

COURSE OUTCOMES

REGULATION: 2013

S.NO	COURSE NAME	COURSE OUT COMES	
1	C101- Technical English – I (HS6151)	C101.1	Understand the basic grammatical functions and vocabulary.
		C101.2	Speak and write clearly and communicate using appropriate communicative strategies
		C101.3	Write Informal letters /blog/email with a wide range of vocabulary
		C101.4	listen/view and comprehend different spoken discourses and passages in different accents.
		C101.5	Read and write different genres of texts.
2	C102 - Mathematics – I (MA6151)	C102.1	Understand the Concepts of Diagonalization of matrices.
		C102.2	Apply simple techniques for testing the convergence of sequences and series
		C102.3	Use the differentiation concepts to differentiate functions
		C102.4	Apply partial differentiation in functions of several variables.
		C102.5	Apply integration concepts to compute multiple integrals.
3	C103 - Engineering Physics – I (PH6151)	C103.1	Able to classify various crystal structures and its parameters.
		C103.2	Explain the basics of properties of matter, the thermal properties of materials like thermal conductivity and its application.
		C103.3	Acquire knowledge on the concepts of quantum theory and its application in tunneling microscopes.
		C103.4	Understands the basic concepts of Acoustics in buildings and the production of ultrasonic waves and its application in NDT and medical field.
		C103.5	Understands the concept of photonics and its usage in the production of different types of laser and the principle of fibre optics with its application in various fields.
4	104 - Engineering Chemistry-1 (CY6151)	C104.1	Understand the types of water and water treatment techniques.
		C104.2	Utilize the various adsorbent in industries.
		C104.3	Classify the types of alloys and understand the component present in the alloys.
		C104.4	Explain the types of fuels and manufacturing of secondary fuels.

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	C C4	C104.5	Illustrate the types of energy resources.
5	C105 - Computer programming (GE6151)	C105.1	Know the organization of digital Computer
		C105.2	Design C Programs for problems.
		C105.3	Write and execute C programs using Arrays and Strings for simple applications
		C105.4	Usage of Pointers and Function in C programming
		C105.5	Design Programming using Structures and Union
6	C106 - Engineering Graphics (GE6152)	C106.1	Discuss about conics and orthographic views of engineering components
		C106.2	Draw the projection of points, lines and planes
		C106.3	Classify solids and projection of solids at different positions
		C106.4	Show sectioned view of solids and development of surface
		C106.5	Draw isometric projection and perspective views of an object/solid
7	C107 - Computer Practices Laboratory (GE6161)	C107.1	Know about Data Manipulation in MS Office Packages
		C107.2	Apply good programming design methods for program development using Decision making and looping statements.
		C107.3	Design and implement C programs using strings and arrays.
		C107.4	Design and implement C programs using functions and string functions.
		C107.5	Develop recursive functions and develop programs using structures and unions.
8	C108 - Engineering Practices Laboratory (GE6162)	C108.1	Apply the knowledge of pipeline connections to household fittings and industrial buildings.
		C108.2	Prepare the different joints in roofs, doors, windows and furniture.
		C108.3	Perform step turning operation in a lathe.
		C108.4	Perform the various welding processes and know about its applications.
		C108.5	Produce a funnel using sheet metal.
9	ics and Chemistry y - I (GE6163)	C109.1	Understand the concept of Laser and its diffraction for different usage
		C109.2	Able to find the velocity of ultrasonic waves in different liquid.
		C109.3	Apply principle of diffraction to determine the wavelength of visible spectrum.

