

| COURSE | C.O CODE | COURSE OUTCOME DESCRIPTION |
|--------------------------------|-----------------|---|
| English | C111.1 | Apply The Four Languages Learning Skills-Listening, Speaking, Reading, Writing (Lsrw) For Professional Success. |
| | C111.2 | Employ Knowledge Of Grammatical Structures And Vocabulary In Speech And Writing |
| | C111.3 | Apply Effective Communication Skills To Enhance Professional Possibilities. |
| | C111.4 | Develop Acceptable Personality Traits Suitable For Chosen Profession. |
| Mathematics-I | C112.1 | Apply The Partial Differentiation Techniqueto Solve Certain Problem Arise In Engineering. |
| | C112.2 | Solve The Differential Equations Of First Order And First Degree Related To Various Engineering Applications. |
| | C112.3 | Solve The Linear Higher Order Differential Equations With Constant Coefficients. |
| | C112.4 | Examine The Nature,Interval Of Convergence Of Infinite Series. |
| Mathematics-II | C113.1 | Solve System Of Linear Simultaneous Equations Of Various Matrix Methods. |
| | C113.2 | Apply Eigen Value Computation Techniques To Reduce A Given Quadratic To Canonical Form |
| | C113.3 | Apply Laplace Transforms Functions For Solving Ordinary Differential Equations. |
| | C113.4 | Apply Special Functions To Evaluate Improper Integrals. |
| Physics | C114.1 | Explain The Laws Of Thermodynamics, Efficiency Of Heat Engine And Their Importance In Engineering. |
| | C114.2 | Study The Importance Of Maxwell Equations In Electromagnetic Fields. |
| | C114.3 | Identify Various Optical Phenomena And Their Importance In Engineering. |
| | C114.4 | Understand The Working Of Lasers & Its Propagation Through Optical Fibers And Importance Of Ultrasonic |
| | C114.5 | Acquire The Knowledge Of Superconductors, Nanomaterials And Their Utilization In Various Applications. |
| Engg Graphics | C115.1 | Draw Basic Components Of Engineering Drawing Viz Geometric Constructions, Curves Etc. |
| | C115.2 | Construct Scales: Plain, Diagnol And Vernier |
| | C115.3 | Draw Orthographic Projections Of Points, Lines And Solids As Per The International Standards. |
| | C115.4 | Draw Sectional Drawings And Developments As Per National And International Standards. |
| | C115.5 | Draw Solid Machine Components Using Various Drawing Techniques Viz Isometric. |
| Ethics and Moral Values | C116.1 | Understand The Values In Education And Real lfe |
| | C116.2 | Understand The Values In Respective Professions And Analyze The Ethical Role Of Engineers |
| | C116.3 | Understand The Concept Of Harmony In Life And Moral Responsibility Of Engineers. |
| | C116.4 | Understand Environmental Ethics And Apply In Real Life |
| Physics Lab | C117.1 | Apply The Knowledge Of Different Phenomena Of Light Like Interference, Diffraction And Handle Various Optical |
| | C117.2 | Verify The Laws Of Thermo Dynamics, Electro Magnetism And Stretched String. |
| | C117.3 | Draw The Relevance Between Theoretical Knowledge And The Means To Imply It In A Practical Manner By |
| Work Shop | C118.1 | Follow Necessary Saftey Precations While Operating Equipment And Tools To Avoid Accidents In Workshop. |
| | C118.2 | Apply Wood Working Knowledge In Making Simple Wood Joints By Selecting Appropriate Carpentry Tools. |
| | C118.3 | Apply Development Of Surfaces Concept In Producing Simple Sheeet Metal Works With The Use Appropriate |
| | C118.4 | Prepare Simple Fitting Joints With The Use Of Proper Fitting Tools |

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|---|---------------|--|
| Mathematics-III | C121.1 | Apply The Concept Of Lines, Planes, Spheres And The Students Are Through In Defining And Evaluating |
| | C121.2 | Solve Double And Triple Integrals To Find Areas And Volumes. |
| | C121.3 | Apply Special Functions To Evaluate Improper Integrals. |
| | C121.4 | Compute Fourier Seriesfor Different Function And Also Half Range Series Certain Types Of Functions. |
