302.2	Design an analog to digital IIR filters and its realization.
C302.3	Design of digital FIR filters using the windowing techniques and frequency sampling method and to realize their structures.
C302.4	Characterize finite Word length effect on filters.
C302.5	Implement the Multirate Filters and Apply Adaptive Filters to equalization
C302.6	An understanding of sampling conversion technique in signal processing and its applications.
C303 / EC8552/COMPUTER ARCHITECTURE AND ORGANIZATION	
C303.1	Use various metrics to calculate the performance of a computer system.
C303.2	Identify the addressing mode of instructions and to Determine which hardware blocks and control lines are used for specific instructions.
C303.3	Demonstrate how to add and multiply integers and floating -point numbers using two's complement and IEEE floating point representation.
C303.4	Analyze clock periods, performance, and instruction throughput of single-cycle, multi-cycle, and pipelined implementations of a simple instruction set.
C303.5	Detect pipeline hazards and identify possible solutions to those hazards
C303.6	Show how cache design parameters affect cache hit rate and to Map a virtual address into a physical address

C304/ EC8551/COMMUNICATION NETWORKS	
C304.1	Explain the components requirement of networks and link layer service
C304.2	Classify the Media Access Control Protocols and different Internetworking
C304.3	Demonstrate various types of routing techniques
C304.4	Outline the mechanisms involved in transport layer
C304.5	Experiment with different application layer protocols
C304.6	Analyze various routing algorithms
C305 / GE8077/TOTAL QUALITY MANAGEMENT	
C305.1	Describe the dimensional barrier regarding Quality.
C305.2	Summarize the Total quality principles.
C305.3	Demonstrate the tools utilization for quality improvement.
C305.4	Discover the new decision of principle in real time projects.
C305.5	Analyze the various types of techniques are used to measure quality.
C305.6	Apply the various quality systems in implementation of Total quality management.
C306/ OMD551/BASIC OF BIOMEDICAL INSTRUMENTATION	
C306.1	Analyze and evaluate the effect of different diagnostic and therapeutic methods,their riskpotential, physical principles, opportunities and possibilities for different medical procedures.
C306.2	Measure the various electrical signals from human system.
C306.3	Examine biochemical and various physiological information.
C306.4	Describe the working of units which will help to restore normal functioning.
C306.5	Understand the position of biomedical instrumentation in modern Hospital care
C306.6	Construct a system for telemedicine and electrical safety.
C307 / EC8562/DIGITAL SIGNAL PROCESSING LABORATORY	
C307.1	Demonstrate the simulation of DSP systems.
C307.2	Demonstrate the abilities of digital signal processor based DSP systems implementation.
C307.3	Analyze the finite word length effect on DSP systems.
C307.4	Demonstrate the applications of FFT to DSP systems.
C307.5	Analyze the MAC operation using various addressing modes on DSP systems.
C307.6	Apply the adaptive filters for various applications of DSP systems.

C308 / EC8561/COMMUNICATION SYSTEMS LABORATORY	
C308.1	Simulate & validate the various functional modules of a communication system
C308.2	Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes
C308.3	Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication system
C308.4	Simulation of Convolutional coding scheme
C308.5	Simulation of ASK, FSK and BPSK detection schemes
C308.6	Simulate end-to-end communication Link
C309/ EC8563/COMMUNICATION NETWORKS LABORATORY	
C309.1	Explain the components requirement of networks and link layer service
C309.2	Classify the Media Access Control Protocols and different Internetworking
C309.3	Demonstrate various types of routing techniques
C309.4	Outline the mechanisms involved in transport layer
C309.5	Experiment with different application layer protocols
C309.6	Analyze various routing algorithms
YEAR/SEMESTER:III/VI	
C310 / EC8691/MICROPROCESSORS AND MICROCONTROLLERS	
C310.1	Understanding the Architecture of 8086 microprocessor
C310.2	Realizing the design aspects of I/O and Memory Interfacing circuits.
C310.3	Applying the knowledge about Interfacing of microprocessors with supporting chips.
C310.4	Understanding the Architecture of 8051 microcontroller.
C310.5	Apply and design a microcontroller based system
C310.6	Analyze and learn Multiprocessor configurations, Introduction to advanced processors.
C311/ EC8095/VLSI DESIGN	
C311.1	Recollect all concepts of device characteristics of MOS and basic of Digital Electronics.
C311.2	Construct various types of digital circuits in different logic styles.
C311.3	Enumerate the various issues which has to be taken care off while designing a combinational or sequential circuits
C311.4	Link simple logic circuit to complex block of a processor

C311.5	Implementing strategies and basic architecture of leading FPGA and design steps.
C311.6	Familiarized with the steps of fabrication and verification of layout of the circuit.
C312 / EC8652/WIRELESS COMMUNICATION	
C312.1	Explain the Characteristics of fading in wireless channels
C312.2	Describe the fundamentals of Cellular Architecture
C312.3	Use various signaling schemes for wireless communication channels
C312.4	Compare the performance of channel using various propagation models
C312.5	Analyze the various mitigation techniques to address fading and interference in multipath propagation.
C312.6	Design MIMO Systems in fading and nonfading channels
C313/ MG8591/PRINCIPLES OF MANAGEMENT	
C313.1	Identifies the global context for taking managerial organization.
C313 .2	Predict the global opportunity that will impact the management of an organization.
C313 .3	Prepare the management principles into management practices.
C313 .4	Analyze the managerial problem with ethical practice standards.
C313 .5	Breakdown the managerial task executed in the variety of circumstances.
C313 .6	Identify the most effective Action to take in the specific situation of addressing issues.
C314 / EC8651/TRANSMISSION LINES AND RF SYSTEMS	
C314.1	Explain the characteristics of transmission lines and its losses
C314.2	Write about the standing wave ratio and input impedance in high frequency transmission lines
C314.3	Analyze impedance matching by stubs using smith charts
C314.4	Analyze the characteristics of TE and TM waves
C314.5	Design a RF transceiver system for wireless communication
C314.6	Explain the characteristics of transmission lines and its losses
C315 / EC8004/WIRELESS NETWORKS	
C315.1	Conversant with the latest 3G/4G networks and its architecture
C315.2	Design and implement wireless network environment for any application using latest wireless protocols and standards
C315.3	Ability to select the suitable network depending on the availability and requirement
C315.4	Implement different type of applications for smart phones and mobile devices with latest

	network strategies
C315.5	Analyze the latest wireless protocols for the problems associated with Wireless Networks.
C315.6	Interpret the latest 4G networks and its architecture.
C316 / EC8681/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	
C316.1	Understanding the Architecture of 8086 microprocessor
C316.2	Realizing the design aspects of I/O and Memory Interfacing circuits.
C316.3	Applying the knowledge about Interfacing of microprocessors with supporting chips.
C316.4	Understanding the Architecture of 8051 microcontroller.
C316.5	Apply and design a microcontroller based system
C316.1	Analyze and learn Multiprocessor configurations, Introduction to advanced processors.
C317 /EC8661/VLSI Design Laboratory	
C317.1	Recollect all concepts of device characteristics of MOS and basic of Digital Electronics.
C317.2	Construct various types of digital circuits in different logic styles.
C317.3	Enumerate the various issues which has to be taken care off while design a combinational or sequential circuits
C317.4	They can easily link simple logic circuit to complier block of a processor
C317.5	Implementing strategies and basic architecture of leading FPGA and design steps.
C317.6	Familiarized with the steps of fabrication and verification of layout of the circuit.
C318 /EC8611/Technical Seminar	
C318.1	Enrich the communication skills of the student technical topics of interest
C318.2	Familiarize the preparation of content of technical writing
C318.3	Enrich the presentations skills of the student technical topics of interest
C318.4	Participate confidently and appropriately in conversations both formal and informal
C318.5	Participate in technical group discussion.
C318.6	Participate in technical quiz programs
C319 /HS8581/PROFESSIONAL COMMUNICATION	
C319.1	Take international examination such as IELTS and TOEFL
C319.2	Participate in Group Discussion.
C319.3	Successfully answer questions in Interviews.
C319.4	Make effective Presentations.
C319.5	Participate confidently and appropriately in conversations both formal and informal

C319.6	Take international examination such as IELTS and TOEFL
YEAR/SEMESTER:IV/VII	
C401/EC8701/ANTENNAS AND MICROWAVE ENGINEERING	
C401.1	Apply the basic principles and evaluate antenna parameters and link power budgets
C401.2	Design and assess the performance of various antennas
C401.3	Design a microwave system given the application specifications
C401.4	Design a microwave system
C401.5	Design a various antennas
C402/EC8751/OPTICAL COMMUNICATION	
C402.1	Realize basic elements in optical fibers, different modes and configurations.
C402.2	Analyze the transmission characteristics associated with dispersion and polarization techniques.
C402.3	Design optical sources and detectors with their use in optical communication system.
C402.4	Construct fiber optic receiver systems, measurements and coupling techniques.
C402.5	Design optical communication systems and its networks.
C402.6	Analyze Optical power measurement-attenuation measurement-dispersion measurement
C403 / EC8791/EMBEDDED AND REAL TIME SYSTEMS	
C403.1	Describe the architecture and programming of ARM processor
C403.2	Outline the concepts of embedded systems
C403.3	Explain the basic concepts of real time operating system design
C403.4	Differentiate between the general purpose operating system and the real time operating system
C403.5	Explain the concept of design methodologies techniques for embedded system.
C403.6	Model real-time applications using embedded-system concepts
C404 / EC8702/AD HOC AND WIRELESS SENSOR NETWORKS	
C404.1	Know the basics of Ad hoc networks and Wireless Sensor Networks
C404.2	Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement
C404.3	Apply the knowledge to identify appropriate physical and MAC layer protocols
C404.4	Understand the transport layer and security issues possible in Ad hoc and sensor networks
C404.5	Be familiar with the OS used in Wireless Sensor Networks and build basic modules

C404.6	Apply Layer wise attacks in wireless sensor networks
C405 / EC8092/ADVANCED WIRELESS COMMUNICATION	
C404.1	Discuss the cellular system design and technical challenges.
C404.2	Analyze the Mobile radio propagation, fading, diversity concepts and the channel modeling.
C404.3	Analyze the design parameters, link design, smart antenna, beam forming and MIMO systems.
C404.4	Analyze Multiuser Systems, CDMA, WCDMA network planning and OFDM Concepts.
C404.5	Summarize the principles and applications of wireless systems and standards
C404.6	Appreciate the various methods for improving the data rate of wireless communication system
C406/ OIC751/TRANSDUCER ENGINEERING	
C406.1	Concept behind working of measurement systems and different types of sensors and transducers
C406.2	Sensor to measure various physical parameters used in Industry and normal measurement applications
C406.3	Sensor to measure various physical parameters used in Industry and normal measurement applications
C406.4	Working principle of resistive, inductive and capacitive transducers and their applications
C406.5	Understanding of thermocouples, piezoelectric and pyro-electric transducers and their applications
C406.6	Understanding of acoustic, optical sensors and other sensors and their applications.
C407 / EC8711/EMBEDDED LABORATORY	
C407.1	Write programs in ARM for a specific Application
C407.2	Interface memory and Write programs related to memory operations
C407.3	Interface A/D and D/A convertors with ARM system
C407.4	Analyze the performance of interrupt
C407.5	Write programs for interfacing keyboard, display and motor
C407.6	Formulate a mini project using embedded system
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
C408.2	Analyze the Eye Pattern, Pulse broadening of optical fiber and the impact on BER
C408.3	Estimate the Wireless Channel Characteristics and Analyze the performance of Wireless Communication System
C408.4	Understand the intricacies in Microwave System design
YEAR/SEMESTER:IV/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.
C409.2	Operate on images using the techniques of smoothing, sharpening and enhancement.
C409.3	Understand the restoration concepts and filtering techniques.
C409.4	Learn the basics of segmentation, features extraction, compression and recognition methods for color models.
C409.5	Use various coding techniques for image compression.
C409.6	Analyze various image descriptors and features of image representation techniques.
C410 / EC8094/SATELLITE COMMUNICATION	
C410.1	Analyze the satellite orbits
C410.2	Analyze the earth segment
C410.3	Analyze the satellite Link design
C410.4	Design various satellite applications
C410.5	Analyze the space segment
C411 /EC8811/PROJECT WORK	
C411.1	Demonstrate profound technical knowledge of the project.
C411.2	Identify a real world problem, review literature and suggest its solution.
C411.3	Demonstrate solutions to complex engineering problems utilizing a systems approach
C411.4	Provide solutions to meet the specified needs of the society.
C411.5	Create a system and validate its conformance
C411.6	Perform data analysis, interpret and provide valid conclusions.