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	C109 - Physics Laboratory	C109.4	Understand the various parameter affecting the thermal conductivity of poor conductor
		C109.5	Analyze the various modulus of elasticity of different types of materials.
10	C110 - Technical English – II (HS6251)	C110.1	Understand basic grammar and know to engage in conversation.
		C110.2	Write and produce different types of technical write ups.
		C110.3	Read and write different genres of technical texts.
		C110.4	Create Job applications and Resume / E - Resume
		C110.5	Express opinions and initiate a discussion using appropriate communicative strategies
11	C111 - Mathematics – II (MA6251)	C111.1	Understand the concepts of Vector Calculus and their applications.
		C111.2	Interpret the Concepts of analytic functions and Conformal mapping.
		C111.3	Understand the integration concepts on Complex integration
		C111.4	Demonstrate the main concepts on Laplace transformations and their applications
		C111.5	Use various techniques in solving differential equations.
12	C112 - Engineering Physics – II (PH6251)	C112.1	Gain knowledge on the conducting materials and its properties
		C112.2	Acquire knowledge on the concepts of carrier concentration in intrinsic and extrinsic semiconductors and its determination using Hall effect.
		C112.3	Classify the different types of magnetic materials and know the properties of superconductors.
		C112.4	Understands the basic concepts of dielectric materials and its usage in capacitors and transformers.
		C112.5	Able to classify the different modern engineering materials and its application in different fields.
13	C113 - Engineering Chemistry – II (CY6251)	C113.1	Illustrate the types of electrochemical cell..
		C113.2	Summarize the types of corrosion and corrosion prevention methods.
		C113.3	Explain the types of fuels and manufacturing of secondary fuels.
		C113.4	Classify the types of alloys and understand the component present in the alloys.
		C113.5	Analyze the sample using various spectroscopy.
	1 and ing	C114.1	Applying the fundamentals of electric circuits and electrical measuring instruments

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14	C114 - Basic Electrical Electronics Engineer (GE6252)	C114.2	Understanding the concepts of electrical machines
		C114.3	Understand the concepts of various electronic devices
		C114.4	Understand the concepts of various Digital Electronics
		C114.5	Acquire knowledge on basic concepts of Communication Engineering
15	C115 - Engineering Mechanics (GE6253)	C115.1	Illustrate the vectorial and scalar representation of forces and moments.
		C115.2	Analyse the rigid body in equilibrium.
		C115.3	Evaluate the properties of surfaces and solids.
		C115.4	Calculate dynamic forces exerted in rigid body.
		C115.5	Determine the friction and the effects by the laws of friction.
16	C116 - Computer Aided Drafting and Modeling Laboratory (GE6261)	C116.1	Sketch simple figures with title block using AutoCAD software commands.
		C116.2	Sketch curves like parabola, spiral and involute of square & circle and draw the orthographic projection of simple solids.
		C116.3	Prepare orthographic projection of simple machine parts and draw a plan of residential building.
		C116.4	Sketch simple steel truss and sectional views of simple solids.
		C116.5	Prepare 2D multi view drawing from 3D model.
17	C117 - Physics and Chemistry Laboratory - II (GE6262)	C117.1	Analyze the various modulus of elasticity of different types of materials.
		C117.2	Understand the various parameters affecting the band gap of semiconductor.
		C117.3	Apply principle of diffraction to determine the parameters of optical prism.
		C117.4	Analyze the co-efficient of viscosity of different liquids.
		C117.5	Apply the basic principles of optics to determine the thickness of thin materials.
18	- Transforms and Partial Differential Equations (MA6351)	C201.1	Demonstrate the effective mathematical tools used for the solutions and applications of partial differential equations.
		C201.2	Illustrate the Fourier series which is central to many applications in engineering.
		C201.3	Apply the applications of partial differential equations and solve boundary value problems using Fourier series analysis.
		C201.4	Acquire Fourier transform techniques used in wide variety of situations.