| Computer Programming and Numerical Methods | C122.1 | Identify Appropriate C Language Constructs To Solve Problems |
| | C122.2 | Understand The Concepts Of Homogeneous Data Types To Solve Different Problems |
| | C122.3 | Apply The Concepts Of Function Modules, Its Usage And Memory Allocation Using Pointers |
| | C122.4 | Understand The Concepts Of Heterogeneous Data Types And File Handling Feature In C |
| | C122.5 | Solve System Of Linear Algebraic Equations And Apply Newton'S Forward & Backward Interpolation For Equal Intervals, Langranges'S Formulae For Unequal Intervals |
| | C122.6 | Describe The Concept Of Numerical Integration And Numerical Solutions Of Differential Equations |
| Metallurgy & Materials Engineering | C123.1 | Understand The Crystal Structure And Classification Of Materials. |
| | C123.2 | Understand Different Phase Diagrams And Its Uses. |
| | C123.3 | Select Suitable Heat-Treatment Process To Achieve Desired Properties Of Metals And Alloys. |
| | C123.4 | Understand The Concept Of Composites And Nano Material To Fulfil Human Needs. |
| Chemistry | C124.1 | Select The Methods Used For Purification Of Water For Domestic And Industrial Purposes |
| | C124.2 | Identify The Advantages And Limitations Of Plastics, Building Materials And Their Use In Day To Day Life |
| | C124.3 | Select The Suitable Methods Of Corrosion Control. |
| | C124.4 | Identify The Fuels Which Are Commonly Used And Their Economics, Advantages And Limitations. |
| | C124.5 | Obtain The Knowledge Of Semiconductors, Super Conductors And Liquid Crystals |
| History of Science & Technology | C125.1 | Understand About The Scientific History Of India, A Particular Period'S Of Indian Cultural Habitats And The How To Improvements Of Science And Tech. |
| | C125.2 | Understand About Policy Resolution Statements Of India, And Csir Activities. |
| | C125.3 | Understand The Applications Bio-Technology & Its Applications Like Dna Finger Printing, Cloning, Tissue Culture. |
| | C125.4 | Understand About The Indian Defense Research And Their Imp. & Ocean Development And Biological Resources, & Research Institutions. Understand About The Indian Satellites, Launch Vehicle Technology, Types Of Satellites Etc., Technology Transfer And Fore Casting |
| Chemistry Lab | C126.1 | Obtain The Knowledge Of Acid-Base Titrations To Determine The Strength Of Acid And Base Solutions. |
| | C126.2 | Gain The Knowledge Of Redox Titrations To Determine The Concentration Of Samples Such As Ores And Oxalic Acid Using Different Indicators. |
| | C126.3 | Obtain The Knowledge Of Complexometry Titrations To Determine The Hardness Of Given Water Sample By Edta Method. |
| | C126.4 | Gain The Knowledge Of Commonly Used Instrument Ph Meter To Determine The Strength Of Given Acid Solution. |
| | C127.1 | Explain Computer Programming Concept |

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|--|-----------------|--|
| Computer Programming and Num. Methods Lab | C127.2 | Prepare Algorithm And Flowchart To Solve Simple Engineering Problems |
| | C127.3 | Write C Program To Solve Simple Engineering Programs Using Control Statements, Arrays And Functions |
| | C127.4 | Write C Program To Solve Simple Engineering Programs Using Pointers, Function Call By Value And Function Call By Reference |
| | C127.5 | Write C Program To Solve Simple Engineering Programs Using Structures And Files |
| | C127.6 | Explain About Sources Of Errors In Numerical Methods |
| | C127.7 | Identify Sources Of Errors In Numerical Methods |
| | C127.8 | Students Will Have A Fundamental Idea To Solve Partial Differential Equations. |
| English Language Lab | C128.1 | Make Students Recognize The Sounds Of English Through Audio Visual Aids |
| | C128.2 | Help Students Build Their Confidence And Help Overcome Their Inhibitions And Self Consciousness While Speaking In English |
| | C128.3 | Familiarize The Students With Stress And Intonation And Enable Them To Speak English Effectively. |