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
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
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
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
C204.6	2	2	2	2	2	2	-	2	3	3	2	2
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
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
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
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
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

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
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
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	-
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
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
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
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
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

Third year												
C301	3	2	2	2	2	2	-	-	-	2	2	2
C302	3	2	2	2	2	2	-	-	-	2	2	2
C303	3	2	2	2	-	2	3	2	2	2	2	2
C304	3	2	2	2	-	-	-	-	-	2	2	2
C305	3	2	2	2	-	-	-	-	-	2	2	2
C306	3	2	2	2	-	-	-	-	-	2	2	2
C307	3	2	2	2	-	-	-	2	2	2	2	2

C308	-	-	-	-	2	-	-	-	3	3	2	3
C309	3	2	2	2	-	-	-	2	2	2	2	2
C310	3	2	2	-	-	2	-	-	-	2	-	2
C311	3	2	2	2	-	-	-	-	-	2	2	2
C312	3	2	2	2	2	-	-	-	-	2	2	2
C313	3	2	2	2	2	2	-	-	-	2	2	2
C314	3	2	2	2	-	-	-	-	-	2	2	2
C315	2	2	2	2	-	-	-	-	-	2	-	2
C316	3	2	2	2	-	-	-	2	2	2	2	2
C317	3	2	2	2	2	2	-	2	2	2	2	2
C318	3	2	2	2	2	-	-	-	3	3	2	2
C318	3	2	2	2	2	-	-	-	3	3	2	2
Final year												
C401	2	2	2	2	-	2	-	-	-	2	-	2
C402	2	2	2	2	-	2	-	-	-	2	2	2
C403	3	2	2	2	-	-	-	-	-	2	2	2
C404	-	-	-	-	-	2	-	3	2	2	2	2
C405	2	2	2	2	2	2	-	-	-	2	2	2
C406	3	2	2	2	2	2	-	-	-	2	2	2
C407	3	2	2	2	2	2	-	2	2	2	2	2
C408	3	3	2	2	2	2	-	-	2	3	2	3
C409	3	2	2	2	-	2	-	-	-	2	2	2
C410	2	2	2	2	-	-	-	-	-	2	2	2
C411	3	2	2	-	-	2	-	3	2	2	2	2

Regulation - 2017

M.E. - VLSI DESIGN

S.No	Course Outcome
YEAR/SEMESTER : I/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.
C101.2	.To learn the basics and gained the skill for specialized studies and research.
C101.3	.To exposed the basic characteristic features of a queuing system and acquire skills in analyzing queuing models.
C101.4	To understands the basic principles of fuzzy logic.
C101.5	Using discrete time Markov chains to model computer systems
C102/ AP5151/ADVANCED DIGITAL SYSTEM DESIGN	
C102.1	Analysis and Design of Synchronous and Asynchronous sequential machines
C102.2	Draw a ASM chart for digital designs
C102.3	Detect and diagnosis different faults in digital circuits
C102.4	Have knowledge of PLD"s and architecture of FPGA"s
C102.5	Design the digital systems through VHDL programming.
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.
C103.2	Discuss design methodology of arithmetic building block
C103.3	Analyze tradeoffs of the various circuit choices for each of the building block
C103.4	Discuss design sequential logic circuits
C103.5	Arithmetic Building Blocks And Memory Architectures
C104/ VL5191/ DSP INTEGRATED CIRCUITS	
C104.1	Implement various signal processing algorithms.
C104.2	Diagnose the design and methodologies in hardware and software design. Identify new developments in Application specific processors

C104.3	Implement various signal processing algorithms.
C104.4	Concept behind multi rate systems is understood
C104.5	Get familiar with the DSP processor architectures and how to perform synthesis of processing
C105 / VL5102 / CAD FOR VLSI CIRCUITS	
C105.1	Design advanced electronics systems
C105.2	Evaluate and analyze the systems in VLSI design environments.
C105.3	Apply advanced technical knowledge in multiple contexts
C105.4	Conduct an organized and systematic study on significant research topic within the field of VLSI and its allied field.
C105.5	Discuss the hardware models for high level synthesis
C106 / VL5103 / ANALOG IC DESIGN	
C106.1	Learn the basics of CMOS and BICMOS circuit techniques.
C106.2	Gain a well founded knowledge on filters and converters.
C106.3	Obtain knowledge on testability and VLSI interconnects.
C106.4	Grasp the concept of statistical modeling and simulation
C106.5	Gain knowledge analog filters and converters
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
C107.2	Perform Transient ,DC analysis and Power analysis of transistor level designs
C107.3	Have knowledge of hardware implementation of digital signal processing circuits
C107.4	Design a microcontroller based systems
C107.5	Analyze Stability, frequency response, and Noise in MOS amplifiers
YEAR/SEMESTER : I/II	
C108 / VL5201/ TESTING OF VLSI CIRCUITS	
C108.1	Prepare design for testability Discuss test algorithms
C108.2	Explain fault diagnosis
C108.3	Apply the concepts in testing which can help them design a better yield in IC design

C108.4	Understanding of the various fault diagnosis methods in logic systems
C108.5	Discuss algorithms for memory and logic circuits
C109 / VL5291/ VLSI SIGNAL PROCESSING	
C109.1	Ability to modify the existing or new DSP architectures suitable for VLSI.
C109.2	To learn performance optimization techniques in VLSI signal processing,
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
C109.4	Area reduction using folding techniques, Strategies for arithmetic implementation,
C109.5	Synchronous, wave, and asynchronous pipelining
C110 / VL5202/ LOW POWER VLSI DESIGN	
C110.1	Understand the concepts of low power design and physics of power dissipation.
C110.2	Develop logical level and circuit level power optimization techniques.
C110.3	Apply advanced techniques and special techniques for reducing power consumption
C110.4	Understanding of the synthesis and software design for low power
C110.5	Knowledge on low power design and power estimation techniques in CMOS circuits
C111 /VL5001 /DEVICE MODELING – I	
C111.1	Know about the basics of MOSFET device modeling and noise modeling.
C111.2	Understand and apply the concepts of noise modeling in system design
C111.3	Apply the mathematical techniques for device simulations
C111.4	Realize concepts about process variation and quality assurance
C111.5	To gain knowledge in arithmetic building blocks and memory architectures
C112/ DS5191/ DSP PROCESSOR ARCHITECTURE AND PROGRAMMING	
C112.1	Become Digital Signal Processor specialized engineer
C112.2	DSP based System Developer
C112.3	Analyze and learn to implement the signal processing algorithms in DSPs
C112.4	Recognize the fundamentals of fixed and floating point architectures of various DSPs
C112.5	Learn the architecture details and instruction sets of fixed and floating point DSPs
C113 / AP5191 /EMBEDDED SYSTEM DESIGN	
C113.1	Know about various Requirements, Specification and Architectural Design for

	Embedded system design process.
C113.2	Understand and apply interfacing concepts of SHARC and ARM processors.
C113.3	Realize concepts about various Embedded Network using I2C, CAN Bus and SHARC bus for industry based applications.
C113.4	Apply the programming skills for peripheral interfacing and real time applications..
C113.5	Apply the concepts of RTOS for real-time systems design.
C114/ VL5211 /VLSI DESIGN LABORATORY II	
C114.1	Have knowledge about digital system design and implementation in FPGAs
C114.2	Have analysis knowledge of various parameters by T-SPICE tool
C114.3	Design and implement the Embedded systems. CO4. Have knowledge of layout level design entries
C114.4	Use EDA tools like Cadence, Xilinx and Quartus
C114.5	Ability to design using FPGA/CPLD devices
C115/ CP5281 /TERM PAPER WRITING AND SEMINAR	
C115.1	Read and review the research articles and publish a technical Paper.
C115.2	Acquire practical knowledge within the chosen area of technology for project development
C115.3	Identify, analyze, formulate and handle programming with a comprehensive and systematic approach
C115.4	Generate a high level analysis document based on requirement specification
C115.5	Understand basics and importance of real time system
YEAR/SEMESTER : II/III	
C201/VL5301/ANALOG TO DIGITAL INTERFACES	
C201.1	Design Analog to Digital and Digital to Analog data converters based on data precision requirements
C201.2	Calibration techniques for achieving precision during data
C201.3	Digitization and enabling circuit architectures
C201.4	Analyze analog circuits
C201.5	Understand basics and importance of digital interfaces

C202 / AP5292/DIGITAL IMAGE PROCESSING	
C202.1	Discuss image enhancement techniques
C202.2	Explain color image processing
C202.3	Compare image compression schemes
C202.4	Exposure to video processing
C202.5	Exposure to various image processing compression techniques
C203/ VL5091/MEMS AND NEMS	
C203.1	Discuss micro sensors Explain micro actuators
C203.2	Outline nanosystems and Quantum mechanics
C203.3	Fabrication process of Microsystems.
C203.4	Knowledge on electrical and mechanical concepts of MEMS and on various types
C203.5	Introduction to optical and MEMS and various case studies
C204/VL5311/PROJECT WORK PHASE-I	
C204.1	Demonstrate a sound technical knowledge of their selected project topic.
C204.2	Undertake problem identification, formulation and solution.
C204.3	Design engineering solutions to complex problems utilising a systems approach.
C204.4	An understanding of technical dissertation presentation and writing.
C204.5	Design engineering solutions to complex problems utilising a systems approach.
YEAR/SEMESTER : II/IV	
C205/ VL5411/PROJECT WORK PHASE-II	
C205.1	Demonstrate a sound technical knowledge of their selected project topic.
C205.2	Undertake problem identification, formulation and solution.
C205.3	Design engineering solutions to complex problems utilizing a systems approach.
C205.4	Confidence to take up a project independently.
C205.5	An understanding of technical dissertation presentation and writing

S.No	Course Outcome											
	C101/ MA5152/ Applied Mathematics for Electronics Engineers											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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 A/ 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	-	-
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	-	-	-	-	-	-	-	-
YEAR/SEMESTER : I/II												
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
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
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
YEAR/SEMESTER : II/III												
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
YEAR/SEMESTER : II/IV												
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


PRINCIPAL

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

MECHANICAL ENGINEERING

Regulation – 2013 - UG

YEAR/SEMESTER : II/III	
C201/MA6351-TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	
C201.1	Analyze Partial Differential Equations in various methods .
C201.2	Solving Fourier Series for different types of functions.
C201.3	Computing the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions
C201.4	Deduce the Gaussian function in Self reciprocal form using Fourier Transforms.
C201.5	Formation of finite difference method in Z-transforms.
C202/CE6303-STRENGTH OF MATERIALS	
C202.1	Understand the concept of deformation due to different loading conditions.
C202.2	Understand the fundamentals of various stresses and strains in the structural member.
C202.3	Construct the shear force and bending moment diagram for load transferring mechanism in different beams.
C202.4	Apply the basic equations to design the shaft and helical springs.
C202.5	Determine the slope and deflection in beams using different methods.
C202.6	Design thin and thick cylinders subjected to internal and external pressures
C203/ME6301-ENGINEERING THERMODYNAMICS	
C203.1	Apply the basic concepts of thermodynamics for energy conversion phenomenon.
C203.2	Calculate thermal efficiency and coefficient of performance for heat engines, refrigerators and heat pumps.
C203.3	Evaluate the performance of steam power cycles.
C203.4	Derive simple thermodynamic relations of ideal and real gases.
C203.5	Calculate the properties of air vapor mixtures using psychrometrics
C203.6	Explain the performance of refrigeration systems and its environmental impacts.
C204/CE6451-FLUID MECHANICS AND MACHINERY	
C204.1	Apply the concept of fluid properties with their effects on fluid flow.
C204.2	Apply the concepts of general energy equations in fluid flow problems.
C204.3	Calculate the major and minor losses in flow through pipes.
C204.4	Apply the mathematical knowledge in boundary layer concepts.
C204.5	Understand the working principle of pumps and turbines.

C204.6	Analyze the various performance characteristics of pumps and turbines.
C205/ME6302-MANUFACTURING TECHNOLOGY – I	
C205.1	Understand the fundamentals of casting, Welding, Forging and Sheet metal process
C205.2	Understand the basic concepts of Fusion and Non-Fusion Welding process
C205.3	Identify the different defects which occur in welding and casting process.
C205.4	Explain the various forming operations can performed in sheet metal process
C205.5	Compute the casting allowances and time taken for solidification in the process
C205.6	Understand the concepts of thermo and thermo setting plastics used in plastic manufacturing components
C206/EE6351-ELECTRICAL DRIVES AND CONTROLS	
C206.1	Select the rating and classes of duty of machines for particular application.
C206.2	Explain the mechanical and braking characteristics of dc and ac machines.
C206.3	Describe the starting methods of both dc and ac machines.
C206.4	Clarify conventional and solid state speed control of dc drives.
C206.5	Enlighten the speed control of dc and ac drive by conventional and solid statemethods.
C206.6	Select the rating and classes of duty of machines for particular application.
C207/ME6311-MANUFACTURING TECHNOLOGY LABORATORY - I	
C207.1	Perform the taper turning operation in conventional lathe machine
C207.2	Perform the various thread operations for the given specification.
C207.3	Estimate the taper angle and machining time calculations in various machining operations.
C207.4	Perform the hexagonal bolts and square studs using shaper machine
C207.5	Calculate the eccentricity value to produce eccentric components
C207.6	Perform knurling operation to produce simple components in lathe.
C208/CE6461-FLUID MECHANICS AND MACHINERY LABORATORY	
C208.1	Recognize the minor losses in the pipes.
C208.2	Calculate the friction factor in pipes
C208.3	Determine the discharge coefficients for venture meter & Orificemeter
C208.4	Analyze the flow measurement by using flow measuring equipment
C208.5	Evaluate the performance of hydraulic turbines & pumps under different working

	conditions.
C208.6	Justify the fluid properties.
C209/EE6365-ELECTRICAL ENGINEERING LABORATORY	
C209.1	Perform the load test, OCC, load characteristics and speed control of DC shunt and DC series motor
C209.2	Perform the load test, OC and SC test on a single phase transformer
C209.3	Examine the regulation of an alternator by EMF and MMF methods
C209.4	Conduct the load test, speed control on various phase of induction motor
C209.5	Explore the DC and AC starters
YEAR/SEMESTER : II/IV	
C210/MA6452-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.
C210.2	Explain the concept of analysis of variance to Distinguish between one and two factor analysis of variance tests.
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.
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.
C210.5	Solving first order differential equations using various types of single and multi step methods.
C210.6	Applying finite difference methods for solving II order differential equations.
C211/ME6401-KINEMATICS OF MACHINERY	
C211.1	Understand the various kinematic concepts in different mechanisms.
C211.2	Analyze the velocity and acceleration of links at any point in various mechanisms.
C211.3	Construct the various cam profiles with follower motion.
C211.4	Solve the problems on gear and gear trains
C211.5	Recognize the effect of friction in different friction drives.