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	C201 Differenc	C201.5	Explain Z transform techniques for discrete time systems and solve difference equations using Z transform.
19	C202 – Strength of Materials (CE6306)	C202.1	Apply the knowledge of mathematics, basic theory of science, fundamental principles to attain the solution of complex engineering problems on deformation of materials.
		C202.2	Identify, formulate to perform the stress analysis of a beam under axial loading, torsion, transverse loading to provide valid conclusions.
		C202.3	Apply the Torsion formulation stresses and deformation in circular and hollows shafts to analyze complex engineering problems.
		C202.4	Illustrate the fundamental concepts of deflection of beam by various methods.
		C202.5	Apply reasoning informed by the contextual knowledge to perform stress and strain deformations in Thin , Thick Cylinders, spherical shells
20	C203 – Fluid Mechanics and Machinery (CE6451)	C203.1	Apply the mathematical knowledge and engineering fundamentals on the Characteristics of fluid flow and properties of fluids.
		C203.2	Identify the engineering problems and design system components of fluid flow through circular conduits.
		C203.3	Identify and formulate parameters of fluid flow by research based dimensional analysis.
		C203.4	Apply appropriate techniques and use the theoretical knowledge of the fluid flow in various pumps
		C203.5	Apply the fundamental knowledge of mathematics, science and engineering for the solution of complex engineering problems in turbines.
21	C204 – Digital Electronics (EC6302)	C204.1	Have a thorough understanding of the fundamental concepts and techniques used in digital electronics.
		C204.2	To understand and examine the structure of various number systems and its application in digital design.
		C204.3	The ability to understand, analyze and design various combinational and sequential circuits
		C204.4	Ability to identify basic requirements for a design application and propose a cost effective solution.
		C204.5	The ability to identify and prevent various hazards and timing problems in a digital design.
22	C205 – Electrical Machines and Drives (EE6358)	C205.1	Understand the Electric circuits and transformers.
		C205.2	Understand the various types of electrical motors.
		C205.3	Know about speed control and starting methods DC and induction motors
		C205.4	Understand about various types of electrical drives
		C205.5	The students can able to explain different types of electrical machines and their performance

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23	C206– Kinematics of Machinery (ME6401)	C206.1	Explain the engineering knowledge on the basic components and layout of linkages in the assembly of a machine, so as to identify and select suitable linkages as well as mechanisms for various engineering applications.
		C206.2	Explain the assembly with respect to the displacement, velocity, and acceleration at any point in a link of a mechanism.
		C206.3	Illustrate the motion resulting from a specified set of linkages, design few linkage mechanisms and CAM mechanisms for specified output motions.
		C206.4	Illustrate the basic concepts of toothed gearing and kinematics of gear trains and the effects of friction in motion transmission and in machine components.
		C206.5	Demonstrate the principles of friction in machine elements. Examine the concept of vibratory systems and their analysis in the domain of forced vibration.
24	C207 – Fluid Mechanics and Machinery Laboratory (CE6461)	C207.1	Apply the mathematical knowledge and engineering fundamentals on the Characteristics of fluid flow and properties of fluids
		C207.2	Identify the engineering problems and use the practical knowledge on finding the characteristics of fluid flow in various pumps
		C207.3	Identify the solutions for turbine related problems and to meet the specified needs with appropriate consideration for fluid flow in turbines.
25	C208 – Electrical Machines and Drives Laboratory (EE6362)	C208.1	Ability to perform load test on D.C. shunt motor
		C208.2	Ability to perform speed control test
		C208.3	Ability to do characteristics of different electrical motors
26	C209 – Computer Aided Machine Drawing (MT6311)	C209.1	Sketch simple figures with title block using AutoCAD software commands.
		C209.2	Sketch curves like parabola, spiral and involute of square & circle and draw the orthographic projection of simple solids.
		C209.3	Prepare orthographic projection of simple machine parts and draw a plan of residential building.
		C209.4	Sketch simple steel truss and sectional views of simple solids.
		C209.5	Prepare 2D multi view drawing from 3D model.
27	Statistics and Numerical Methods (MA6452)	C210.1	Apply the concept of testing of hypothesis for small and large samples in real life problems
		C210.2	Apply the basic concepts of classifications of design of experiments in the field of agriculture.
		C210.3	Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems

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	C210 – Statistics Methods	C210.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.
		C210.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications
28	C211 – Dynamics of Machines (ME6505)	C211.1	Calculate static and dynamic forces of mechanisms.
		C211.2	Calculate the balancing masses and their locations of reciprocating and rotating masses
		C211.3	Compute the frequency of free vibration.
		C211.4	Compute the frequency of forced vibration and damping coefficient.
		C211.5	Calculate the speed and lift of the governor and estimate the gyroscopic effect on automobiles, ships and airplanes.
29	C212 – Control System Engineering (EC6405)	C212.1	Identify the various control system components and their representations.
		C212.2	Analyze the various time domain parameters.
		C212.3	Analysis the various frequency response plots and its system.
		C212.4	Apply the concepts of various system stability criteria.
		C212.5	Design various transfer functions of digital control system using state variable models.
30	C213 – Manufacturing Technology (ME6352)	C213.1	Provide with the basic concepts of engineering fundamentals on various molding and casting processes, apply appropriate techniques by to obtain defect free casting.
		C213.2	Acquire the basic knowledge, engineering fundamentals of metal joining processes and identify the suitable welding techniques and apply them to the specific needs with safe environmental conditions in welding industries.
		C213.3	Explain the basic engineering fundamentals of various metal forming processes, equipments, design of forming dies and select the suitable forming techniques.
		C213.4	Identify the basic characteristics of sheet metals and its forming processes, apply appropriate techniques and resources to fabricate sheet metal component
		C213.5	Illustrate the basics of plastics and apply suitable methods, resources, modern engineering tools in manufacture of plastic components
	Measurements	C214.1	Apply engineering knowledge, standard and necessary appropriate techniques used in measuring instruments for the specific requirements like sensitivity, accuracy and precision, etc.

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31	C214 – Metrology and Measur (ME6504)	C214.2	Illustrate and understanding the engineering application of different measuring instruments for linear, angular, form and roughness measurements.
		C214.3	Identify the advanced measuring instruments and concepts of Machine Vision System elements and Applications.
		C214.4	Apply modern engineering techniques and software's in the measurement of linear, angular and form using in Laser Interferometer and CMM.
		C214.5	Explain engineering knowledge on different measuring equipments for the measurement of Power, Flow and Temperature.
32	C215 – Microprocessors and Applications (MT6401)	C215.1	Distinguish the feature of the 8085 microprocessor, Hardware Architecture and PIN diagram
		C215.2	Demonstrate programming proficiency using the various addressing modes and data transfer instructions of 8085 microprocessor
		C215.3	Understand the basic concepts of 8051 architecture and registers.
		C215.4	Describing the interfacing of external peripherals to 8085 using peripheral interfacing Ics
		C215.5	Understand the addressing modes and instruction set of 8051 and its application
33	C216- Microprocessor Laboratory (MT6411)	C216.1	Understand the fundamentals of assembly level programming of microprocessors .
		C216.2	Apply the programming knowledge for arithmetic and logical operations in 8085 and 8051
		C216.3	Develop the program for sorting and string manipulation programs.
		C216.4	Understanding the different input /output devices can be interfaced to 8085 and 8051
		C216.5	Apply the programming knowledge for understanding of communication standards in 8085 and 8051 and real time applications
34	C217 – Manufacturing Technology Laboratory (ME6465)	C217.1	Apply norms of the engineering practice to gain hands-on experience on lathe machine to perform Taper turning, External Thread cutting operations by using lathe machine.
		C217.2	Apply knowledge, norms of the engineering practice and appropriate techniques to get hands on experience on Shaping machine.
		C217.3	Apply norms of the engineering practice to gain hands-on experience on machining of materials using milling machine.
		C217.4	Illustrate the importance of Measurement of cutting forces in Milling / Turning Process
		C217.5	Apply the engineering norms to produce engineering comonents like Spur, Helical Gear by using milling machine