| Mathematics – IV | C211.1 | Apply Vector Operations. |
| | C211.2 | Apply Different Theorems Related To Vector Integration Like Greens, Stokes And Gauss Divergence Theorem. |
| | C211.3 | Understand And Apply The Partial Differential Equation And Physical Problem. |
| | C211.4 | Use Integral And Fourier Transform Of A Given Function In Solving Problems |
| Engineering Mechanics | C212.1 | Analyze Rigid Bodies (In Plane And Space) And Suspension Cables By Applying Various Laws Of Static Equilibrium Conditions. |
| | C212.2 | Analyze The Rigid Bodies By Applying Laws Of Friction And Static Equilibrium Conditions. |
| | C212.3 | Analyze The Various Trusses And Frames |
| | C212.4 | Find The Centroid And Center Of Gravity For Various Plane And Solid Bodies |
| | C212.5 | Apply Dynamic Equilibrium Conditions For The Bodies In Kinetics (D'Alembert'S Principle, Impulse-Momentum, Work Energy Method) |
| | C212.6 | Apply Dynamic Equilibrium Conditions For The Bodies Are In Kinematics |
| Mechanics of Solids | C213.1 | Acquire Knowledge On Simple Stress, Strain And Deformation Due To External Forces In Various Components |
| | C213.2 | Solve Center Of Gravity And Moment Of Inertia Of Composite Sections |
| | C213.3 | Analyze Deflection, Bending Stress And Shear Stress In Beams Using Shear Force And Bending Moment Diagrams |
| | C213.4 | Utilize "Theory Of Failure" For The Designing Thin Cylinder Shell And Shafts |
| Basic Thermodynamics | C214.1 | Explain Basic Concepts Of Thermodynamics |
| | C214.2 | Identify Differences Between Perfect As And Real Gas And Their Relations |
| | C214.3 | Apply Concept Of First Law Of Thermodynamics And Various Closed And Open Systems |
| | C214.4 | Apply Second Law Of Thermodynamics And Its Corollaries To Various Real Life |
| | C214.5 | Estimate Efficiencies, Mean Effective Pressure Etc Of Power Cycles |
| | C215.1 | Explain Basic Manufacturing Concepts Like Product Cycle, Types Of Production And Casting Process |

| COURSE | C.O CODE | COURSE OUTCOME DESCRIPTION |
|---------------------------------------|-----------------|---|
| Manufacturing Processes | C215.2 | Describe The Importance And Principle Of Metal Forming And Fabrication Processes |
| | C215.3 | Describe The Principle Of Sheet Metal Operations |
| | C215.4 | Discuss Welding Processes, Soldering And Brazing And Analyze Their Defects |
| Industrial Electronics | C216.1 | Explain Operation Of Various Electronic Components And Devices And Their Industrial Applications. |
| | C216.2 | Discuss Fundamentals Of Digital Electronics And Circuits. |
| | C216.3 | Describe Introduction Of 8085 Microprocessor, Architecture And Basic Programming. |
| Mechanical Engg Drawing | C217.1 | Constrct Orthographic Projections And Sectional Views Of Different Mechanical Components. |
| | C217.2 | Sketch The Various Types Of Screw Fasteners, Riveted And Welding Joints. |
| | C217.3 | Sketch The Various Types Of Shaft Couplings , Bearings And Pipe Joints. |
| | C217.4 | Construct The Assemblies Of Engine Parts , Machine Parts. |
| Mechanics of Solids Lab | C218.1 | Explain Different Materials And Their Material Properties |
| | C218.2 | Analyze The Properties In Material Selection |
| | C218.3 | Ability To Know Different Materials And Their Material Properties |
| | C218.4 | Analyze The Properties In Material Selection |
| | C218.5 | Determine The Moulding Sand Properties |
| Mechanical Engineering Lab – I | C219.1 | Draw The Valve Timing Diagrams Of 2 Stroke/ 4 Stroke Engines. |
| | C219.2 | Calibrate The Given Pressure Guage. |
| | C219.3 | Determine The Flash & Fire Points, Kinematic & Dynamic Viscosities And Calorific Values Of Given Samples Of Fuel. |
| | C219.4 | Determine The Inertia Of Flywheel And Connecting Rod. |
| | C219.5 | Determine The Modulus Of Rigidity Of Given Wire Using Torsion Pendulum. |
