



LORDS INSTITUTE OF ENGINEERING & TECHNOLOGY

Hyderabad-500091, TS.

Department of Mechanical Engineering

COURSE OUTCOMES (COS)

Course Outcomes: C211- Probability and Statistics & Complex Variables Year: II-I- Sem A.Y: 2019-20

C211.1	Understand the concept of Probability and random variable, Various discrete and continuous variables
C211.2	Learn the concept of Types of probability Distribution and evaluation of statistical parameters.
C211.3	Get the Idea of Statistical method of data Samples, testing of hypothesis
C211.4	Understand the concept of differentiation of complex variable
C211.5	Understand the concept of Integration of complex variable using cauchys integral theorem, integral formula and cauchy's residue theorem

Course Outcomes: C212 – Mechanics of Solids Year: II-I- Sem A.Y: 2019-20

C212.1	Understand the basic concepts of stress, strain and their relations for different sections and determine the behavior of the solid bodies, composite bars, and thermal stresses and strain energy, subjected to various types of loading.
C212.2	Understand the concepts of S.F and B.M apply for drawings of S.F and B.M diagrams for different beams with different loads and locate the maximum B.M and point of contra flexure.
C212.3	Apply the knowledge of S.F and B.M to determine flexural stresses and shear stresses for different sections.
C212.4	Evaluate Principal Stresses, Strains using analytical & graphical method and apply the concept of Theory of Various Failures for design.
C212.5	Understand and analyze the torsional stresses developed in the shafts. Able to identify the failure of Longitudinal and circumferential stresses of thin cylinder and spheres.

Course Outcomes: C213– Material Science and Metallurgy Year: II-I- Sem A.Y: 2019-20

C213.1	Understand the concept of different crystal structures along with its defects.
C213.2	Evaluate the different stages of iron in iron-iron carbide equilibrium diagram
C213.3	Understand and apply different types of heat treatment processes
C213.4	Analyze different heat treatment processes
C213.5	Analyze practical applications of metals, materials along with their composition structure and its importance in the field of mechanical engineering in practical life.

Course Outcomes: C214 – Production Technology Year: II-I- Sem A.Y: 2019-20

C214.1	Understand the basic concepts of casting and summarize various types of casting used in production.
C214.2	Understand the different type of welding and calculate the cost and time calculations on welding.
C214.3	Understand TIG MIG Soldering and Brazing and explain defects in these processes.
C214.4	Understand Hot and Cold work process along with rolling, bending, blanking piercing and drawing process and calculate forces in this process
C214.5	Understand the extrusion, forging and high energy rate forming processes and calculate forces in the process.

Course Outcomes: C215 – Thermodynamics**Year: II-I- Sem****A.Y: 2019-20**

C215.1	Understand the basic concepts of continuum, system, control volume, thermodynamic properties, thermodynamic equilibrium, temperature, and work and heat energy.
C215.2	Learn the laws of thermodynamics and apply them to refrigerators, heat engines, heat pumps compressors and nozzles etc.
C215.3	Understand and apply the concept of entropy and energy to thermodynamics systems
C215.4	Evaluate properties of pure substances, gases and their mixtures and to derive and apply property relations to thermodynamic problems.
C215.5	Evaluate Power Cycle and Refrigeration Cycle

Course Outcomes: C216 – Production Technology Lab**Year: II-I- Sem****A.Y: 2019-20**

C216.1	Prepare connecting rod pattern using wood.
C216.2	Determine the different techniques used in welding
C216.3	Determine the moisture content in moulding sand and strength of the sand
C216.4	Determine the hydraulic press operations for blanking and piercing
C216.5	Determine the various types of plastics and their processing techniques

Course outcomes: C217 – Machine Drawing Practice**Year: II-I- Sem****A.Y: 2019-20**

C217.1	Apply the general rules for dimensioning, sizes and placements of dimensions for holes, center, curved and tapered features.
C217.2	Obtain the knowledge of conventional representation of materials, common machine elements and parts such as screws, nuts, bolts, keys, gears, webs, ribs.
C217.3	Understand and evaluate different joints such as cotter joint, riveted joints and welded joints
C217.4	Create engineering and working drawings with dimensions and bill of materials during design and developments
C217.5	Evaluate and develop assembly drawings using part drawings and to analyze the functions of different parts in assembly, in future machine drawing standards can be used for safe design of assemblies.

Course outcomes: C218 – Material Science and Mechanics of Solids**Year: II-I- Sem****A.Y: 2019-20**

C218.1	Prepare and study microstructure of low carbon steel, medium carbon steel, high carbon steel
C218.2	Prepare and study microstructure of copper, Brass, Bronze, cast iron and white cast iron. Test the hardenability on Jominy End quench Test.
C218.3	Determine the young's modulus for ductile materials and Analyze the various points on stress strain diagram.
C218.4	Apply knowledge of bending stresses on Simply supported and Cantilever beam for different types of loads to the analysis of simple structures.
C218.5	Determine the modulus of rigidity and angle of twist for the different given torque for given specimen by torsion test, Calculate & Compare the hardness values for various materials. Experiment on a spring to interpret the stiffness and shear modulus.
C218.6	Analyse the compression strength of different materials, Apply the concept of impact loading and to determine toughness values for various materials. Determine the shear stresses by punch shear test.