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35	C218- Dynamics Laboratory (ME6511)	C218.1	Evaluate and determine the velocity ratios of gear trains applicable in various form of complex dynamics engineering applications
		C218.2	Determine the static and dynamic values of various types of vibration systems with appropriate consideration for safety and environmental considerations
		C218.3	calculate and determine the gyroscopic effect by means of system analysis and interpretation of data and synthesis of the parameters to provide valid design conclusions
		C218.4	Construct ,conduct and determine parameter values of various types of governors in tune with social responsibility to avoid over speed and fuel economy resulting in the green tribunal considerations
		C218.5	Evaluate , design and generate cam profiles and related standards of any cam system applicable in standard automation for safety measurements.
36	C301 - Design of Machine Elements (ME6503)	C301.1	Evaluate the Engineering problems using the principles of Engineering science for understanding the design process and select the appropriate materials based on mechanical properties considering safety and environmental conditions.
		C301.2	Demonstrate the design knowledge on solid and hollow components, Shafts and rigid and flexible couplings.
		C301.3	Provide an engineering knowledge on the specific engineering area in temporary and permanent joint
		C301.4	Apply Engineering design knowledge on Energy Storing Elements and Engine Components
		C301.5	Evaluate Engineering knowledge and analyze complex problems associated with the design so as to develop a component of bearing in machines
37	C302 - Power Electronics (EE6503)	C302.1	Analyze the characteristics of different power electronics devices like SCR, BJT, MOSFET and IGBT.
		C302.2	Explain the types of power converters and understand the operations of single and three phase converters.
		C302.3	Classify the operation of Choppers and outline the application of SMPS.
		C302.4	Categorize various single phase and three phase power inverter circuits and understand their applications
		C302.5	Illustrate the basic operation and characteristics of AC voltage controllers and cyclo converters
38	C303 - Sensors and Signal Processing (MT6501)	C303.1	Familiar with various calibration techniques and signal types for sensors.
		C303.2	Apply the various sensors in the Automotive and Mechatronics applications
		C303.3	Describe the working principle and characteristics of force, magnetic and heading sensors.
		C303.4	Understand the basic principles of various pressure and temperature, smart sensors.

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	C303.P	C303.5	The students will be able to use Sensors, various electrical and mechanical instruments in industries.
39	C304 - Environmental Science and Engineering (GE6351)	C304.1	Environmental Pollution or problems cannot be solved by mere laws. Public participation is an important aspect which serves the environmental Protection. One will obtain knowledge on the following after completing the course.
		C304.2	Public awareness of environmental is at infant stage.
		C304.3	Ignorance and incomplete knowledge has lead to misconceptions
		C304.4	Development and improvement in std. of living has lead to serious environmental disasters
		C304.5	Know about the increase in human population and its variation among nations, human rights, role of communication in environment and human health.
40	C305 - CNC Machining Technology (MF6505)	C305.1	Identify different axes, machine zero, home position, systems and controls CNC machines.
		C305.2	Select, mount and set cutting tools and tool holders on CNC.
		C305.3	Prepare part programmes using ISO format for given simple components with and without use of MACRO, CANNED CYCLE and SUBROUTINE using ISO format.
		C305.4	Interface software application for auto part programming.
		C305.5	Apply maintenance practices for CNC machines.
41	C306 - C308- Thermodynamics Principles and Applications (MT6502)	C306.1	Understand the basic concepts associated first law of thermodynamics
		C306.2	Understand basic concepts associated with second law of thermodynamics
		C306.3	Explain Engineering science and natural science for understanding the phenomena of carburetion, combustion process in Spark Ignited engines and the factors affecting the combustion process.
		C306.4	Basic principles of refrigeration, air conditioning and psychometric chart
		C306.5	Distinguishing the various modes of heat transfer and its applications
42	Power Electronics Laboratory (MT6511)	C307.1	Identify relevant information to supplement to the Power Electronics course.
		C307.2	Set up testing strategies and select proper instruments to evaluate performance characteristics of Power devices and power electronics circuits and analyze their operation under different loading conditions.
		C307.3	Practice different types of wiring and devices connections keeping in mind technical, economical, safety issues.
		C307.4	Realize the limitations of computer simulations for verification of circuit behavior, apply these techniques to different power electronic circuits and evaluate possible causes of discrepancy in practical experimental observations in comparison to theory.