| Electrical Technology | C221.1 | Explain Magnetic Circuits, Energy Conversion Principles In Dc Machines & Ac Machines. |
| | C221.2 | Discuss Working Principle, Construction, Applications And Testing Of Ac & Dc Machines |
| | C221.3 | Explain Working Principle, Construction Of Measuring Instruments |
| | C221.4 | Find Voltages , Currents, Torque,Speed And Characteristics Of Given Machine |
| Advanced Strength of Materials | C222.1 | Constructing Shear Force And Bending Moment Diagrams For Statically Indeterminate Beams. |
| | C222.2 | Investigate Various Structural Members Subjected To Different Loading Conditions For Determination Of Stresses And Strains |
| | C222.3 | Analyse The Stress Distributions Across The Thickness Of Rotating Machine Members, And Thick Cylindrical Shells And Compound Cylinders. |
| | C222.4 | Apply Different Theories To Design The Columns And Struts Subjected To Different Load Conditions. |
| Theory of Machines | C223.1 | Explain Common Mechanisms Used In Machines And Everyday Life. |
| | C223.2 | Calculate Mobility (Number Of Degrees-Of-Freedom) And Enumerate Rigid Links And Types Of Joints Within Mechanisms |

| COURSE | C.O CODE | COURSE OUTCOME DESCRIPTION |
|--|-----------------|---|
| Theory of Machines | C223.3 | Identify The Basic Relations Between Distance, Time, Velocity, And Acceleration And Create A Schematic Drawing Of A Real-World Mechanism. |
| | C223.4 | Calculate Loss Of Power Due To Friction In Various Machine Elements |
| Metal Cutting & Machine Tools | C224.1 | Describe The Working Principle, Classification And Specification Of Various Machine Tools Of Secondary Manufacturing Processes. |
| | C224.2 | Explain The Mechanisms, Involved In Various Machine Tools. |
| | C224.3 | Examine The Machining Dynamics Of Various Machine Tools. |
| | C224.4 | Classify The Unconventional Machining Methods And Discuss Their Advantages And Limitations. |
| Environmental Science | C225.1 | Ability To Acquire Knowledge About The Importance Of Environment & Availability Of Resources |
| | C225.2 | Explain Different Environmental Challenges Induced Due To Anthropogenic Activities As Well As Nature. |
| | C225.3 | Identify The Solutions To The Environmental Problems For The Sake Of Healthy Life By Protecting Our Natural Resources. |
| | C225.4 | Create Awareness On The Social Issues, Environmental Protection Acts |
| | C225.5 | Discuss The Environmental Impact Of Developmental Activities. |
| Engineering Economics | C226.1 | Describe Concepts Of Demand , Elasticity Of Demand, Factors Of Production And Different Economic Systems. |
| | C226.2 | Describe The Concepts Of Market Structures And Pricing Policies. |
| | C226.3 | Differentiate Different Forms Of Business Organizations And Phases Of Business Cycles. |
| | C226.4 | Apply The Concepts Of Costing And Bep Analysis To Solve Simple Problems |
| | C226.5 | Evaluate Final Account Statements |
| CAD & Drafting (Production Drawing) | C227.1 | Describe The Conventions Used In A Production Drawing. |
| | C227.2 | Determine Limits And Fits And Allocate Tolerances For Machine Components.. |
| | C227.3 | Draw Single And Multi Point Cutting Tools And Cnc Machine Tools. |
| | C227.4 | Describe Stock Strip Layouts, Sheet Metal And Forging Dies. |
| Manufacturing Technology Lab-I | C228.1 | Explain Foundry, Sand Moulding Procedures In A Foundry, Various Foundry Shop'S Hand Tools. |
| | C228.2 | Handle The Electrode Holder For Laying Welding Beads, Understand The Operation Of Welding Transformer And Generator, Know How To Perform Various Welding Joint Operations |
| | C228.3 | Conduct Jobs On Lathe, Shaper And Milling Machine |
| | C228.4 | Prepare Mould Cavity And Making Pattern |
| Electrical Technology Lab | C229.1 | Perform The Load Test, Occ, Load Characteristics And Speed Control Of Dc Shunt And Dc Series Motor |
| | C229.2 | Perform The Load Test, Oc And Sc Test On A Single Phase Transformer |