C211.6	Design the various motion transmission elements with their relative movements.
C212/ME6402-MANUFACTURING TECHNOLOGY– II	
C212.1	Understand the constructional features of lathe and special machines
C212.2	Explain the various mechanism used in special machines
C212.3	Develop the part program in CNC milling and turning centers.
C212.4	Compute the tool nomenclature and tool life calculation in metal cutting process
C212.5	Select the suitable grinding wheels used in different grinding process
C212.6	Identify the suitable process to manufacture simple engineering components
C213/ME6403-ENGINEERING MATERIALS AND METALLURGY	
C213.1	Describe the various phase diagram for engineering metals
C213.2	Identify the different types of engineering materials in industrial applications
C213.3	Understand the various isothermal transformation in heat treatment process
C213.4	Understand the effects of alloying elements on Ferrous and Non-Ferrous materials.
C213.5	Discuss the properties and applications of Polymers, Ceramics and Composite materials
C213.6	Identify the mechanical properties and deformation using various mechanical testing methods.
C214/GE6351-ENVIRONMENTAL SCIENCE AND ENGINEERING	
C214.1	Realize the importance of ecosystems and the importance of biodiversity.
C214.2	Describe about Environmental pollution and their effects.
C214.3	Design the techniques which require optimum use of natural resources in future.
C214.4	Understand that Environmental Pollution / problems cannot be solved by mere laws.
C214.5	Explain importance of women and child education and HIV /AIDS.
C214.6	establish the social awareness and to recreate the polluted environment to a blissful and harmless environment to the human beings
C215/ME6404-THERMAL ENGINEERING	
C215.1	Calculate the efficiency of various gas power cycles.
C215.2	Compute the performance test on IC engines
C215.3	Estimate the concert of single and multi stage steam turbines
C215.4	Apply the thermodynamic concepts in various thermal systems.
C215.5	Calculate the properties of air vapor mixtures using psychrometrics

C215.6	Explain the importance of efficient energy utilization in engineering practices and its impact on the environment
C216/ME6411-MANUFACTURING TECHNOLOGY LABORATORY–II	
C216.1	Calculate the various cutting forces using tool dynamometers.
C216.2	Generate gears using gear hobbing machines
C216.3	Perform surface finish operations using surface grinding and cylindrical grinding machines.
C216.4	Develop CNC part programming for turning and milling operations
C216.5	Perform contour milling operation in various milling machine.
C216.6	Perform gear cutting operation using milling machine.
C217/ME6412-THERMAL ENGINEERING LABORATORY - I	
C217.1	Sketch the valve timing and port timing diagram for single cylinder four stroke diesel engines and two stroke petrol engine.
C217.2	Calculate the mechanical efficiency of four stroke SI engine by mores test.
C217.3	Evaluate the performance of four stroke single cylinder CI engine and predict actual diagram
C217.4	Evaluate the performance of steam generator and steam turbines.
C217.5	Determine the flash and fire point of various fuels and lubricants
C217.6	Determine the fuel properties using redwood / say bolt viscometer
C218/CE6315-STRENGTH OF MATERIALS LABORATORY	
C218.1	Determine the elastic constants by using tensile and torsion test machine for mild steel (MS) specimen
C218.2	Conduct hardness test for different metals and carry out impact test for MS specimen
C218.3	Determine deflection in beams
C218.4	Identify modes of failure in components
C218.5	Determine safe working stresses for components
C218.6	Calculate the property of springs.
YEAR/SEMESTER : III/V	
C301/ME6501-COMPUTER AIDED DESIGN	
C301.1	Understand the concept of 2D and 3D transformations and clipping algorithm.
C301.2	Understand the fundamentals of parametric curves, surfaces and Solids

C301.3	Apply the visual realism by using different algorithm
C301.4	Apply the mass property calculations on different parts
C301.5	Understand the different types of CAD Standards.
C301.6	Apply the various CAD algorithms in the area of product design and development.
C302/ME6502-HEAT AND MASS TRANSFER	
C302.1	Understand the basic laws of heat transfer in the engineering systems.
C302.2	Compute the temperature distribution in steady and unsteady state heat conduction.
C302.3	Evaluate the heat transfer coefficient for convection
C302.4	Calculate the phase change properties and the heat exchanger performance by varying the methods
C302.5	Calculate radiation heat transfer between black and gray body surfaces.
C302.6	Analyze the diffusion and convective mass transfer occurring in different applications
C303/ME6503-DESIGN OF MACHINE ELEMENTS	
C303.1	Understand the basic design parameters of various machine elements
C303.2	Understand the various stresses induce due to different loading conditions.
C303.3	Apply the basic design procedure to design the shafts, bearing and couplings.
C303.4	Apply the basic design steps to design the temporary and permanent joints.
C303.5	Design the various energy storing elements and engine components.
C303.6	Design the various machine members as per standard design catalogues.
C304/ME6404-METROLOGY AND MEASUREMENTS	
C304.1	Discuss the concepts of measurements in metrological instruments.
C304.2	Explain the principles of linear and angular measuring instruments for industrial applications.
C304.3	Understand the concepts of various computer aided inspection tools.
C304.4	Explain the different form measurements in industry.
C304.5	Understand the basic concepts of interchangeability and selective assembly.
C304.6	Understand the working principle of measuring equipments to measure intensive and extensive properties.

C305/ME6405-DYNAMICS OF MACHINES	
C305.1	Understand the various force-motion relationships in different mechanisms
C305.2	Apply the principles of statics and dynamics to machinery
C305.3	Analyze the balancing masses in the rotating and reciprocating machines
C305.4	Solve the free vibration problems in longitudinal, transverse and torsional systems
C305.5	Apply the basic principles to reduce the undesirable effects of forced vibrations
C305.6	Apply the principles in mechanisms used for speed control and stability control
C306/GE6075-PROFESSIONAL ETHICS IN ENGINEERING	
C306.1	Understand the core values that shape the ethical behavior of an engineer.
C306.2	Recognize the awareness on professional ethics with stress management.
C306.3	Understand the basic perception of various moral issues in ethical theories.
C306.4	Manipulate the various social issues in engineering field.
C306.5	Discover the professional responsibilities of an engineering safety issues.
C306.6	Solve the several of global issues by ethical principles.
C307/ME6511-DYNAMICS LABORATORY	
C307.1	Understand the concept of differential gear trains and kinematic links
C307.2	Evaluate the frequency of the vibrating system
C307.3	Analyze the controlling mechanisms
C307.4	Analyze the balancing masses in the rotating and reciprocating machines
C307.5	Determination of mass moment of inertia for different component
C307.6	Use the measuring devices for dynamic testing
C308/ME6512-THERMAL ENGINEERING LABORATORY-II	
C308.1	Conduct a test to find thermal conductivity of various engineering materials
C308.2	Measure the heat transfer rate in natural and forced convection environment
C308.3	Evaluate radiation heat transfer between black body surfaces and grey body surfaces
C308.4	Analyze the effectiveness of parallel and counter flow heat exchanger
C308.5	Compare the performance of theoretical and experimental refrigeration and air conditioning systems.
C308.6	Evaluate the performance of air compressors.

C309/ME6513-METROLOGY AND MEASUREMENTS LABORATORY	
C309.1	Ability to handle different measurement tools and perform measurements in quality impulsion
C309.2	Identify various gauges for measurement.
C309.3	Demonstrate linear and angular measurement using precision instruments.
C309.4	Apply the load cell to measure the force and torque
C309.5	Use thermocouple and comparator for taking measurement.
C309.6	Measure bore diameter using Bore gauge, telescope gauge and surface roughness using Surface Finish Measuring Equipment
YEAR/SEMESTER : III/VI	
C310/ME6601-DESIGN OF TRANSMISSION SYSTEMS	
C310.1	Select the materials for mechanical transmission system.
C310.2	Apply the design knowledge to design the various flexible drives.
C310.3	Apply the design concepts to design the parallel axis mating gear.
C310.4	Apply the basic design steps to design the perpendicular and oblique axis mating gear.
C310.5	Apply the design procedure to design the gear box.
C310.6	Apply the design principles to design the various friction drives.
C311/MG6851-PRINCIPLES OF MANAGEMENT	
C311.1	Identifies the global context for taking managerial organization.
C311.2	Predict the global opportunity that will impact the management of an organization.
C311.3	Prepare the management principles into management practices.
C311.4	Analyze the managerial problem with ethical practice standards.
C311.5	Breakdown the managerial task executed in the variety of circumstances.
C311.6	Identify the most effective Action to take in the specific situation of addressing issues.
C312/ME6602-AUTOMOBILE ENGINEERING	
C312.1	Understand the automobile components and its function
C312.2	Understand the auxiliary systems
C312.3	Understand the vehicle structure
C312.4	Understand the recent trends in alternate fuels and automobile safety system.

C312.5	Understand the future developments in the automobile industry
C312.6	Understand the environmental implications of automobile emissions
C313/ME6603-FINITE ELEMENT ANALYSIS	
C313.1	Solve Boundary value problems in structural and non-structural application.
C313 .2	Apply finite element methods in one dimensional Problem.
C313 .3	Solve dynamic problem by using finite element procedure.
C313 .4	Apply finite element technique in two dimensional scalar Problems.
C313 .5	Apply finite element method in two dimensional Vector problems.
C313 .6	Apply finite element procedure to solve problems on iso-parametric element
C314/ME6604-GAS DYNAMICS AND JET PROPULSION	
C314.1	Understand the one - dimensional steady compressible fluid flow
C314.2	Calculate the adiabatic and isentropic properties in various regions of flow
C314.3	Calculate the adiabatic and isentropic properties in various conditions of flows during friction and heat transfer
C314.4	Analyze the flow properties on shock waves in various flow regions
C314.5	Apply the gas dynamics principles in the jet and space propulsion
C314.6	Interpret the differences in Pressure, Temperature and Mach number in various regions of fluid flow
C315/ME6004-UNCONVENTIONAL MACHINING PROCESSES	
C315.1	Summarize the needs and classification of unconventional machining process.
C315.2	Understand the various input and output parameters that influence in the performance.
C315.3	Explain the working principle of energy based machining process.
C315.4	Compare the merits, demerits and applications of unconventional machining process
C315.5	Identify the electric discharge machining and wire cut electric discharge machining process.
C315.6	Select the material and tool with respect to the process.
C316/ME6611-C.A.D. / C.A.M. LABORATORY	
C316.1	Construct the machine drawing as per standards, Fits and Tolerances
C316.2	Identify proper computer graphics techniques for 2D drawing and 3D model.
C316.3	Develop the part model for any machine components by using modeling software.

C316.4	Develop the assembly model for machine components by using modeling software.
C316.5	Develop the program code for CNC machines for simulation
C316.1	Machine the components by using CNC machine
C317/ME6612-DESIGN AND FABRICATION PROJECT	
C317.1	Identify problems with their technical skills
C317.2	Design a product as per requirement
C317.3	Develop the detailed drawing for fabrication product with latest tool
C317.4	Create prototype of a working model
C317.5	Contribute effectively as an individual and as a member in a team
C317.6	Develop detailed report for new product
C318/GE6563-COMMUNICATION SKILLS - LABORATORY BASED	
C318.1	Take international examination such as IELTS and TOEFL
C318.2	Participate in Group Discussion.
C318.3	Successfully answer questions in Interviews.
C318.4	Make effective Presentations.
C318.5	Participate confidently and appropriately in conversations both formal and informal
YEAR/SEMESTER : IV/VII	
C401/ME6701-POWER PLANT ENGINEERING	
C401.1	Understand the layout and components of various power plants
C401.2	Understand different types of cycles and it's efficiencies in various power plants.
C401.3	Understand the sources and concepts of renewable energy
C401.4	Calculate the factors associated with power plant economics.
C401.5	Select the suitability of site for a power plant.
C401.6	Identify safety aspects of power plants
C402/ME6702-MECHATRONICS	
C402.1	Explain Mechatronics design process
C402.2	Choose sensors based on their working principle.
C402.3	Discuss the working of various actuators.
C402.4	Discuss the architecture of microprocessors and microcontroller.
C402.5	Explain the architecture of PLC and contrast it from PC and relay systems.
C402.6	Discuss the various case studies.

C403/ME6703-COMPUTER INTEGRATED MANUFACTURING SYSTEMS	
C403.1	Understand the basic concepts of CAD,CAM and Production systems
C403.2	Compute the production performance in different mathematical models.
C403.3	Explain the various aspects of planning and control systems in industry.
C403.4	Understand the concepts of part classification and coding system in cellular manufacturing.
C403.5	Describe the components of automated material handling and storage system.
C403.6	Explain the various robot configurations, motion and industrial applications.
C404/GE6757-TOTAL QUALITY MANAGEMENT	
C404.1	Describe the dimensional barrier regarding Quality.
C404.2	Summarize the Total quality principles.
C404.3	Demonstrate the tools utilization for quality improvement.
C404.4	Discover the new decision of principle in real time projects.
C404.5	Analyze the various types of techniques are used to measure quality.
C404.6	Apply the various quality systems in implementation of Total quality management.
C405/ME6005-PROCESS PLANNING AND COST ESTIMATION	
C404.1	Introduce the process planning concepts to make cost estimation for various products after process planning
C404.2	Identify the documents required for the process planning
C404.3	Calculate the material cost of a product.
C404.4	Explain the various associated in manufacturing shops.
C404.5	Calculate the machining time for various machining operations.
C404.6	Analyzing and approving subcontractor's capabilities and their quality plans.
C406/ME6010-ROBOTICS	
C406.1	Evaluate the difference between various robot drives systems and grippers.
C406.2	Apply the basic concepts of industrial robots and their applications in industries.
C406.3	Summarize and compare various robot sensors with its perception principles.
C406.4	Explain the implementations of robots in industries.
C406.5	Identify the position of end effect or and joint angles using Direct and Inverse kinematics.
C406.6	Recognize the responsibility of engineers for the safety issues.

C407/ME6711-SIMULATION AND ANALYSIS LABORATORY	
C407.1	Simulate the dynamic system by using MAT lab software.
C407.2	Simulate the mechanism by using multi-body dynamic software
C407.3	Analyze the stresses for trusses and beams using analysis software
C407.4	Analyze the stresses for axis-symmetric components by using analysis software
C407.5	Analyze the response of vibrating system analysis software
C407.6	Analyze the Thermal stress and heat transfer analysis of plates and cylindrical shells analysis software
C408/ME6712-MECHATRONICS LABORATORY	
C408.1	Simulate Hydraulic, Pneumatic circuit using software tool.
C408.2	Simulate Electro pneumatic circuits using trainer kits.
C408.3	Design and test various fluid power circuits using software tool
C408.4	Interface stepper motor with 8051 micro controller
C408.5	Conduct experiments using servo controller and stepper motor.
C408.6	Conduct experiments PID Controller interfacing
C409/ME6713-COMPREHENSION	
C409.1	Apply the knowledge in multi-disciplinary areas of Mechanical Engineering
C409.2	Solve all problems related to core subjects and concepts.
C409.3	Interpret on analytical problem solving methods.
C409.4	Obtain the concept of group dynamics and participative learning.
C409.5	Create or Design a solution for an innovative engineering problem.
C409.6	Obtain leadership qualities in turn may turn out into socially responsible personality.
YEAR/SEMESTER : IV/VIII	
C410/MG6863-ENGINEERING ECONOMICS	
C410.1	Apply the basic concepts of economics in the cost associated problems.
C410.2	Analyze make or buy decisions considering the value of the product in process control.
C410.3	Identify the time value of money based on the concept of value engineering.
C410.4	Apply the formulas of interest, Depreciation, Inflation calculations using cash flow diagrams in real time problems.
C410.5	Estimate the economic life of an asset for replacement or buying a new product.