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	C307 - Power	C307.5	Realize the limitations of computer simulations for verification of circuit behavior, apply these techniques to different power electronic circuits and evaluate possible causes of discrepancy in practical experimental observations in comparison to theory.
43	C308 - Sensors and Signal Processing Laboratory (MT6512)	C308.1	Generate appropriate design procedure, suitable for signal conversion to interface with computer
		C308.2	Design appropriate circuits by using conventional formulas used in signal conditioning and conversion
		C308.3	Implement their design in bread board and test it
		C308.4	Design System for estimation, spectral estimation
		C308.5	To perform wave formation analysis of the system
44	C309 - CNC Laboratory (MT6513)	C309.1	Design and Create Mechanical Components & Simulation of process using CAM Software with G and M codes.
		C309.2	Develop Appropriate techniques to create Manufacturing of Mechanical components using modern CNC Lathe and Milling Machines.
		C309.3	Ability to operate CNC controlled machine tools
		C309.4	Generate CNC programs for a given components to work with CNC machines
		C309.5	Develop Programming skills and create an component for required drawing, Simulate the prepared part programme using available simulation software's. And Prepare the parts on CNC
45	C310 - Principles of Management (MG6851)	C310.1	Understand the concepts related to Business
		C310.2	Demonstrate the roles, skills and functions of management
		C310.3	Analyze effective application of PPM knowledge to diagnose and solve organizational problems and develop optimal managerial decisions.
		C310.4	Understand the complexities associated with management of human resources in the organizations and integrate the learning in handling these complexities.
		C310.5	students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling and have same basic knowledge on international aspect of management
46	C311 - Micro Controller and PLC (MT6601)	C311.1	To understand the architecture of microcontroller 8051
		C311.2	To understand the programming of microcontroller 8051
		C311.3	To comprehend the application of MC 8051
		C311.4	To understand the architecture of PLC

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	C31	C311.5	To apply the interfacing of PLC
47	C312 - Applied Hydraulics and Pneumatics (MT6602)	C312.1	To apply mathematical knowledge to predict the properties and characteristics of a fluid.
		C312.2	Understanding operating principles and constructional features of hydraulic and pneumatic systems.
		C312.3	Knowledge with selection of hydraulic / pneumatic components
		C312.4	Understanding of designing and layout of Hydraulic Power package and trouble shooting.
		C312.5	Operate and maintain various pneumatic and hydraulic systems in industrial environments.
48	C313 - Design of Mechatronics System (MT6603)	C313.1	The course will introduce the basic mechatronics key elements functions and mechatronics system Design process.
		C313.2	Briefly discuss the system modelling and electro mechanic design process.
		C313.3	To understand the clearly the abstraction of real time interfacing elements to data acquisitions,
		C313.4	Discuss the various mechatronics system using the knowledge and skill acquire through the course And also from given case studies
		C313.5	Understand and explain the concepts of micro mechatronics system principles and applications of Mechatronics components and challenging in the area of mechatronics system.
49	C314 - Object Oriented Programming in C++ (MT6604)	C314.1	Understand the features of C++ supporting object oriented programming
		C314.2	Understand the relative merits of C++ as an object oriented programming language
		C314.3	Understand how to produce object-oriented software using C++
		C314.4	Understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism
		C314.5	Understand advanced features of C++ specifically stream I/O, templates and operator overloading
50	C315 - Advanced Manufacturing Technology (MT6001)	C315.1	The students can able to sheet metal process and use this in industry for component production.
		C315.2	To introduce machining principles and processes in the manufacturing of precision components and products that use conventional and nonconventional technologies
		C315.3	Understand the basics and working principles of various surface finishing and hardening process.
		C315.4	Knowledge on EDM & ECM process and their application