| | C229.3 | Conduct The Load Test, Speed Control On Various Phase Of Induction Motor |
| | C229.4 | Examine The Regulation Of An Alternator By Emf Method |
| Dynamics of Machinery | C311.1 | Analyze Stabilization Of Aircrafts, Naval Ship And Automobile Vehicles By Gyroscopic Coupy |
| | C311.2 | Design The Cam & Gear Mechanisms At Different Motions |
| | C311.3 | Discuss Reciprocating, Rotating , V-Engines To Obtain Perfect Balance |

| COURSE | C.O CODE | COURSE OUTCOME DESCRIPTION |
|--|-----------------|---|
| | C311.4 | Determine The Frequencies Of Various Vibrating Bodies |
| Advanced Thermodynamics-I | C312.1 | Explain Properties Of Pure Substances, Formation Of Steam, Steam Tables & Mollier Charts |
| | C312.2 | Apply Gas Laws To Gases And Vapour Mixtures. |
| | C312.3 | Solve Problems On Vapour Power Cycles, Steam Nozzles, Steam Turbines And Steam Condensers. |
| | C312.4 | Analyze Refrigeration Cycles. |
| | C312.5 | Explain Psychrometric Process And Air Conditioning Systems |
| Industrial Engineering & Management | C313.1 | Discuss The Management Practices In Industries And Handling Industrial Disputes. |
| | C313.2 | Describe Production System And Use The Concept Of Productivity In Streamlining A Production System. |
| | C313.3 | Analyze The Arrangement And Maintenance Of Equipment In Industry. |
| | C313.4 | Evaluate Material Management, Material Handling Practices And Quality Control Procedures In The Industry. |
| | C313.5 | Apply Work Study Techniques To Improve Productivity. |
| Operations Research | C314.1 | Apply Linear Programming Model And Assignment Model To Domain Specific Situations. |
| | C314.2 | Analyze The Various Methods Under Transportation And And Queuing Theory Mode And Apply Theml For Testing The Closeness Of Their Results To Optimal Results. |
| | C314.3 | Analyze The Concepts Of Replacement And Game Theory And Apply Them For Arriving At Optimal Decisions. |
| | C314.4 | Apply The Concepts Of Pert And Cpm For Decision Making And Optimally Managing Projects. |
| Measurements and CNC | C315.1 | Apply The Principles Of Linear, Angular And Optical Methods Of Measurements |
| | C315.2 | Analyze And Categorize The Type Of Fit In Assembly Operations. |
| | C315.3 | Apply The Concepts Of Measurement And Its Analysis, Which Includes Advanced Optical Methods For Various Physical Variables. |
| | C315.4 | Identify Various Measurement Techniques Of Surface Finish And Testing Acceptability Of Different Machine Tools. |
| | C315.5 | Develop Part Programs For Nc, Cnc And Dnc Operations. |
| Elective-I (Finite Element Analysis) | C316.1 | Apply Finite Element Method To Solve Problems In Solid Mechanics. |
| | C316.2 | Formulate And Solve Problems In One Dimensional Structures Including Trusses, Beams And Frames. |
| | C316.3 | Formulate Fe Characteristic Equations For Two Dimensional Elements And Analyze Plane Stress, Plane Strain And Axi-Symmetric Problems. |
| | C316.4 | Formulate Fe Characteristic Equations For Higher Order Elements Such As Quadratic Bar Element, 6-Node Triangle, 4,8,9-Node Quadrilateral Elements And Apply Numerical Integration For Finding Stiffness Matrix Of Different Elements. |
| MOOCS-I (Principles of Metal Forming) | C317.1 | Classify The Major Process/Processes Of Manufacturing Used For Given Application |
| | C317.2 | Analyze The Effect Of Parameters Influencing Metal Forming And Compare Hot Working And Cold Working With Applications |
| | C317.3 | Interpret Capabilities And Applications Of Bulk Metal Forming Processes And Sheet Metal Work |
| | C317.4 | Identify Tooling And Equipments Required For Important Metal Forming Processes. |
| | C317.5 | Examine Effects Of Friction & Lubrication And Causes Of Common Defects In Metal Forming |

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|--|-----------------|---|
| Mechanical Engineering Lab – II | C318.1 | Analyze The Performance Characteristics Of An Internal Combustion Engines |