C410.6	Evaluate economically the alternatives to select the best alternative.
C411/ME6016-ADVANCED I.C. ENGINES	
C411.1	Understand the various types of I.C. Engines and its Cycles of operation
C411.2	Understand the performance parameters in IC Engines
C411.3	Recognize the causes of emission
C411.4	Estimate the engines performance with alternative fuels
C411.5	Understand the environmental and social impact of IC Engines
C411.6	Understand the methods for reduction of exhaust emissions
C412/IE6605-PRODUCTION PLANNING AND CONTROL	
C402.1	Understand the production planning processes to convert the raw material into finished product.
C402.2	Prepare the production planning activities chart for work study to reduce the production time.
C402.3	Improve the market sale of existing product by changing the product planning
C402.4	Select the suitable process planning for manufacturing of a product.
C402.5	Analyze the production schedule for the given product.
C402.6	Analyze the inventory for a new product with help of latest software.
C413/ME6811-PROJECT WORK	
C413.1	Identify real world problems of core engineering and related systems
C413.2	Formulate new set of problems
C413.3	Take on with industrial changes
C413.4	Evaluate to obtain solution for problems in mechanical engineering systems
C413.5	Adapt to work as a team for the successful completion of the project
C413.6	Document preparation and communication very clearly

C304.5	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C304.6	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C305/ ME6405-DYNAMICS OF MACHINES														
C305.1	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C305.2	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C305.3	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C305.4	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C305.5	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C305.6	3	3	2	2	-	-	-	-	-	-	-	-	3	2
C306/ GE6075-PROFESSIONAL ETHICS IN ENGINEERING														
C306.1	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C306.2	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C306.3	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C306.4	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C306.5	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C306.6	2	-	-	-	-	-	3	3	-	-	-	-	2	2
C307 ME6511-/DYNAMICS LABORATORY														
C307.1	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C307.2	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C307.3	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C307.4	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C307.5	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C307.6	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C308/ ME6512-THERMAL ENGINEERING LABORATORY-II														
C308.1	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C308.2	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C308.3	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C308.4	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C308.5	3	2	-	2	-	-	2	-	-	-	-	-	3	2
C308.6	3	2	-	2	-	-	2	-	-	-	-	-	3	2

C313.2	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C313.3	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C313.4	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C313.5	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C313.6	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C314 / ME6604-GAS DYNAMICS AND JET PROPULSION														
C314.1	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C314.2	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C314.3	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C314.4	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C314.5	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C314.6	3	3	-	-	-	-	-	-	-	-	-	-	3	2
C315 / ME6004-UNCONVENTIONAL MACHINING PROCESSES														
C315.1	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C315.2	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C315.3	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C315.4	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C315.5	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C315.6	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C316/ ME6611-C.A.D. / C.A.M. LABORATORY														
C316.1	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C316.2	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C316.3	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C316.4	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C316.5	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C316.6	3	3	3	-	3	-	-	-	-	-	-	-	3	3
C317/ME6612-DESIGN AND FABRICATION PROJECT														
C317.1	3	3	3	3	3	2	2	2	2	3	3	3	3	3
C317.2	3	3	3	3	3	2	2	2	2	3	3	3	3	3
C317.3	3	3	3	3	3	2	2	2	2	3	3	3	3	3
C317.4	3	3	3	3	3	2	2	2	2	3	3	3	3	3

C317.5	3	3	3	3	3	2	2	2	2	3	3	3	3	3
C317.6	3	3	3	3	3	2	2	2	2	3	3	3	3	3
C318/GE6563-COMMUNICATION SKILLS - LABORATORY BASED														
C318.1	3	3	2	2	2	3	2	2	2	3	3	-	2	2
C318.2	3	3	2	2	2	3	2	2	2	3	3	-	2	2
C318.3	3	3	2	2	2	3	2	2	2	3	3	-	2	2
C318.4	3	3	2	2	2	3	2	2	2	3	3	-	2	2
C318.5	3	3	2	2	2	3	2	2	2	3	3	-	2	2
C318.6	3	3	2	2	2	3	2	2	2	3	3	-	2	2
C401/ME6701-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/ME6702-MECHATRONICS														
C402.1	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C402.2	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C402.3	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C402.4	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C402.5	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C402.6	3	2	-	2	-	-	-	-	-	-	-	-	3	2
C403/ME6703-COMPUTER INTEGRATED MANUFACTURING SYSTEMS														
C403.1	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C403.2	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C403.3	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C403.4	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C403.5	3	-	-	-	2	3	2	-	-	-	-	-	3	2
C403.6	3	-	-	-	2	3	2	-	-	-	-	-	3	2

C408.3	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C408.4	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C408.5	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C408.6	3	2	2	2	2	-	-	-	-	-	-	-	3	-
C409/ME6713-COMPREHENSION														
C409.1	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C409.2	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C409.3	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C409.4	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C409.5	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C409.6	3	2	-	-	-	-	-	-	-	-	2	-	3	2
C410/MG6863-ENGINEERING ECONOMICS														
C410.1	3	3	-	-	-	-	-	-	-	-	3	-	3	2
C410.2	3	3	-	-	-	-	-	-	-	-	3	-	3	2
C410.3	3	3	-	-	-	-	-	-	-	-	3	-	3	2
C410.4	3	3	-	-	-	-	-	-	-	-	3	-	3	2
C410.5	3	3	-	-	-	-	-	-	-	-	3	-	3	2
C410.6	3	3	-	-	-	-	-	-	-	-	3	-	3	2
C411/ME6016-ADVANCED I.C. ENGINES														
C411.1	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C411.2	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C411.3	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C411.4	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C411.5	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C411.6	3	-	-	-	-	-	-	-	-	-	-	-	3	2
C412/IE6605-PRODUCTION PLANNING AND CONTROL														
C412.1	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C412.2	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C412.3	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C412.4	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C412.5	3	3	2	-	2	-	-	-	-	-	2	-	3	3

C412.6	3	3	2	-	2	-	-	-	-	-	2	-	3	3
C413/ME6811-PROJECT WORK														
C413.1	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C413.2	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C413.3	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C413.4	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C413.5	3	3	3	3	3	2	3	2	3	3	3	3	3	3
C413.6	3	3	3	3	3	2	3	2	3	3	3	3	3	3

Regulation - 2013 - PG

M.E. – MANUFACTURING ENGINEERING

YEAR/SEMESTER : I/I	
S.No	Course Outcome
C101/ MA7165-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.
C101.2	Find marginal, conditional distribution, statistical average for the standard probability function.
C101.3	For the standard probability function, find the marginal, conditional distribution, statistical average.
C101.4	Find the M.L.E. and fit curves and regression lines using the least squares principle.
C101.5	Small and large samples should be identified, and hypothesis testing should be used.
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.
C102/MF7101- ADVANCED MATERIALS TECHNOLOGY	
C102.1	Ability to teach students about the Strengthening mechanisms, work hardening, solid solutioning, grain boundary strengthening, poly phase mixture, precipitation
C102.2	Understanding the concept of Griffith's theory, stress intensity factor and fracture toughness, Toughening mechanisms, Ductile, brittle transition in steel, High temperature fracture, creep
C102.3	Be able to made research on the case studies in materials selection with relevance to aero, auto, ,marine, machinery and nuclear applications.
C102.4	Ability to teach students about the Dual phase steels, High strength low alloy (HSLA) steel, Transformation induced plasticity (TRIP) Steel, Maraging steel, Nitrogen steel
C102.5	Understanding the basic concept of Advanced structural ceramics, WC, TIC, TaC,

	Al ₂ O ₃ , SiC, Si ₃ N ₄ CBN and diamond
C103/MF7102 – AUTOMATED COMPUTER INTEGRATED MANUFACTURING SYSTEMS	
C103.1	To achieve useful research results in the field of computer-assisted manufacturing.
C103.2	Make use of your skills to create programming techniques.
C103.3	Use of this expertise to make computer-aided planning more practical
C103.4	For a typical production system, design automated material handling and storage systems.
C103.5	Create a cellular manufacturing device and a manufacturing cell.
C104/ MF7103-MICRO MANUFACTURING	
C104.1	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.
C104.2	To disseminate information on micromachining using beam energy.
C104.3	to gain knowledge of the nano polishing process used on micro machined components
C104.4	To gain a better understanding of the micro forming and welding processes
C104.5	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
C105/MF7104-ROBOT DESIGN AND PROGRAMMING	
C105.1	Evaluate the difference between various robot drives systems and grippers.
C105.2	Apply the basic concepts of industrial robots and their applications in industries.
C105.3	Summarize and compare various robot sensors with its perception principles.
C105.4	Explain the implementations of robots in industries.
C105.5	Identify the position of end effect or and joint angles using Direct and Inverse kinematics.
C106/MF7003-ADVANCES IN CASTING & WELDING (Elective-I)	
C106.1	Understanding of casting style
C106.2	Understanding of casting metallurgy
C106.3	Understanding of current casting and foundry layout patterns

C106.4	Understanding of welding metallurgy and architecture
C106.5	Understanding of welding most current patterns
C107/ MF5111-CAD/CAM LAB	
C107.1	In sketcher mode, create complex geometries of system components.
C107.2	Ability to use modeling software to build 2D and 3D part models.
C107.3	Create complex engineering assemblies using acceptable assembly constraints.
C107.4	Ability to Understand the CNC Control in Modern Manufacturing System.
C107.5	Ability to Prepare CNC Part Programming and Produce
YEAR/SEMESTER : I/II	
C110/MF7201- 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
C110.2	Ability to approach and solve linear equations in organizational research problems that apply to real-world engineering problems.
C110.3	Ability to approach and solve non-linear equations of operational research problems that are relevant to real-world engineering business problems.
C110.4	Ability to solve various experimental experiments using various optimization methods in order to achieve the best objective function value.
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.
C111/MF7202- MANUFACTURING METROLOGY AND QUALITY ENGINEERING	
C111.1	Understanding of the different Laser Metrology measurement technologies And usage of Precision Instruments
C111.2	Understanding the concept of Co-Ordinate Measuring System
C111.3	Understanding the concept of OPTO Electronic and vision system
C111.4	Understanding the concept of quality in manufacturing and design engineering
C111.5	Understanding the concept quality management system and continuous improvement
C112/ MF7203-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
C112.2	Understanding of the different bulk forming processes that are used
C112.3	Ability to teach students about the various sheet metal forming processes that are used
C112.4	Awareness of powder metallurgy techniques and special forming processes is transferable.
C112.5	Understanding of surface treatment for different processes
C113/MF7204- MEMS AND NANOTECHNOLOGY	
C113.1	Ability to teach students about the historical development of properties, design and fabrication of Micro Electro Mechanical Systems (MEMS)
C113.2	Understanding the concept of Photolithography, photo resist applications, light sources, ion implantation, diffusion–Oxidation - thermal oxidation, silicon dioxide, chemical vapour deposition, sputtering
C113.3	Be able to identify the types of Sensors and its classification, signal conversion ideal characterization of sensors micro actuators, mechanical sensors
C113.4	Ability to teach students about the Classification of nano structures and the Effects of nano scale dimensions on various properties
C113.5	Understanding the basic concept of Nano-processing systems, Nano measuring systems and analytical imaging techniques.
C114/ME7009-NON DESTRUCTIVE EVALUATION (NDT) (Elective-II)	
C114.1	Be able to List and define different defects that occur in welding shown through Non-Destructive Examination/Destructive Testing.
C114.2	Be able to identify the types of equipment used for each Non-Destructive and Destructive Examination
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
C114.4	Be able to go to specific Code, Standard, or Specification related to each testing method
C114.5	Have the knowledge and essential skills to identify strengths and weaknesses in materials used in fabrication

C115/MF7010-LEAN MANUFACTURING (Elective-III)	
C115.1	The student must have a clear understanding of manufacturing production, classification, and lean manufacturing techniques
C115.2	Understanding of the fundamental concepts of job requirements, 5S, and layouts in production and productive maintenance
C115.3	Ability to comprehend the JIT and Kanban implementation approaches with a pull method
C115.4	Understanding of the Autonomy and Poke Yoke Processes in Lean Implementation
C115.5	The student is familiar with a variety of quality principles as well as a structured planning approach
C116/MF5211-AUTOMATION AND METAL FORMING LABORATORY	
C116.1	Ability to design and implement pneumatic circuits using trainer kits
C116.2	Understanding of metal forming techniques and the evaluation of associated parameters
C116.3	Ability to use hydro-pneumatic software to plan and conduct pneumo-hydraulic circuits
C116.4	Ability to assess and understand material strain hardening
C116.5	Understanding of sheet metal formability and shaping techniques
YEAR/SEMESTER : II/III	
C201/MF5014-MANUFACTURING MANAGEMENT (Elective-IV)	
C201.1	The student must have a basic understanding of manufacturing plant layout, classification, and material handling techniques.
C201.2	Understanding of the fundamental concepts of motion economy, as well as the tools and methods used in work studies and measurements
C201.3	Understanding of process planning and forecasting models is a must
C201.4	Understanding of project management and scheduling methods
C201.5	Personnel management and marketing methods have been studied and understood by the student.
C202/MF5072-RESEARCH METHODOLOGY (Elective-V)	
C202.1	Understand some basic concepts of research and its methodologies
C202.2	Identify appropriate research topics

C202.3	Select and define appropriate research problem and parameters
C202.4	Prepare a project proposal, write a research report and thesis, write a research proposal (grants)
C202.5	organize and conduct research (advanced project) in a more appropriate manner
C203/MF5016-MATERIAL TESTING & CHARACTERIZATION TECHNIQUES (Elective-VI)	
C203.1	To determine the grain size and classify the crystal structure.
C203.2	Students will be able to learn about electron microscopic characterization techniques.
C203.3	Chemical and thermal analysis approaches include the ability to comprehend their working concepts and instrumentation. The characterization analysis must be deciphered
C203.4	The aim of this course is to learn how to perform mechanical testing under static loading and to recognize the various testing codes for metallic and composite materials
C203.5	Mechanical research under complex loading conditions: ability to comprehend
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
C204.2	Review the literature to find differences and describe the work's goals and scop
C204.3	Create and incorporate new social-benefit concepts
C204.4	Analyze and explain the findings in order to draw sound conclusions
C204.5	Restructure procedures with a focus on culture, the community, and ethics
YEAR/SEMESTER : II/IV	
C210/MF5411-PROJECT PHASE - II	
C210.1	Determine a subject in advanced Manufacturing Engineering. Determine experimental methods and materials
C210.2	Review the literature to find differences and describe the work's goals and scope
C210.3	Restructure procedures with a focus on culture, the community, and ethics
C210.4	Create and incorporate new social-benefit concepts
C210.5	Analyze and explain the findings in order to draw sound conclusions

Course Outcome	Programme Outcomes I & II YEAR PG SUBJECTS												PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C101/ MA7165-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/MF7101- ADVANCED MATERIALS TECHNOLOGY														
C102.1	2	2	-	-	-	-	-	-	-	-	-	-	3	2
C102.2	2	2	-	-	-	-	-	-	-	-	-	-	3	2
C102.3	2	2	-	-	-	-	-	-	-	-	-	-	3	2
C102.4	2	3	-	-	-	-	-	-	-	-	-	-	3	2
C102.5	2	3	-	-	-	-	-	-	-	-	-	-	2	2
C103/MF7102 – AUTOMATED 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/ MF7103-MICRO MANUFACTURING														
C104.1	3	3	2	-	-	-	-	-	-	-	-	-	2	2
C104.2	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C104.3	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C104.4	3	2	-	-	-	-	-	-	-	-	-	-	3	2
C104.5	3	3	-	-	-	-	-	-	-	-	-	-	3	3