S.NO	COURSE NAME	COURSE OUT COMES	
	C315	C315.5	To give basic understanding of the machining capabilities, limitations, and productivity of advanced manufacturing processes.
51	C316 - Micro Controller and PLC Laboratory (MT6611)	C316.1	To familiarize with the assembly level programming
		C316.2	Design circuits for various applications using microcontrollers
		C316.3	An in-depth knowledge of applying the concepts on real- time applications
		C316.4	Students will be able to describe typical components of a Programmable Logic Controller.
		C316.5	Students will be able to explain the basic concepts of a Programmable Logic Controller.
52	C317 - Object Oriented Programming Laboratory (MT6612)	C317.1	Gain the basic knowledge on object oriented concepts.
		C317.2	Develop applications using object oriented programming concepts.
		C317.3	Implement features of object oriented programming to solve real world problems.
		C317.4	Implement features of object oriented programming using java.
		C317.5	Perform multitasking process using java application
53	C318 - Applied Hydraulics and Pneumatics Laboratory (MT6613)	C318.1	Recognize standard schematic symbols for common fluid power components.
		C318.2	Understand and troubleshoot basic fluid power, electro-hydraulic, and electro-pneumatic circuits using schematic diagrams.
		C318.3	Understand the operation, application, and maintenance of common fluid power components such as pumps, compressors, valves, cylinders, motors, rotary actuators, accumulators, pipe, hose, and fittings.
		C318.4	Understand hazards of hydraulic and pneumatic circuits and be able to work safely.
		C318.5	To design and draw basic and advanced circuits for given problem descriptions
54	C401 - Medical Mechatronics (MT6701)	C401.1	Explain different measurement techniques used in physiological parameters measurement.
		C401.2	Describe the sensors and signal conditioning circuits used in biomedical engineering
		C401.3	Understand about various amplifiers, recording and display devices.
		C401.4	Differentiate the working of recorders and explain the advanced systems used in medicine
		C401.5	Understand about various Bio- medical diagnostics instrumentation.
	ation	C402.1	Understand different methods for random number generation

S.NO	COURSE NAME	COURSE OUT COMES	
55	C402 - Modelling and Simulation (MT6702)	C402.2	Understand different methods for random number generation
		C402.3	Understand different methods for random number generation
		C402.4	Be able to describe the components of continuous and discrete systems and simulate them
		C402.5	Be able to describe the components of continuous and discrete systems and simulate them
56	C403 - Robotics and Machine Vision System (MT6703)	C403.1	Describe the fundamental concept of Robot Anatomy, Co-ordinate Systems, Work envelope types of Robots
		C403.2	Classify the Robot Drive and Design Considerations of Robot Drive Systems, End Effectors and types of Grippers
		C403.3	Differentiate various robot sensors, vision systems and their perception principles that enable a robot to analyze their environment, reason and take appropriate actions toward the given goal.
		C403.4	Identify and able to solve problems in Robot kinematics and Robot programming Languages
		C403.5	Impart the Safety Considerations for Robot Operations, and implementation of Robots in Industries
57	C404 - Automobile Engineering (ME6602)	C404.1	Apply basic science and engineering fundamental knowledge for identify and recognize the vehicle structure and engines to sustainable transportation for society in different condition.
		C404.2	Identify and understand the processes that meet the specified needs with appropriate consideration for engine auxiliary system with different circumference of practical.
		C404.3	Identify and select the power transmission processes of automobile that meet the specified needs with appropriate consideration through different manner for practical cases of transportation.
		C404.4	Develop the knowledge on steering; brakes and suspension systems for improve the design in automobiles.
		C404.5	Illustrate the awareness of alternative energy sources on automobiles for public health and environmental need for sustainable development.
58	C405 - Industrial Electronics and Applications (MT6004)	C405.1	Learn about the latest electronic devices available in industry.
		C405.2	Be able to effectively provide detailed explanation to the structure and operation of common linear components
		C405.3	Learn about the digital ICs and sensory electronic devices
		C405.4	Use tools/test equipment to analyze electronic components