| | C318.2 | Determine The Static Pressure Distribution Round An Aero Foil And Heat Balance Sheet For Diesel Engine |
| | C318.3 | Evaluate Lift Coefficient And Drag Coefficient For A Given Aerofoil And Gyroscopic Reactive Couple |
| | C318.4 | Analyze The Characteristics Of Air Compressor And Air Blower |
| Manufacturing Technology Lab-II | C319.1 | Analyze Characteristic Curves For Lathe Machine |
| | C319.2 | Apply The Mechanics Of Metal Cutting To Check Tool Angles For A Single Point Cutting Tool |
| | C319.3 | Understand The Concept Of Chip Formation On Shaping Machine |
| | C319.4 | Analyze The Torque On Drilling And Milling Machine |
| | C319.5 | Evaluate The Moulding Sand Properties |
| Fluid Mechanics & Machinery | C321.1 | Apply The Basic Concepts Of Continuum, Properties Of Fluid, Pressure Measurement, Hydrostatic Forces On The Surfaces, Buoyancy & Floatation In Fluid Flow Problems |
| | C321.2 | Solve Problems On Kinematics & Dynamics Of Fluid Flow In Engineering Applications With The Help Of Euler And Bernoulli'S Equations. |
| | C321.3 | Analyze The Boundary Layer Theory, Apply Flow Through Pipes And Flow On Free Surface Concepts In Solving Real Life Flow Problems |
| | C321.4 | Solve The Problems Of Hydraulic Machines Like Turbines, Pumps And Other Fluid Machines. |
| CAD/CAM | C322.1 | Apply The Basic Fundamentals Of Computer Aided Design And Manufacturing. |
| | C322.2 | Explain The Basic Principles Of Production Drawing, The Cad/Cam Techniques That Can Be Utilized For Different Engineering Applications |
| | C322.3 | Describe The Industrial Products By Fundamental Knowledge Of Geometric Modeling, Finite Element Analysis And Advanced Manufacturing Concepts |
| | C322.4 | Explain The Benefits Of Group Technology, Capp, Computer Aided Inspection And Quality Control In Manufacturing |
| | C322.5 | Describe The Prerequisites To Work In Cad/Cam Industry After Successful Completion Of The Course |
| Design of Machine Elements | C323.1 | Evaluate The Various Steps Involved In The Design Process By The Fundamentals Of Stress Analysis, Theories |
| | C323.2 | Demonstrate Knowledge On Basic Machine Elements Used In Machine Design To Withstand The Static And |
| | C323.3 | Explain The Design Of Power Transmission For Safe Operation |
| | C323.4 | Analyze Various Structural Joints |
| Production Planning and Control | C324.1 | Report The Functions Of Production Control, Various Production System, Different Aspects Of Product Development And Break Even Analysis |
| | C324.2 | Investigate The Concept Of Method Study, Motion Study And Work Measurement Techniques |
| | C324.3 | Analyze The Problems In Lack Of Product Planning, Quantity Determination In Batch Production Capabilities In A Multi Product System |
| | C324.4 | Discuss About Production Scheduling, Production Control Systems, Progress Reporting And Expediting And It'S Techniques For Aligning Completion Times And Due Dates. |
| | C324.5 | Evaluate The Economic Order Quantity And Economic Lot Size In Inventory Control. |
| | C325.1 | Explain The Fundamentals Of Ic Engines |

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|--|-----------------|--|
| Advanced Thermodynamics-II | C325.2 | Calculate The Problems On Compressors And Pumps. |
| | C325.3 | Analyze The Gas Turbine Principles And Performance |
| | C325.4 | Evaluate The Principles Of The Jet Propulsion And Rocket |
| | C325.5 | Describe The Non Conventional Methods Of Power Generation. |
| Elective-II (AutoMobile Engineering) | C326.1 | Analyze The Functionality Of Various Components Of Automotive Vehicle Including Safety Aspects |
| | C326.2 | Describe And Differentiate Various Aspects Of Engines I.E., Classification, Performance, Combustion, Fuel Systems, Cooling And Lubrication Etc |
| | C326.3 | Explain The Affects Of Automotive Exhaust Emissions On The Environment And The Health Of Human Beings. And Also The Techniques Of Exhaust Emission Control/ Reduction Techniques Used In Modern Vehicles |