C105/MF7104-ROBOT DESIGN AND PROGRAMMING														
C105.1	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C105.2	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C105.3	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C105.4	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C105.5	3	2	-	-	-	-	-	-	-	-	-	-	2	2
C106/MF7003-ADVANCES IN CASTING & WELDING (Elective-I)														
C106.1	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C106.2	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C106.3	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C106.4	2	2	-	-	-	-	-	-	-	-	-	-	2	2
C106.5	2	2	-	-	-	-	-	-	-	-	-	-	2	2
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/MF7201- 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/MF7202- MANUFACTURING METROLOGY AND QUALITY ENGINEERING														
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/ MF7203-THEORY OF METAL FORMING														

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 (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														
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
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


PRINCIPAL

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

Regulation– 2017 - UG

YEAR/SEMESTER : II/III	
C201/MA8353-TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	
C201.1	Analyze Partial Differential Equations in various methods.
C201.2	Solving Fourier Series for different types of functions.
C201.3	Computing the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions
C201.4	Deduce the Gaussian function in Self reciprocal form using Fourier Transforms.
C201.5	Formation of finite difference method in Z-transforms.
C202/ME8391-ENGINEERING THERMODYNAMICS	
C202.1	Apply the basic concepts of thermodynamics for energy conversion phenomenon.
C202.2	Calculate thermal efficiency and coefficient of performance for heat engines, refrigerators and heat pumps.
C202.3	Evaluate the performance of steam power cycles.
C202.4	Derive simple thermodynamic relations of ideal and real gases.
C202.5	Calculate the properties of air vapor mixtures using psychometrics
C202.6	Explain the performance of refrigeration systems and its environmental impacts.
C203/CE8394-FLUID MECHANICS AND MACHINERY	
C203.1	Apply the concept of fluid properties with their effects on fluid flow.
C203.2	Apply the concepts of general energy equations in fluid flow problems.
C203.3	Calculate the major and minor losses in flow through pipes.
C203.4	Apply the mathematical knowledge in boundary layer concepts.
C203.5	Understand the working principle of pumps and turbines.
C203.6	Analyze the various performance characteristics of pumps and turbines.
C204/ME8351-MANUFACTURING TECHNOLOGY - I	
C204.1	Understand the fundamentals of casting, Welding, Forging and Sheet metal process
C204.2	Understand the basic concepts of Fusion and Non-Fusion Welding process
C204.3	Identify the different defects which occur in welding and casting process.
C204.4	Explain the various forming operations can performed in sheet metal process
C204.5	Compute the casting allowances and time taken for solidification in the process

C204.6	Understand the concepts of thermo and thermo setting plastics used in plastic manufacturing components
C205/EE8353-ELECTRICAL DRIVES AND CONTROLS	
C205.1	Select the rating and classes of duty of machines for particular application.
C205.2	Explain the mechanical and braking characteristics of dc and ac machines.
C205.3	Describe the starting methods of both dc and ac machines.
C205.4	Clarify conventional and solid state speed control of dc drives.
C205.5	Enlighten the speed control of dc and ac drive by conventional and solid state methods.
C205.6	Select the rating and classes of duty of machines for particular application.
C206/ME8361-MANUFACTURING TECHNOLOGY LABORATORY - I	
C206.1	Perform the taper turning operation in conventional lathe machine
C206.2	Perform the various thread operations for the given specification.
C206.3	Estimate the taper angle and machining time calculations in various machining operations.
C206.4	Perform the hexagonal bolts and square studs using shaper machine
C206.5	Calculate the eccentricity value to produce eccentric components
C207/ME8381-COMPUTER AIDED MACHINE DRAWING	
C207.1	Construct the machine drawing as per standards, Fits and Tolerances
C207.2	Identify proper computer graphics techniques for 2D drawing and 3D model.
C207.3	Develop the part model for any machine components by using modeling software.
C207.4	Develop the assembly model for machine components by using modeling software.
C207.5	Develop the program code for CNC machines for simulation
C207.6	Machine the components by using CNC machine
C208/EE8361-ELECTRICAL ENGINEERING LABORATORY	
C208.1	Perform the load test, OCC, load characteristics and speed control of DC shunt and DC series motor
C208.2	Perform the load test, OC and SC test on a single phase transformer
C208.3	Examine the regulation of an alternator by EMF and MMF methods
C208.4	Conduct the load test, speed control on various phase of induction motor
C208.5	Explore the DC and AC starters

C208.6	Perform the load test, OCC, load characteristics and speed control of DC shunt and DC series motor
C209/HS8381-INTERPERSONAL SKILLS / LISTENING & SPEAKING	
C209.1	Take international examination such as IELTS and TOEFL
C209.2	Participate in Group Discussion.
C209.3	Successfully answer questions in Interviews.
C209.4	Make effective Presentations.
C209.5	Participate confidently and appropriately in conversations both formal and informal
YEAR/SEMESTER : II/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.
C210.2	Explain the concept of analysis of variance to Distinguish between one and two factor analysis of variance tests.
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.
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.
C210.5	Solving first order differential equations using various types of single and multi step methods.
C210.6	Applying finite difference methods for solving II order differential equations.
C211/ME8492-KINEMATICS OF MACHINERY	
C211.1	Understand the various kinematic concepts in different mechanisms.
C211.2	Analyze the velocity and acceleration of links at any point in various mechanisms.
C211.3	Construct the various cam profiles with follower motion.
C211.4	Solve the problems on gear and gear trains
C211.5	Recognize the effect of friction in different friction drives.
C211.6	Design the various motion transmission elements with their relative movements.

C212/ME8451-MANUFACTURING TECHNOLOGY– II	
C212.1	Understand the constructional features of lathe and special machines
C212.2	Explain the various mechanism used in special machines
C212.3	Develop the part program in CNC milling and turning centers.
C212.4	Compute the tool nomenclature and tool life calculation in metal cutting process
C212.5	Select the suitable grinding wheels used in different grinding process
C212.6	Identify the suitable process to manufacture simple engineering components
C213/ME8491-ENGINEERING METALLURGY	
C213.1	Describe the various phase diagram for engineering metals
C213.2	Identify the different types of engineering materials in industrial applications
C213.3	Understand the various isothermal transformation in heat treatment process
C213.4	Understand the effects of alloying elements on Ferrous and Non-Ferrous materials.
C213.5	Discuss the properties and applications of Polymers, Ceramics and Composite materials
C213.6	Identify the mechanical properties and deformation using various mechanical testing methods.
C214/ME8395-STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS	
C214.1	Understand the concept of deformation due to different loading conditions.
C214.2	Understand the fundamentals of various stresses and strains in the structural member.
C214.3	Construct the shear force and bending moment diagram for load transferring mechanism in different beams.
C214.4	Apply the basic equations to design the shaft and helical springs.
C214.5	Determine the slope and deflection in beams using different methods.
C214.6	Design thin and thick cylinders subjected to internal and external pressures
C215/ME8493-THERMAL ENGINEERING-I	
C215.1	Calculate the efficiency of various gas power cycles.
C215.2	Compute the performance test on IC engines
C215.3	Estimate the concert of single and multi stage steam turbines
C215.4	Apply the thermodynamic concepts in various thermal systems.
C215.5	Calculate the properties of air vapor mixtures using psychometrics

C215.6	Explain the importance of efficient energy utilization in engineering practices and its impact on the environment
C216/ME8462-MANUFACTURING TECHNOLOGY LABORATORY-II	
C216.1	Calculate the various cutting forces using tool dynamometers.
C216.2	Generate gears using gear hobbling machines
C216.3	Perform surface finish operations using surface grinding and cylindrical grinding machines.
C216.4	Develop CNC part programming for turning and milling operations
C216.5	Perform contour milling operation in various milling machine.
C216.6	Perform gear cutting operation using milling machine.
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
C217.2	Conduct hardness test for different metals and carry out impact test for MS specimen
C217.3	Determine deflection in beams
C217.4	Determine the discharge coefficients for venture meter & Orifice meter
C217.5	Analyze the flow measurement by using flow measuring equipment
C217.6	Evaluate the performance of hydraulic turbines & pumps under different working conditions.
C218/HS8461-ADVANCED READING AND WRITING	
C218.1	Make effective Presentations.
C218.2	Participate in Group Discussion.
C218.3	Successfully answer questions in Interviews.
C218.4	Take international examination such as IELTS and TOEFL
C218.5	Participate confidently and appropriately in conversations both formal and informal
C218.6	Take international examination such as IELTS and TOEFL
YEAR/SEMESTER : III/V	
C301/ME8595-THERMAL ENGINEERING-II	
C301.1	Understand the basic design parameters of various machine elements
C301.2	Understand the various stresses induce due to different loading conditions.

C301.3	Apply the basic design procedure to design the shafts, bearing and couplings.
C301.4	Apply the basic design steps to design the temporary and permanent joints.
C301.5	Design the various energy storing elements and engine components.
C301.6	Design the various machine members as per standard design catalogues.
C302/ME8593-DESIGN OF MACHINE ELEMENTS	
C302.1	Understand the basic laws of heat transfer in the engineering systems.
C302.2	Compute the temperature distribution in steady and unsteady state heat conduction.
C302.3	Evaluate the heat transfer coefficient for convection
C302.4	Calculate the phase change properties and the heat exchanger performance by varying the methods
C302.5	Calculate radiation heat transfer between black and gray body surfaces.
C302.6	Analyze the diffusion and convective mass transfer occurring in different applications
C303/ME8501-METROLOGY AND MEASUREMENTS	
C303.1	Discuss the concepts of measurements in metrological instruments.
C303.2	Explain the principles of linear and angular measuring instruments for industrial applications.
C303.3	Understand the concepts of various computer aided inspection tools.
C303.4	Explain the different form measurements in industry.
C303.5	Understand the basic concepts of interchangeability and selective assembly.
C303.6	Understand the working principle of measuring equipments to measure intensive and extensive properties.
C304/ME8594-DYNAMICS OF MACHINES	
C304.1	Understand the various force-motion relationships in different mechanisms
C304.2	Apply the principles of statics and dynamics to machinery
C304.3	Analyze the balancing masses in the rotating and reciprocating machines
C304.4	Solve the free vibration problems in longitudinal, transverse and torsional systems
C304.5	Apply the basic principles to reduce the undesirable effects of forced vibrations
C304.6	Apply the principles in mechanisms used for speed control and stability control
C305/OIM552-LEAN MANUFACTURING (Open Elective-1)	
C305.1	Understand the concept of conventional manufacturing and Lean manufacturing

C305.2	Understand the cellular manufacturing theory, and uses of Lean production tools such as JIT, Kuban & TPM
C305.3	Apply the 'set up time' reduction principles and implementation of TQM & 5S principles
C305.4	Analyze the statistical consideration, variability reduction and design of experiment using SIC-ZIGMA implementation
C305.5	Understand the waste in any process, minimize waste through proper kaizens and other methods
C305.6	To improve the organization's efficiency through the use of LM tools
C306/ME8511-KINEMATICS AND DYNAMICS LABORATORY	
C306.1	Understand the concept of differential gear trains and kinematic links
C306.2	Evaluate the frequency of the vibrating system
C306.3	Analyze the controlling mechanisms
C306.4	Analyze the balancing masses in the rotating and reciprocating machines
C306.5	Determination of mass moment of inertia for different component
C306.6	Use the measuring devices for dynamic testing
C307/ME8512-THERMAL ENGINEERING LABORATORY	
C307.1	Conduct a test to find thermal conductivity of various engineering materials
C307.2	Measure the heat transfer rate in natural and forced convection environment
C307.3	Evaluate radiation heat transfer between black body surfaces and grey body surfaces
C307.4	Analyze the effectiveness of parallel and counter flow heat exchanger
C307.5	Compare the performance of theoretical and experimental refrigeration and air conditioning systems.
C307.6	Evaluate the performance of air compressors.
C308/ME8513-METROLOGY AND MEASUREMENTS LABORATORY	
C308.1	Ability to handle different measurement tools and perform measurements in quality impulsion
C308.2	Identify various gauges for measurement.
C308.3	Demonstrate linear and angular measurement using precision instruments.
C308.4	Apply the load cell to measure the force and torque
C308.5	Use thermocouple and comparator for taking measurement.

C308.6	Measure bore diameter using Bore gauge, telescope gauge and surface roughness using Surface Finish Measuring Equipment
YEAR/SEMESTER : III/VI	
C310/ME8651-DESIGN OF TRANSMISSION SYSTEMS	
C310.1	Select the materials for mechanical transmission system.
C310.2	Apply the design knowledge to design the various flexible drives.
C310.3	Apply the design concepts to design the parallel axis mating gear.
C310.4	Apply the basic design steps to design the perpendicular and oblique axis mating gear.
C310.5	Apply the design procedure to design the gear box.
C310.6	Apply the design principles to design the various friction drives.
C311/ME8691-COMPUTER AIDED DESIGN AND MANUFACTURING	
C311.1	Understand the concept of 2D and 3D transformations and clipping algorithm.
C311.2	Understand the fundamentals of parametric curves, surfaces and Solids
C311.3	Apply the visual realism by using different algorithm
C311.4	Apply the mass property calculations on different parts
C311.5	Understand the different types of CAD Standards.
C311.6	Apply the various CAD algorithms in the area of product design and development.
C312/ME8693-HEAT AND MASS TRANSFER	
C312.1	Understand the basic laws of heat transfer in the engineering systems.
C312.2	Compute the temperature distribution in steady and unsteady state heat conduction.
C312.3	Evaluate the heat transfer coefficient for convection
C312.4	Calculate the phase change properties and the heat exchanger performance by varying the methods
C312.5	Calculate radiation heat transfer between black and gray body surfaces.
C312.6	Analyze the diffusion and convective mass transfer occurring in different applications
C313/ME8692-FINITE ELEMENT ANALYSIS	
C313.1	Solve Boundary value problems in structural and non-structural application.
C313 .2	Apply finite element methods in one dimensional Problem.
C313 .3	Solve dynamic problem by using finite element procedure.