S.NO	COURSE NAME	COURSE OUT COMES	
	C40	C405.5	Apply critical thinking in solving industrial electronic problems
59	C406 - Marketing Management (MG6072)	C406.1	Better formulation of Marketing Strategies, Marketing Mix Decisions, Customer Relationships and Enhanced Advertising of Products
		C406.2	The learning skills of Marketing will enhance the knowledge about Marketer's Practices and create insights on Advertising, Branding, Retailing and Marketing Research.
		C406.3	Develop comprehensive strategic and tactical plans for an organization
		C406.4	Demonstrate ethical and socially responsible behaviour.
		C406.5	Develop self leadership strategies to enhance personal and professional effectiveness
60	C407 - Computer Aided Design and Computer Aided Manufacturing Laboratory (MT6711)	C407.1	Model and assemble a given three dimensional engineering components
		C407.2	Perform various analyses on simple structures for the application of different loads.
		C407.3	Generate CNC programs for a given components to work with CNC machines
		C407.4	Design and Create Mechanical Components & Simulation of process using CAM Software with G and M codes.
		C407.5	Develop Programming skills and crate an component for required drawing, Simulate the prepared part programme using available simulation software's. And Prepare the parts on CNC
61	C408 - Robotics Laboratory (MT6712)	C408.1	Use of any robotic simulation software to model the different types of robots and calculate work volume for different robots
		C408.2	Understand kinematics analysis of robot manipulators
		C408.3	Have an understanding of the functionality and limitations of robot actuators and sensors
		C408.4	Understand and be able to apply a variety of techniques to solve problems in areas such as robot control and navigation
		C408.5	Describe different mechanical configurations of robot manipulators
62	C409 - Design and Fabrication Project (MT6713)	C409.1	Design and Fabricate the machine element or the mechanical product
		C409.2	Demonstrate the working model of the machine element or the mechanical product.
		C409.3	Design, analyze, realize / simulate a physical system by using the technology they learnt during the program
		C409.4	Integrate various systems into one Mechatronics product
		C409.5	Disseminate his work both in oral and written format.

S.NO	COURSE NAME	COURSE OUT COMES	
63	C410 - Automotive Electronics (MT6801)	C410.1	Identify the emissions laws and importance of emission standards and norms (Euros & BS)
		C410.2	To understand the concept of electronic ignition system and electronic injection system components and Their functions.
		C410.3	To select and applications of sensors and set of necessary mechanical quantities, temperature and Appropriate actuators.
		C410.4	To pinpoint electronic engine control system problems with diagnose system latest trend in automobile Tools.
		C410.5	Illustrate the chassis components and vehicle condition monitoring and safety system
64	C411 - Virtual Instrumentation (MT6005)	C411.1	To describe about virtual instrumentation.
		C411.2	Get adequate knowledge VI tool sets
		C411.3	To describe data acquisition
		C411.4	To get introduced and understand to VI programming techniques
		C411.5	To get an adequate knowledge application of virtual instrumentation
65	C412 - Professional ethics in engineering (GE6075)	C412.1	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.
		C412.2	To provide basic knowledge about engineering Ethics
		C412.3	To provide basic familiarity about Engineers as responsible Experimenters
		C412.4	To have an idea about the safety, responsibilities and rights
		C412.5	To have an idea about th global issues
66	C413 - Project Work (MT6811)	C413.1	Demonstrate a sound technical knowledge of their selected project topic.
		C413.2	Undertake problem identification, formulation and solution.
		C413.3	Design engineering solutions to complex problems utilising a systems approach.
		C413.4	Conduct an engineering project
		C413.5	Communicate with engineers and the community at large in written an oral forms.