| | C326.4 | Understand The Various Aspects Of Chassis And Power Transmission Components From Prime Mover Of Automobile To The Road Wheels |
| | C326.5 | Explain The Suspension & Control Systems Of An Automobile And Exposed To Different Maintenance Procedures Of Automotive Vehicles And Tips For Safe Driving |
| MOOCS-II (Fundamentals of Welding Science and Technology) | C327.1 | Apply The Concept Of Quality Control And Testing Of Weldments In Industrial Environment By Using The Knowledge Of Design Principles In Weld Joints |
| | C327.2 | Identify The Various Welding Processes And Characterize Its Welding Power Sources |
| | C327.3 | Illustrate Various Manual Metal Arc Welding Processes And Their Applications |
| | C327.4 | Examine The Solidification Behavior And Structure Of Weld Zone With The Welding Parameters |
| | C327.5 | Evaluate Remedial Measures To Minimize Defects In Welding Of Cu, Al, Ti And Ni And Microstructural Study Of Weld Joints. |
| Metrology and Mechatronics Lab | C328.1 | Apply Measuring Instruments To Test Different Components For Their Dimensional Accuracy |
| | C328.2 | Apply The Concept Of Gear Metrology To Measure Gear Parameters. |
| | C328.3 | Apply The Concept Of Screw Thread Metrology To Measure Screw Thread Parameters. |
| | C328.4 | Apply The Mechanics Of Metal Cutting To Measure Cutting Tool Angles. |
| | C328.5 | Apply Ladder Logic For Controlling A Mechanical Device And Execute The Program. |
| Industrial Engineering Lab | C329.1 | Find The Quality Of The Product Using Different Charts |
| | C329.2 | Determine The Impact Of Work On The Human Body And Also The Physiological Constraints Of The Body |
| | C329.3 | Analyze The Standard Time Required For Completing A Job By Different Methods |
| | C329.4 | Hypothesize The Method Of Doing Work By Applying Principle Of Motion Economy And Method Study Charts |
| | C329.5 | Explain The Basic Probability Distributions |
| Machine Design | C411.1 | Identify Engineering Challenges Regarding The Human Needs In Daily Life. |
| | C411.2 | Design Machine Components Of Ic Engine Parts Based On Maximum Bending And Twisting Moment |
| | C411.3 | Solve The Design Problems Of Machine Components Like Gears, Brakes, Clutches |
| | C411.4 | Design The Appropriate Transmission Elements To Meet Specified Objectives And Also The Induced Stresses For Safe Operating Conditions |

| COURSE | C.O CODE | COURSE OUTCOME DESCRIPTION |
|--|---------------|--|
| Heat and Mass Transfer | C412.1 | Solve Steady And Un-Steady State Conduction Heat Transfer Problems Related To Composite Slabs, Cylinders, Spheres, Fins And Lumped Parameter Systems. |
| | C412.2 | Calculate Heat Transfer Coefficients And Other Parameters In Forced And Natural Convection Heat Transfer Situations Under Laminar And Turbulent Flow Conditions. |
| | C412.3 | Analyze The Performance Of Different Types Of Heat Exchangers After Determining The Design Parameters Using LmtD And Ntu Methods. |
| | C412.4 | Apply The Concepts Of Boiling And Condensation Heat Transfer. |
| | C412.5 | Apply The Basic Laws Of Radiation Heat Transfer And Use Of Shape Factor In Deriving Equations For Certain Geometries. |
| Refrigeration & Air-conditioning | C413.1 | Explain Basic Principles Of Refrigeration And Air Conditioning |
| | C413.2 | Analyze Air Refrigeration Systems, Vapor Compression Refrigeration Systems, Vapor Absorption Refrigeration Systems, And Steam Jet Refrigeration Systems |
| | C413.3 | Explain Properties Of Refrigerant And Various Components Used In The Refrigeration And Air-Conditioning Systems |
| | C413.4 | Describe Psychometric Properties Of Air And Utilize The Principles Of Psychometric In The Design And Study Of Air Conditioning Equipments |
| Statistical Quality Control | C414.1 | Recognize The Philosophy And Basic Concepts Of Quality Improvement. |