C313 .4	Apply finite element technique in two dimensional scalar Problems.
C313 .5	Apply finite element method in two dimensional Vector problems.
C313 .6	Apply finite element procedure to solve problems on iso-parametric element
C314/ME8694-HYDRAULICS AND PNEUMATICS	
C314.1	Explain the Fluid power and operation of different types of pumps.
C314.2	Summarize the features and functions of Hydraulic motors, actuators and Flow control valves
C314.3	Explain the different types of Hydraulic circuits and systems
C314.4	Explain the working of different pneumatic circuits and systems
C314.5	Summarize the various trouble shooting methods and applications of hydraulic and pneumatic systems.
C314.6	Design the hydraulic circuit for multi-functional operations
C315/ME8091-AUTOMOBILE ENGINEERING (Professional Elective-1)	
C315.1	To understand basics of Automobile Engineering, conversant with drive train and transmission.
C315.2	To make the student conversant with Axles, Steering System & Tyre Wheel assembly and to understand basic and types of steering system
C315.3	To make the student conversant with Suspension and Brake System
C315.4	To make the student conversant with Vehicle Performance & Safety also able to understand basics of Vehicle maintenance.
C315.5	To make the student conversant with Vehicle Maintenance & Garage Practice also able to perform garage practices
C315.6	To understand the various Automobile Electrical System and latest advancement in vehicles
C316/ME8681-C.A.D. / C.A.M. LABORATORY	
C316.1	Construct the machine drawing as per standards, Fits and Tolerances
C316.2	Identify proper computer graphics techniques for 2D drawing and 3D model.
C316.3	Develop the part model for any machine components by using modeling software.
C316.4	Develop the assembly model for machine components by using modeling software.
C316.5	Develop the program code for CNC machines for simulation
C316.1	Machine the components by using CNC machine

C317/ME8682-DESIGN AND FABRICATION PROJECT	
C317.1	Identify problems with their technical skills
C317.2	Design a product as per requirement
C317.3	Develop the detailed drawing for fabrication product with latest tool
C317.4	Create prototype of a working model
C317.5	Contribute effectively as an individual and as a member in a team
C317.6	Develop detailed report for new product
C318/HS8581-PROFESSIONAL COMMUNICATION	
C318.1	Take international examination such as IELTS and TOEFL
C318.2	Participate in Group Discussion.
C318.3	Successfully answer questions in Interviews.
C317.4	Make effective Presentations.
C318.5	Participate confidently and appropriately in conversations both formal and informal
C318.6	Take international examination such as IELTS and TOEFL
YEAR/SEMESTER : IV/VII	
C401/ME8792-POWER PLANT ENGINEERING	
C401.1	Understand the layout and components of various power plants
C401.2	Understand different types of cycles and it's efficiencies in various power plants.
C401.3	Understand the sources and concepts of renewable energy
C401.4	Calculate the factors associated with power plant economics.
C401.5	Select the suitability of site for a power plant.
C401.6	Identify safety aspects of power plants
C402/ME8793-PROCESS PLANNING AND COST ESTIMATION	
C402.1	Introduce the process planning concepts to make cost estimation for various products after process planning
C402.2	Identify the documents required for the process planning
C402.3	Calculate the material cost of a product.
C402.4	Explain the various associated in manufacturing shops.
C402.5	Calculate the machining time for various machining operations.
C402.6	Analyzing and approving subcontractor's capabilities and their quality plans.

C403/ME8791-MECHATRONICS	
C403.1	Explain mechatronics design process
C403.2	Choose sensors based on their working principle.
C403.3	Discuss the working of various actuators.
C403.4	Discuss the architecture of microprocessors and microcontroller.
C403.5	Explain the architecture of PLC and contrast it from PC and relay systems.
C403.6	Discuss the various case studies.
C404/OIE751 ROBOTICS (Open Elective-2)	
C404.1	To develop the student's knowledge in various robot structures and their workspace
C404.2	To develop student's skills in performing spatial transformations associated with rigid body motions
C404.3	To develop student's skills in perform kinematics analysis of robot systems
C404.4	To provide the student with knowledge of the singularity issues associated with the operation of robotic systems
C404.5	To provide the student with some knowledge and analysis skills associated with trajectory planning
C404.6	To provide the student with some knowledge and skills associated with robot control
C405/GE 8077 TOTAL QUALITY MANAGEMENT (Professional Elective-2)	
C405.1	Describe the dimensional barrier regarding Quality.
C405.2	Summarize the Total quality principles.
C405.3	Demonstrate the tools utilization for quality improvement.
C405.4	Discover the new decision of principle in real time projects.
C405.5	Analyze the various types of techniques are used to measure quality.
C405.6	Apply the various quality systems in implementation of Total quality management.
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
C406.2	The student shall be able to set various process parameters and control the NDT process for the desired output parameters
C406.3	The student shall be able to find the internal flaws in the material by NDT and take

	measures to eliminate them
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.
C406.5	The student shall be competent enough to make use of modern tools and softwares for analyzing and solving real life problems
C406.6	The student shall be able to introduce environmental friendly solutions to achieve organizational sustainability
C407/ME8711-SIMULATION AND ANALYSIS LABORATORY	
C407.1	Simulate the dynamic system by using MAT lab software.
C407.2	Simulate the mechanism by using multi-body dynamic software
C407.3	Analyze the stresses for trusses and beams using analysis software
C407.4	Analyze the stresses for axis-symmetric components by using analysis software
C407.5	Analyze the response of vibrating system analysis software
C407.6	Analyze the Thermal stress and heat transfer analysis of plates and cylindrical shells analysis software
C408/ME8781-MECHATRONICS LABORATORY	
C408.1	Simulate Hydraulic, Pneumatic circuit using software tool.
C408.2	Simulate Electro pneumatic circuits using trainer kits.
C408.3	Design and test various fluid power circuits using software tool
C408.4	Interface stepper motor with 8051micro controller
C408.5	Conduct experiments using servo controller and stepper motor.
C408.6	Conduct experiments PID Controller interfacing
C409/ME8712-TECHNICAL SEMINAR	
C409.1	Enrich the communication skills of the student technical topics of interest
C409.2	Familiarize the preparation of content of technical writing
C409.3	Enrich the presentations skills of the student technical topics of interest
C409.4	Participate confidently and appropriately in conversations both formal and informal
C409.5	Participate in technical group discussion.
C409.6	Participate in technical quiz programs

YEAR/SEMESTER : IV/VIII	
C410/ME8591-PRINCIPLES OF MANAGEMENT	
C410.1	Identifies the global context for taking managerial organization.
C410.2	Predict the global opportunity that will impact the management of an organization.
C410.3	Prepare the management principles into management practices.
C410.4	Analyze the managerial problem with ethical practice standards.
C410.5	Breakdown the managerial task executed in the variety of circumstances.
C410.6	Identify the most effective Action to take in the specific situation of addressing issues.
C411/IE8693-PRODUCTION PLANNING AND CONTROL (Professional Elective– IV)	
C411.1	Understand the production planning processes to convert the raw material into finished product.
C411.2	Prepare the production planning activities chart for work study to reduce the production time.
C411.3	Improve the market sale of existing product by changing the product planning
C411.4	Select the suitable process planning for manufacturing of a product.
C411.5	Analyze the production schedule for the given product.
C411.6	Analyze the inventory for a new product with help of latest software.
C412/ME8811-PROJECT WORK	
C412.1	Identify real world problems of core engineering and related systems
C412.2	Formulate new set of problems
C412.3	Take on with industrial changes
C412.4	Evaluate to obtain solution for problems in mechanical engineering systems
C412.5	Adapt to work as a team for the successful completion of the project
C412.6	Document preparation and communication very clearly

Course Outcome	Programme Outcomes II to IV YEAR SUBJECTS												PSOs	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
C201/MA8353-TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS														
C201.1	3	2	3	2	2	-	-	-	-	-	-	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
C310.4	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C310.5	3	3	-	2	2	-	-	-	-	-	-	-	3	2
C310.6	3	3	-	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

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
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
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
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

Regulation – 2017 - PG

M.E. – MANUFACTURING ENGINEERING

YEAR/SEMESTER : I/I	
S.No	Course Outcome
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.
C101.2	Find marginal, conditional distribution, statistical average for the standard probability function.
C101.3	For the standard probability function, find the marginal, conditional distribution, statistical average.
C101.4	Find the M.L.E. and fit curves and regression lines using the least squares principle.
C101.5	Small and large samples should be identified, and hypothesis testing should be used.
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.
C102/MF5101-ADVANCES IN MANUFACTURING TECHNOLOGY	
C102.1	To generate useful test results in the machining of a variety of materials.
C102.2	Create hybrid machining techniques using this experience.
C102.3	Use of this experience to solve problems on the shop floor.
C102.4	To gain a better understanding of special machining methods, unconventional machining processes, and micromachining.
C102.5	To gain a better understanding of nano fabrication and rapid prototyping.
C103/MF5102 - COMPUTER INTEGRATED MANUFACTURING SYSTEMS	
C103.1	To achieve useful research results in the field of computer-assisted manufacturing.
C103.2	Make use of your skills to create programming techniques.
C103.3	Use of this expertise to make computer-aided planning more practical
C103.4	For a typical production system, design automated material handling and storage systems.
C103.5	Create a cellular manufacturing device and a manufacturing cell.

C104/MF5103-ADVANCES IN CASTING & WELDING	
C104.1	Understanding of casting style
C104.2	Understanding of casting metallurgy
C104.3	Understanding of current casting and foundry layout patterns
C104.4	Understanding of welding metallurgy and architecture
C104.5	Understanding of welding most current patterns
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
C105.3	Understanding of machining thermal dimensions
C105.4	Awareness of tool materials, tool life, and tool wear
C105.5	Understanding of machining wear mechanisms and chatter
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.
C106.2	To disseminate information on micromachining using beam energy.
C106.3	to gain knowledge of the nano polishing process used on micro machined components
C106.4	To gain a better understanding of the micro forming and welding processes
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
C107/ MF5111-CAD/CAM LAB	
C107.1	In sketcher mode, create complex geometries of system components.
C107.2	Ability to use modeling software to build 2D and 3D part models.
C107.3	Create complex engineering assemblies using acceptable assembly constraints.
C107.4	Ability to Understand the CNC Control in Modern Manufacturing System.
C107.5	Ability to Prepare CNC Part Programming and Produce
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
C110.2	Ability to approach and solve linear equations in organizational research problems that apply to real-world engineering problems.
C110.3	Ability to approach and solve non-linear equations of operational research problems that are relevant to real-world engineering business problems.
C110.4	Ability to solve various experimental experiments using various optimization methods in order to achieve the best objective function value.
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.
C111/CM5251- ADVANCES IN METROLOGY AND INSPECTION	
C111.1	Ability to comprehend metrology principles and measurement errors
C111.2	Understanding of the applications of surface roughness calculation
C111.3	Ability to comprehend the fundamentals of interferometer and its significance.
C111.4	Understanding of measurement devices and laser metrology
C111.5	Image processing capability for metrology
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
C112.2	Understanding of the different bulk forming processes that are used
C112.3	Ability to teach students about the various sheet metal forming processes that are used
C112.4	Awareness of powder metallurgy techniques and special forming processes is transferable.
C112.5	Understanding of surface treatment for different processes
C113/MF5203-TOOLING FOR MANUFACTURING	
C113.1	To achieve practical research results in the form of tool design for various manufacturing processes.
C113.2	Ability to demonstrate how metal removal procedures are carried out using tooling
C113.3	Ability to demonstrate how metal forming processes use tooling

C113.4	To gain a better understanding of the tooling used in metal casting and joining processes
C113.5	To be able to state the state of the art in manufacturing and inspection tooling
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.
C114.2	Be able to identify the types of equipment used for each Non-Destructive and Destructive Examination
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
C114.4	Be able to go to specific Code, Standard, or Specification related to each testing method
C114.5	Have the knowledge and essential skills to identify strengths and weaknesses in materials used in fabrication
C115/MF5071-LEAN MANUFACTURING (Professional Elective-III)	
C115.1	The student must have a clear understanding of manufacturing production, classification, and lean manufacturing techniques
C115.2	Understanding of the fundamental concepts of job requirements, 5S, and layouts in production and productive maintenance
C115.3	Ability to comprehend the JIT and Kanab implementation approaches with a pull method
C115.4	Understanding of the Autonomy and Poke Yoke Processes in Lean Implementation
C115.5	The student is familiar with a variety of quality principles as well as a structured planning approach
C116/MF5211-AUTOMATION AND METAL FORMING LABORATORY	
C116.1	Ability to design and implement pneumatic circuits using trainer kits
C116.2	Understanding of metal forming techniques and the evaluation of associated parameters
C116.3	Ability to use hydro-pneumatic software to plan and conduct pneumo-hydraulic

	circuits
C116.4	Ability to assess and understand material strain hardening
C116.5	Understanding of sheet metal formability and shaping techniques
C117/MF5212-TECHNICAL SEMINAR	
C117.1	Develop reading, writing, comprehension, and presentation skills for research papers
C117.2	To assess the breadth of knowledge and coverage of recent areas of manufacturing engineering research
C117.3	To assess the consistency of presentation content (PPT/OHP) on recent manufacturing engineering research topics
C117.4	To improve the student's communication skills by presenting topics on recent engineering/technology advances
C117.5	To establish an analysis of current research problems and developments
YEAR/SEMESTER : II/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.
C201.2	Understanding of the fundamental concepts of motion economy, as well as the tools and methods used in work studies and measurements
C201.3	Understanding of process planning and forecasting models is a must
C201.4	Understanding of project management and scheduling methods
C201.5	Personnel management and marketing methods have been studied and understood by the student.
C202/MF5072-RESEARCH METHODOLOGY (Professional Elective-V)	
C202.1	Understand some basic concepts of research and its methodologies
C202.2	Identify appropriate research topics
C202.3	Select and define appropriate research problem and parameters
C202.4	Prepare a project proposal, write a research report and thesis, write a research proposal (grants)
C202.5	organize and conduct research (advanced project) in a more appropriate manner

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
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


PRINCIPAL

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M.I.E.T. ENGINEERING COLLEGE
SUNDUR, TIRUCHIRAPPALLI-620 007.

**MASTER OF
BUSINESS
ADMINISTRATION**

Regulation – 2013

SEMESTER – I

S.No	Course Outcome
C101-BA7101 Principles of Management	
C101.1	Understanding the origin of management thoughts and the factors that influences Management practices
C101.2	Knowing the types of planning strategies and the managerial which were required for an effective management
C101.3	Understanding the HR practices which are essential for functioning of an organization and the criteria necessary for organization functions
C101.4	Possessing the concept of communication and the methods of utilizing the Communication for managerial effectiveness
C101.5	Remembering the concepts and types of control techniques and how it influences the production processes
C102- BA 7102 Statistics for Management	
C102.1	Understand the fundamental knowledge of probability and standard distributions.
C102.2	Interpret the concepts of sampling distribution and estimation.
C102.3	Apply the testing of hypotheses for small and large samples in real life problems
C102.4	Apply the non parametric methods for rapid or preliminary data analysis.
C102.5	Understand the concepts of correlation and regression.
C103- BA7103 Economic Analysis for Business	
C103.1	Analyze the basic fundamentals economic problems and the behavior by understanding the basic concepts of micro and macro economies.
C103.2	Understanding of the standard theoretical analysis of consumer and producer behaviour
C103.3	Design competition strategies, and market environment according to the natures of products and the structures of the markets.
C103.4	Integrate the concept of macroeconomic aggregates and output decisions of firms under various national income.
C103.5	Make optimal business decisions by integrating the concepts of Demand and supply of money.

C104- BA7104 Total Quality Management	
C104.1	Understand the TQM concepts like vision, mission, and quality policy statements and to implement the basic principles of TQM in manufacturing and service based organization.
C104.2	Understand the philosophies of the gurus of TQM in order to evaluate TQM implementation proposals offered by quality management organizations and consultants.
C104.3	Fundamentals of statistics and probability and their applications in quality management is provided, and various measurement and control techniques.
C104.4	Explore industrial applications of Quality function deployment, Taguchi quality concepts and to provide exposure to students on the old and new seven management tools.
C104.5	Analyze the IS/ISO 9004:2000 – quality management systems – guidelines for performance improvements. Quality Audits. TQM culture, Leadership, quality council, employee involvement, motivation, empowerment, recognition and reward - TQM framework, benefits, awareness and obstacles.
C105 BA 7105 Organizational Behavior	
C105.1	Understanding the concepts of human behavior as an individual and as a member in a group and its models
C105.2	Immense learning on individual human behavior and the theories which constitutes and contributes the concept of motivation and behaviour
C105.3	Learning the concepts about group behavior and the effects of group behavior in teambuilding communication process
C105.4	Familiarity with the leadership practices, skills and theories and the influence of leadership in power and politics
C105.5	Knowing the concepts of organizational behavior and its impact in organization culture and organizational climate
C106 BA 7106 Accounting for Management	
C106.1	Acquire conceptual knowledge of basics of Financial Accounting.

C106.2	Equip with the knowledge of accounting process and preparation of final accounts of company
C106.3	Develop an awareness and understanding of the accounting process and fundamental accounting principles that underpin the development of financial statements
C106.4	Interpret and analyze financial statements; combine financial ratio analysis with other information to assess the financial performance.
C106.5	Applying cost and management accounting concepts in budgetary controlling system.
C107 BA 7107 Legal Aspects of Business	
C107.1	Understanding the legal perspectives of the Indian Contract Act and the Sale of Goods act
C107.2	Knowledge about the company law and how it would influence the formation and governance and winding up the companies
C107.3	Understanding the amendment and human resource factors in industrial law and the various measures and acts for employee welfare
C107.4	Awareness about the income tax and Goods and Services tax (GST), its implementation and effects in economy
C107.5	Awareness and knowledge about consumer protection, Cyber crimes, Intellectual property rights and the acts which are related to these concepts
C107.6	Awareness about the income tax and Goods and Services tax (GST), its implementation and effects in economy
C108 BA 7108 Written Communication	
C108.1	Practicing the regular conversation on different topics and knowing the basic techniques for journal writing and official documents like mails reports etc.
C108.2	Knowledge about the types of interviews and selection process and the effective utilization of time management
C108.3	Familiarity with the communication skills and how it could be used for official communication purposes
C108.4	Implementation of the knowledge about journal, thesis writing and documentation

	processes
C108.5	Interest towards media publication, magazines and newsletter writing by implementing the techniques of writing
YEAR/SEMESTER:I/II	
C201 BA 7201 Operations Management	
C201.1	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..
C201.2	Knowing the various quantitative and qualitative forecasting methods and make planning of capacity, facility location, facility layout and operations based on that.
C201.3	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..
C201.4	Understand the need and importance of managing materials by planning and purchasing the right material; and managing the inventory for best output.
C201.5	Knowing various scheduling techniques like PERT and CPM and also the various methods to schedule and manage the projects.

C202 BA7202 Financial Management	
C.202.1	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.
C202.2	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.
C202.3	concepts of dividend and examine impact of dividend policy of a firm.
C202.4	Estimate and evaluate different components of working capital such as Receivables, payables, inventory, cash, etc.,
C202.5	Exposure and knowledge of long term sources of fund namely share, debenture, term loans, private equity, venture capital, and so on.

C203 BA 7203 Marketing Management

C.203.1	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.
C203.2	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.
C203.3	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.
C203.4	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.
C203.5	Conduct Marketing research process in the field of Retail, Product, Advertising and consumer behavior and also to understand the role of Marketing information systems, online marketing and the impact of Ethics in business.

C204 BA 7204 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
C204.2	Understanding the need for human resource requirement and the process of recruitment and selection
C204.3	Knowing the training methods, development programmes and the concepts of knowledge management
C204.4	Insight into the concept of motivation, its theories and techniques and the concept of career management
C204.5	Understanding the necessity of performance evaluation and the importance, process and methods of control system

C205 BA7205 Information Management	
C205.1	Knowledge about the basic concepts of information technology and functional information systems
C205.2	Remembering the tools for system analysis and its application in information management
C205.3	Familiarity with the database management systems and the concepts like data warehousing and data mart
C205.4	Understanding the need for security, testing process, knowing the concepts of disaster management, computer crimes etc., and ethics in Information technology.
C205.5	Understanding the role of e-commerce in information management and knowledge about data mining and cloud computing
C206 BA 7206- Applied Operations Research	
C206.1	Understand and analyze managerial problems in industry so that they are able to use resources more effectively.
C206.2	Specialized linear programming problems like the transportation and assignment Problems.
C206.3	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.
C206.4	Understand the characteristics of different types of decision making environments and the appropriate decision making approaches and tools to be used in each type.
C206.5	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.
C207 BA 7208 Business Research Methods (BA7207)	
C207.1	Remembering the types of research, its objectives and how the concept theory plays its role in research.
C207.2	Understanding the different types of research designs, types of validity and various measurement techniques.
C207.3	Knowledge about the various methods of data collection and how sample and sample size could be determined.

C207.4	Possessing the statistical techniques and different analytical methods for research.
C207.5	Knowing the needs and values of ethical research and how it could be implemented in report writing.
C208 BA7211 Data Analysis and BusinessModelling	
C208.1	Determine the aspects of creating spreadsheet, performing calculations, formatting, somevery widely used formulas
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.
C208.3	Understand the various alternatives available for investment and make sound investment decisions in the context of Analysis
C208.4	Build an understanding of the fundamental concepts of computer networking.
C208.5	Familiarity with the basic protocols of networking Models and how they can be used to assistin network design and implementation.
YEAR/SEMESTER: II/III	
C301 BA7301 Enterprise Resource Planning	
C301.1	Identify the important business functions provided by typical business software such as enterprise resource planning and Business Process management
C301.2	Describe basic concepts of ERP software solutions for best business practices.
C301.3	Design the ERP implementation strategies
C301.4	Create reengineered business processes for successful ERP implementation.
C302 BA7401 Strategic Management	
C302.1	Determine Understanding the conceptual framework, process, objectives and goals of strategic management.
C302.2	Knowing the basic concept of competitive advantage and its impact in external and internalbusiness environment.
C302.3	Analyzing the generic strategic alternatives, corporate strategy, diversification and strategicalliances.
C302.4	Implementing the strategic processes, strategic change, designing organizational structure and the techniques of strategic evaluation and control.
C302.5	Awareness about the strategic issues for non-profit organization and understanding the newbusiness models and strategies for internet economy.

C303 BA7012 Retail Management	
C303.1	Understand the concept of Retailing in India, Compare it with Global level ,Government rules and implication on Retailing
C303.2	Know about the various Retail formats available in India and global level.
C303.3	Understand the retail atmospheric, location, Service quality management, supply chain management, pricing decision in retail management.
C303.4	Know about the interior maintenance of retail like inventory management, Visual display, advertisement and promotion necessary for retailing, role of IT in Retail management
C303.5	Understand the shopper behavior analysis, decision making process, complaints Management and challenges in retail management

C 304 BA 7013 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
C304.2	Analyze the service market potential, to understand the Classification of services and also to understand service market segmentation, targeting and positioning.
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
C304.4	Explain the concept of pricing of services, its methods. To understand the service marketing triangle and Integrated Service marketing communication
C304.5	Apply service marketing strategies for health, Hospitality, Tourism, Financial, Logistics, Educational, Entertainment & public utility Information technique Services

C305 BA 7021 Security Analysis & Portfolio Management

C305.1	Understanding the basic environment of Indian financial systems especially investment options and their risk and return.
C305.2	Understanding the mechanism and functioning of primary and secondary markets of capital market and intermediaries
C305.3	Analyze and predict securities risk and return using fundamental analysis.
C305.4	Skill to predict share price movements and make decisions using different methods of technical analysis

C305.5	Analyze, evaluate and manage portfolio of securities based on various techniques.
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C306 BA International Trade Finance (BA7023)

C306.1	Gain the conceptual clarity of the theoretical aspects of international trade and finance
C306.2	understand the methods and instruments of payment, pricing, incoterms, export import strategies, and practices
C306.3	Analyse the nature and functioning of foreign exchange markets, determination of exchange rates and interest rates and their forecasting
C306.4	Understand the framework of international trade documentation for processing export and import transactions
C306.5	Analyze the export promotion schemes, marketing assistance and the organizations promoting exports

C307 BA7026 Banking Financial Services Management

C307.1	Determine Understanding the conceptual framework, process, objectives and goals of strategic management.
C307.2	Knowing the basic concept of competitive advantage and its impact in external and internal business environment.
C307.3	Analyzing the generic strategic alternatives, corporate strategy, diversification and strategic alliances.
C307.4	Implementing the strategic processes, strategic change, designing organizational structure and the techniques of strategic evaluation and control.
C307.5	Awareness about the strategic issues for non-profit organization and understanding the new business models and strategies for internet economy.

C308 BA 7031 Managerial Behavior & Effectiveness

C308.1	Understanding the models and methods of managerial jobs and the functional level differences in managerial job behavior.
C308.2	Knowing the methods of identifying the managerial talents, followed by recruitment, selection and the various appraisal measures which would help in designing the managerial job.
C308.3	Understanding the importance of managerial effectiveness and the techniques for

	bridging the gap.
C308.4	Awareness about the environmental issues in organizational climate, leadership and group influences.
C308.5	Understanding the managerial skills like self development, negotiation skills, creativity and innovation for developing the winning edge.

C309 BA 7032 Entrepreneurship Development

C309.1	Familiarize overview of the competencies, personality traits and characteristics of Entrepreneurs.
C309.2	Understand the Environmental factors affecting entrepreneurship and central and state government policies for SME's
C309.3	Understand about prefeasibility, feasibility, project preparation for stating a business enterprise.
C309.4	Implementing the strategic processes, strategic change, designing organizational structure and the techniques of strategic evaluation and control.
C309.5	Awareness about the strategic issues for non-profit organization and understanding the new business models and strategies for internet economy.

C310 BA 7034- Industrial Relations and Labour Welfare

C310.1	Knowing the framework of HRD, its functions, practices and how it could be implemented and evaluated in recent trends
C310.2	Understanding the concept of e-HRM and its implementation in designing HR portals and employee surveys
C310.3	Understanding the differences between domestic and international HRM, cross cultural HRM and the challenges in cross cultural management
C310.4	Awareness about the concepts of career development and how an effective system could be designed for career development
C310.5	Familiarity with the roles of coaching and counseling for employees and the ways to reduce work stress with the help of stress management techniques.

C311 BA 7036 Strategic Human Resource Management

C311.1	Determine Understanding the conceptual framework, process, objectives and goals of strategic management.
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C311.2	Knowing the basic concept of competitive advantage and its impact in external and internal business environment.
C311.3	Analyzing the generic strategic alternatives, corporate strategy, diversification and strategic alliances.
C311.4	Implementing the strategic processes, strategic change, designing organizational structure and the techniques of strategic evaluation and control.
C311.5	Awareness about the strategic issues for non-profit organization and understanding the new business models and strategies for internet economy.

C401 BA7311 Professional Skill Development

C401.1	Speak confidently with any speakers of English, including native speakers.
C401.2	Speak effortlessly in different contexts – informal and formal.
C401.3	Think of feet even in difficult circumstances.
C401.4	Hold interesting and meaningful conversations with others, including strangers
C401.5	Listen to others with utmost attention.

C402 BA 7401 International Business Management

C402.1	Knowing the nature, factors and advantages of International business and its businessEnvironment.
C402.2	Understanding the roles of GATT/WTO, Regional Trade block and the theories of international trade.
C402.3	Familiarity with the concepts of strategic compulsion, strategic options, controlling ofinternational business and its performance evaluation.
C402.4	Understanding the necessity of make or buy decision, concepts of product development andcriteria in selecting and training the expatriate managers.
C402.5	Awareness about the conflict management, the disadvantages and ethical issues of international business.