| | C414.2 | Demonstrate The Ability To Design, Use, And Interpret Control Charts For Variables And Attributes |
| | C414.3 | Analyze Process Capability And Measurement System Capability. |
| | C414.4 | Design Different Types Of Sampling Plans |
| Elective-III (Renewable Energy Technologies) | C415.1 | Demonstrate The Principle And Working Of Solar Energy, Wind Energy And Its |
| | C415.2 | Illustrate The Working Of Biomass, Geothermal Land Ocean Energies. |
| | C415.3 | Demonstrate The Energy Efficient Electrical Systems And Mechanical |
| | C415.4 | Classify The Various Energy Efficient Processes. |
| Elective-IV (Instrumentation and control systems) | C416.1 | Explain The Basic Principles Of Instrumentation And Control Systems. |
| | C416.2 | Apply Various Methods Of Measurements In Instrumentation. |
| | C416.3 | Explain Mathematical Modeling Of Mechanical Systems. |
| | C416.4 | Analyze Control Systems In Time Domain And Frequency Domain. |
| Heat and Mass Transfer Lab | C417.1 | Perform Steady State Conduction Experiments To Estimate The Thermal Conductivity Of A Solid And Overall Heat Transfer Coefficient Of A Composite Wall |
| | C417.2 | Perform The Heat Transfer Experiment On A Pin Fin And Obtain Variation Of Temperature Along The Length Of The Pin Fin |
| | C417.3 | Estimate The Heat Transfer Coefficients In Free And Forced Convection Environments |
| | C417.4 | Perform Radiation Experiments To Determine Stephen Boltzman Constant And Emissivity Of A Test Plate |
| | C417.5 | Estimate Condensation Heat Transfer Coefficients And To Determine Critical Heat Flux Values In Boiling |
| FMM Lab | C418.1 | Apply Fluid Properties And Principles To Various Flow Measuring Devices |
| | C418.2 | Calibrate Flow Measuring Devices |

| COURSE | C.O CODE | COURSE OUTCOME DESCRIPTION |
|--|-----------------|--|
| FMM Lab | C418.3 | Determine Losses In Pipes Due To Major And Minor Losses |
| | C418.4 | Analyze The Performance Of Hydraulic Turbine And Pumps Under Different Working Conditions |
| CAD/CAM Lab | C419.1 | Apply The Procedure Of The Basic Tools Of Catia Drawings |
| | C419.2 | Apply 2D,3D Drawings To Mechanical Components |
| | C419.3 | Draw The 2D,3D Drawings And Different Views Presentation |
| | C419.4 | Prepare Report Of Drawings And Basics Of G & M Codes |
| Project | C421.1 | Identify Complex Engineering Problems Relevant To The Society And Industry. |
| | C421.2 | Apply Modern Technologies, Tools And Systems In The Field Of Mechanical Engineering To Analyze The Identified Problem. |
| | C421.3 | Design And Implement A Viable Solution To The Problem. |
| | C421.4 | Apply Communication, Report Writing Skills & Presentation Skills. |
| | C421.5 | Develop The Team Work And Leadership Skills With Professional And Ethical Values. |
| MOOCS-III: Nature and Properties of Materials | C422.1 | Identify The Crystal Structures Of Metallic Materials. |
| | C422.2 | Enumerate The Fundamental Structure And Related Properties Of Individual Materials Classified As Metals, Ceramics Or Polymers , Composite Materials And Smart Materials By Free Hand Sketching And By Calculation Of Specific Physical And Chemical Properties |
| | C422.3 | Analyze The Microstructure With Properties, Processing And Performance Of Metals. |
| | C422.4 | Demonstrate The Experiments With Best Practices And Understands The Advantages And Limitations Of Different Processes |
| MOOCS-IV: Inspection and Quality Control in Manufacturing | C423.1 | Illustrate The Role Of Inspection And Measurement For Quality Control In Manufacturing. |
| | C423.2 | Examine Non Destructive Inspection Methods For Various Industrial Applications |
| | C423.3 | Examine Advanced Non-Destructive Techniques, Ndt Standards And Their Safety |
| | C423.4 | Test Different Components For Their Dimensional Accuracy |
| | C423.5 | Explain Concept Of Gear Metrology And Screw Thread Metrology To Measure Gear Parameters And Screw Thread Parameters |