C403 BA7402 - Business Ethics, Corporate Social Responsibility and Governance

C403.1	Determine Understanding the conceptual framework, process, objectives and goals of strategic management.
C403.2	Knowing the basic concept of competitive advantage and its impact in external and internal business environment.
C403.3	Analyzing the generic strategic alternatives, corporate strategy, diversification and

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 BA7102 Statistics for Management												
PG102.1	2	2	2		-		-	-	-	-	-	2
PG102.2	2	3	2	-	-	-	-	-	-	-	-	2
PG102.3	2	2	2	-	-	-	-	-	-	2	-	2
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 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 BA7104 Total Quality Management												
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 BA7106 Accounting 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
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 BA7107 Legal Aspects of Business												
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 109 BA7108 Written Communication												
PG109.1	2	-	2	2	3	-	2	2	3	2	3	2
PG109.2	2	-	2	3	3	-	2	2	2	2	3	2
PG109.3	2	-	2	2	2	-	2	2	2	2	3	2
PG109.4	2	-	2	2	3	-	2	2	3	2	3	2
PG109.5	2	-	2	3	3	-	2	2	2	2	3	2
PG109.6	2	-	2	2	2	-	2	2	2	2	3	2

YEAR/SEMESTER: I/II

PG201 BA7201 Operations Management

PG201.1	2	2	-	-	-	2	2	-	2	3	-	2
PG201.2	2	3	-	-	-	2	2	-	2	3	-	2
PG201.3	2	2	-	-	-	2	2	-	2	3	-	2
PG201.4	2	2	-	-	-	2	2	-	2	3	-	2
PG201.5	2	3	-	-	-	2	2	-	2	3	-	2
PG201.6	2	3	-	-	-	2	2	-	2	3	-	2

PG202 BA7202 Financial Management

PG202.1	3	3	3	3	2	2	-	-		2	-	-
PG202.2	2	2	-	-	-	2	-	-	-	-	-	-
PG202.3	2	2	-	-	-	2	-	2	-	2	-	2
PG202.4	2	2	-	-	2	-	-	-	-	-	-	-
PG202.5	2	2	-	-	2	-	-	-	-	2	2	-
PF202.5	2	2	-	2	2	2	-	-	-	2	-	2

PG 203 BA7203 Marketing Management

PG203.1	2	2	-	-	-	-	-	-	-	-	-	-
PG203.2	2	2	-	-	-	2	-	-	-	3	-	2
PG203.3	2	2	-	3	-	2	-	-	-	3	-	2
PG203.4	2	2	-	3	-	2	-	-	-	3	-	2
PG203.5	2	2	-	-	2	2	-	-	2	3	-	3
PG203.6	2	2	-	-	2	2	-	-	2	3	-	3

PG 204 BA7204 Human Resource Management

PG204.1	2	2	2	-	2	-	-	-	-	-	2	2
PG204.2	2	-	2	-	2	-	-	-	-	-	2	2
PG204.3	2	-	2	2	2	2	-	-	-	-	2	2
PG204.4	2	-	2	-	2	2	-	-	-	-	2	2
PG204.5	2	-	2	-	2	2	2	-	2	-	2	2
PG204.6	2	-	2	2	2	2	2	-	2	-	2	2

PG 205 BA7205 Information Management

PG205.1	2	2	2	-	2	-	-	-	-	-	-	2
PG205.2	2	2	2	-	2	-	-	-	-	-	-	2
PG205.3	2	2	2	-	2	-	-	-	-	-	-	2
PG205.4	2	2	2	-	2	-	-	-	-	-	-	2
PG205.5	1	2	2	-	2	-	-	-	-	-	-	2
PG205.6	2	2	2	-	2	-	-	-	-	-	-	2

PG 206 BA7206 Applied Operations Research

PG206.1	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	2	2	2	-	2	-	-	-	-	-	-	2
PG206.6	2	2	2	-	2	-	-	-	-	-	-	2

PG 207 BA7207 Business Research Methods

PG207.1	2	-	2	2	3	-	2	2	3	2	3	2
PG207.2	2	-	2	3	3	-	2	2	2	2	3	2
PG207.3	2	-	2	2	2	-	2	2	2	2	3	2
PG207.4	2	-	2	2	3	-	2	2	3	2	3	2
PG207.5	2	-	2	3	3	-	2	2	2	2	3	2

PG 208 BA7211 Data Analysis and Business Modeling

PG 208.1	3	-	-	-	-	-	-	-	-	-	-	-
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YEAR/SEMESTER –II/III

PG 301 BA7301 Enterprise Resource Planning

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 BA7302 Strategic 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	-	-	-	-	-	-	-	-	-	-
PG 303 BA7011 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 BA7013 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 BA7022 Merchant Banking and Financial Services

PG306.1	2	3	-	-	-	-	-	-	-	-	-	-
PG306.2	2	2	-	-	-	-	-	-	-	-	-	-
PG306.3	2	2	-	-	-	-	-	-	-	-	-	-
PG306.4	2	2	-	-	-	-	-	-	-	-	-	-
PG306.5	3	3	-	-	-	-	-	-	-	-	-	-
PG306.6	3	3	-	-	-	-	-	-	-	-	-	-

PG 307 BA7026 Banking Financial Services Management

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 BA 7021 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 BA7031 Managerial Behavior and Effectiveness

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 BA7034 Industrial Relations & Labour Welfare

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	-	-	-	-	-	-	-	-

PG 311 BA7036 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 BA7062 Exim Management

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 BA7063 Fundamentals of Shipping

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 BA7064 Port and Terminal 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


PRINCIPAL

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

Regulation - 2017

YEAR/SEMESTER : I / 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.
C101.2	Understanding of the standard theoretical analysis of consumer and producer behaviour
C101.3	Design competition strategies, and market environment according to the natures of products and the structures of the markets.
C101.4	Integrate the concept of macroeconomic aggregates and output decisions of firms under various national income.
C101.5	Make optimal business decisions by integrating the concepts of Demand and supply of money.
C102 BA5102 Principles Of Management	
C102.1	Evaluate the context for taking managerial actions of planning, organizing and controlling. .
C102.2	Assess situation, including opportunities and threats that will impact management of an organization
C102.3	Integrate management principles into management practices
C102.4	The students should be able to describe and discuss the elements of effective management,
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
C103 BA5103 Accounting For Management	
C103.1	Prepare various costing schedules where an analysis of cost classification, behaviour, and types.
C103.2	Analyze cost-volume-profit techniques to determine optimal managerial decisions.
C103.3	Apply and analyze different types of activity-based management tools through the preparation of estimates
C103.4	Possess a managerial outlook at accounts

C103.5	Acquire a reasonable knowledge in accounts. Analysis and evaluate financial statements.
C104 BA5104 Legal Aspects Of Business	
C104.1	Acquire Basic knowledge and understanding of the principles governing the business organization.
C104.2	Ability to analyze legal issues facing a company with the knowledge gained.
C104.3	Comprehend the key concepts of business law relating to contract formation, the selection of a business organization etc
C104.4	Legal insight will be established in the business practices according to the situation of changing environment
C104.5	Analyse the knowledge of Legal perspective and its practices to improvise the business
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.
C105.2	Analyze how these theories and empirical evidence can help to understand contemporary organizational issues.
C105.3	Apply theories to practical problems in organizations in a critical manner.
C105.4	Comprehend some of the main theories of Organizational Behavior
C105.5	Analyse an overview of theories and practices in organizational behavior in individual, group and organizational level.
C106 BA5106 STATISTICS FOR MANAGEMENT	
C106.1	Have a fundamental knowledge of the basic statistics and probability distribution concepts.
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.
C106.3	Find the application of correlation, regression and time series analysis in various aspects.
C206.4	To facilitate objective solutions in business decision making under subjective conditions
C206.5	Students to solve the problems by understanding the basic concepts and learn the applications of statistics in business decision making.

C107 BA5107 TOTAL QUALITY MANAGEMENT	
C107.1	Apply quality philosophies and tools to facilitate continuous improvement and ensure customer delight.
C107.2	Familiar the principles of total quality management and peculiarities of their implementation
C107.3	Use quality management methods analyzing and solving problems of organization.
C107.4	To use new concepts of TQM Process of continuous improvement and learning
C107.5	To create an awareness of fundamental principles , significance and implementation of quality management.
C108 BA5108 SPOKEN AND WRITTEN COMMUNICATION	
C108.1	Get into the habit of writing regularly.
C108.2	Express themselves in different genres of writing from creative to critical to factual writing.
C108.3	Take part in print and online media communication.
C108.4	Read quite widely to acquire a style of writing
C108.5	Identify their area of strengths and weaknesses in writing
C108.6	Speak confidently with any speakers of English, including native speakers. Speak effortlessly in different contexts – informal and formal
YEAR/SEMESTER : I / 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.
C201.2	Specialized linear programming problems like the transportation and assignment Problems.
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.
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.
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.
C202 BA5202 Business Research Methods	
C202.1	Remembering the types of research, its objectives and how the concept theory plays its role in research.
C202.2	Understanding the different types of research designs, types of validity and various measurement techniques.
C202.3	Knowledge about the various methods of data collection and how sample and sample size could be determined.
C202.4	Possessing the statistical techniques and different analytical methods for research.
C202.5	Knowing the needs and values of ethical research and how it could be implemented in report writing.
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.
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.
C203.3	concepts of dividend and examine impact of dividend policy of a firm.
C203.4	Estimate and evaluate different components of working capital such as Receivables, payables, inventory, cash, etc.,
C203.5	Exposure and knowledge of long term sources of fund namely share, debenture, term loans, private equity, venture capital, and so on.
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

C204.2	Understanding the need for human resource requirement and the process of recruitment and selection
C204.3	Knowing the training methods, development programmes and the concepts of knowledge management
C204.4	Insight into the concept of motivation, its theories and techniques and the concept of career management
C204.5	Understanding the necessity of performance evaluation and the importance, process and methods of control system
C205 BA5205 Information Management	
C205.1	Knowledge about the basic concepts of information technology and functional information systems
C205.2	Remembering the tools for system analysis and its application in information management
C205.3	Familiarity with the database management systems and the concepts like data warehousing and data mart
C205.4	Understanding the need for security, testing process, knowing the concepts of disaster management, computer crimes etc., and ethics in Information technology.
C205.5	Understanding the role of e- commerce in information management and knowledge about data mining and cloud computing
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..
C206.2	Knowing the various quantitative and qualitative forecasting methods and make planning of capacity, facility location, facility layout and operations based on that.
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.
C206.4	Understand the need and importance of managing materials by planning and

	purchasing the right material; and managing the inventory for best output.
C206.5	Knowing various scheduling techniques like PERT and CPM and also the various methods to schedule and manage the projects.
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.
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.
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.
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.
C207.5	consumer behavior and also to understand the role of Marketing information systems, Online marketing and the impact of Ethics in business.
C208 BA5208 Data Analysis and Business Modelling	
C208.1	Determine the aspects of creating spreadsheet, performing calculations, formatting, some very widely used formulas
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.
C208.3	Understand the various alternatives available for investment and make sound investment decisions in the context of Analysis
C208.4	Build an understanding of the fundamental concepts of computer networking.
C208.5	Familiarity with the basic protocols of networking Models and how they can be used

	to assist in network design and implementation.
Year/SEMESTER : I / III	
C301 BA5301 International Business Management	
C301.1	Knowing the nature, factors and advantages of International business and its business Environment.
C301.2	Understanding the roles of GATT/WTO, Regional Trade block and the theories of international trade.
C301.3	Familiarity with the concepts of strategic compulsion, strategic options, controlling of international business and its performance evaluation.
C301.4	Understanding the necessity of make or buy decision, concepts of product development and criteria in selecting and training the expatriate managers.
C301.5	Awareness about the conflict management, the disadvantages and ethical issues of international business.
C302 BA5302 Strategic management	
C302.1	Determine Understanding the conceptual framework, process, objectives and goals of strategic management.
C302.2	Knowing the basic concept of competitive advantage and its impact in external and internal business environment.
C302.3	Analyzing the generic strategic alternatives, corporate strategy, diversification and strategic alliances.
C302.4	Implementing the strategic processes, strategic change, designing organizational structure and the techniques of strategic evaluation and control.
C302.5	Awareness about the strategic issues for non-profit organization and understanding the new business models and strategies for internet economy.
C303 BA5001 Brand Management	
C303.1	Developing a basic understanding of Branding its functions, Significance and various types of brands.
C303.2	Highlighting the strategic issues in branding. And also to study the branding strategies used by companies to compete with foreign brands.
C303.3	Develop hands-on abilities establishing the key foundations of a strong brand image

	building, brand loyalty programmes, brand promotion, and brand personality
C303.4	Understanding of brand adoption practices and basic issues in brand extensions.
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..
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
C304.2	Analyze the service market potential, to understand the Classification of services and also to understand service market segmentation, targeting and positioning.
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
C304.4	explain the concept of pricing of services, its methods. To understand the service marketing triangle and Integrated Service marketing communication
C304.5	Apply service marketing strategies for health, Hospitality, Tourism, Financial, Logistics, Educational, Entertainment & public utility Information technique Services .
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
C305.2	Identify the key stakeholders and the roles/responsibilities of retail towards these stakeholders
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
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 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
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.
C306.2	Price various types of loans and deposits proposed by banks to various prospective Borrowers and depositors respectively.
C306.3	Identify the various risk profiles and evaluate the performance of banks and manage the asset liabilities of the bank.
C306.4	Understand the need and importance of mergers and diversification of bank and the methods to evaluate the performance of banking.
C306.5	Understand e-banking and the threats that go with it.
C307 BA5022 Merchant Banking And Financial Services	
C307.1	Apply corporate finance concepts, principles and theories to the basic financial problems of the industry.
C307.2	Apply best practice tools and methods in investment management to different settings
C307.3	Explain the capital structure and analyze how financing decisions influence firm value.
C307.4	Describe how dividends are paid and explain factors that affect a firm's dividend policy.
C307.5	Evaluate different stakeholders' roles and significance in relation to corporate Governance
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.
C308.2	Understanding the mechanism and functioning of primary and secondary markets of capital market and intermediaries
C308.3	Analyze and predict securities risk and return using fundamental analysis.
C308.4	Skill to predict share price movements and make decisions using different methods

	of technical analysis
C308.5	Analyze, evaluate and manage portfolio of securities based on various techniques.
C309 BA5014 ENTREPRENEURSHIP DEVELOPMENT	
C309.1	Familiarize overview of the competencies, personality traits and characteristics of Entrepreneurs.
C309.2	Understand the Environmental factors affecting entrepreneurship and central and state government policies for SME's
C309.3	Understand about prefeasibility, feasibility, project preparation for starting a business enterprise.
C309.4	Understand the various functions areas of Management ie Finance Marketing, HR and Operations management.
C309.5	Understand monitoring of business, preventing of sickness, rehabilitation of business Enterprises.
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.
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.
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
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
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

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.
C311.2	Knowing the methods of identifying the managerial talents, followed by recruitment ,selection and the various appraisal measures which would help in designing the managerial job.
C311.3	Understanding the importance of managerial effectiveness and the techniques for bridging the gap.
C311.4	Awareness about the environmental issues in organizational climate, leadership and group influences.
C311.5	Understanding the managerial skills like self development, negotiation skills, creativity and innovation for developing the winning edge.
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.
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.
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.
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.
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.
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)

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)
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)
C313.4	To understand the different ways of online payment system and their security (Critical thinking)
C313.5	To understand and critically analyze legal, ethical and privacy issues in doing business online (Thinking and analysis)
C314 BA5024 Enterprise Resource planning	
C314.1	Identify the important business functions provided by typical business software such as enterprise resource planning and Business Process management
C314.2	Describe basic concepts of ERP software solutions for best business practices.
C314.3	Design the ERP implementation strategies
C314.4	Create reengineered business processes for successful ERP implementation.
C314.5	To understand the basics in business intelligence (BI), data mining (DM), and knowledge discovery in databases
II Year/SEMESTER : IV	
C401.1	Understand the problem statement in a various domain
C401.2	Identify the problem and do the literature survey
C401.3	Design a module for solving a problem in the respective area.
C401.4	Implement a module for solving a problem identified.
C401.5	Evaluate the module results and make improvements.

S.No	Course Outcome											
	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
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
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

YEAR /SEMESTER – I / II

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
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

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	-	-	-	-	-	-	-	-	-	-
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

YEAR/SEMESTER –II/III

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	-	-	-	-	-	-	-	-	-	-

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	-	-	-	-	-	-	-	-

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

YEAR/SEMESTER :II /IV

PG 401 BA5411 Project Work

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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