Course outcomes: C219 – Constitution of India**Year: II-I- Sem****A.Y: 2019-20**

C219.1	Memorize the concepts of Indian Constitution and understand the salient features of Constitution of India.
C219.2	Understand the fundamentals of rights and state policies important and its implementation.
C219.3	Understand power between the union and states, understand the constitutional powers.
C219.4	Memorize the amendment power and understand the Indian constitutional amendment.
C219.5	Understand the President rule, National Emergency and fundamental right to equality.



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Course outcomes: C311 – Design of Machine Members – I Year: III-I Sem A.Y: 2019-20

C311.1	Understand fundamentals of design including material selection and axial retainment of rotating and the knowledge about the principles of design, component behaviour subjected to various types of complex loads, and criteria of failure to satisfy the applications
C311.2	Understand the principals involved in evaluating the shape and dimensions of a component, when components are subjected to fluctuating, alternating and reversible fatigue loading, and methods to reduce the stress concentration in different shape components.
C311.3	Design the different machine components such as Riveted and Welded joints, and to analyze the different ways in which riveted and welded joints can fail, and to describe how to design the safe joints to withstand the different types of loading for specific applications.
C311.4	demonstrate the design, development and use of knuckle joint, spigot cotter joint and cotter joint, strap end of a connecting rod and different keyways in engineering applications
C311.5	apply the basic knowledge of shafts and different shafts couplings to get the different complex kind of work done by forming and connecting them with other machine components to fulfill the various industrial, agricultural and daily needs of the society

Course outcomes: C312 – Thermal Engineering-I Year: III-I Sem A.Y: 2019-20

C312.1	Understand and apply the laws of Thermodynamics to analyze air standard cycles.
C312.2	Understand and evaluate the perform analysis of the major components and systems of IC engines.
C312.3	Understand working of compressors and abnormal combustion in CI and SI engines.
C312.4	Understand the principle and operation of Reciprocating Compressors
C312.5	Understand the working of gas turbines, cycles and performance of the turbines.

Course outcomes: C313 – Metrology and Machine Tools Year: III-I Sem A.Y: 2019-20

C313.1	Acquire knowledge of all metal removal machines
C313.2	Analyse operations of all metal removing machines and evaluate time for machining
C313.3	Study applications of metal removal machines, measuring instruments and CMM
C313.4	Measure angles, surfaces, edges, surface roughness, screw threads and gears with respective instruments accurately.
C313.5	Design gauges by taylors principles by applying concepts of fits a tolerances.

Course outcomes: C314 – Fundamentals of Management Year: III-I Sem A.Y: 2019-20

C314.1	Interpret basic concepts and theories of management
C314.2	Frame the concept and process of planning as well as decision making
C314.3	Analyse various structures of organization and chalk out the procedures from recruitment to retirement-the entire gamut of activities of human resource management
C314.4	Clarify different leadership styles and motivational theories in cross culture environment.
C314.5	Analyse the feed forward and backward controls and system and budgets

Course outcomes: C315 – Disaster Management Year: III-I Sem A.Y: 2019-20

C315.1	Understand the meaning of disasters, hazards and vulnerabilities
C315.2	Gain the knowledge in various concepts of Disaster management mechanisms such as response & recovery, prevention, mitigation & development.
C315.3	Acquire the information about various structural and non-structural measures.
C315.4	Understand the different coping strategies & changing concepts of disaster management.
C315.5	Evaluate and analyze various strategies for disaster management planning.

Course outcomes: C316 – Thermal Engineering Lab Year: III-I Sem A.Y: 2019-20

C316.1	Draw I.C. Engines Valve / Port Timing Diagrams
C316.2	Study of 2 Stroke and 4-Stroke CI Engine performances
C316.3	Evaluate Performance Test on Variable Compression Ratio Engine
C316.4	Execute Volumetric efficiency of Air – Compressor Unit
C316.5	Perform Dis-assembly / Assembly of Engines
C316.6	Understand and Study about Boilers

Course outcomes: C317 – Machine Tools Lab Year: III-I Sem A.Y: 2019-20

C317.1	Understand the importance of safety in machine tools lab and Students can recognize appropriate heat treatment process.
C317.2	Understand the operation of lathe machine to perform plane turning, step turning, taper turning, and knurling, chamfering, facing, and threading operations and will create models as per product drawings.
C317.3	Understand and Select the proper tools to work on a machine for the type Of Part required.
C317.4	Understand the operation of milling, drilling, grinding, slotting, and planing machines and prepare the job as per the part drawing.
C317.5	Able to select process parameters for operations and determine basic feeds and speeds on their machine.

Course outcomes: C318 – Engineering Metrology Lab Year: III-I Sem A.Y: 2019-20

C318.1	Evaluate the chordal addendum & chordal height of spur gear using Gear teeth vernier caliper.
C318.2	Comprehension of various alignment tests on lathe, tool maker's microscope & its applications.
C318.3	Evaluate the angle and taper measurements by using bevel protractor and sine bar.
C318.4	Evaluate the flatness of surface plate using spirit level and optical flat.
C318.5	Application of Thread measurements by 2 & 3 wire methods.

Course outcomes: C319 – Professional Ethics Year: III-I Sem A.Y: 2019-20

C319.1	Understanding basic purpose of profession, professional ethics and various moral and social issues.
C319.2	Awareness of professional rights and responsibilities of an Engineer, safety and risk benefit analysis of an Engineer
C319.3	Acquiring knowledge of various roles of Engineer in applying ethical principles at various professional levels
C319.4	Professional Ethical values and contemporary issues
C319.5	Excelling in competitive and challenging environment to contribute to industrial growth.



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COURSE OUTCOMES (COS)

Course Name: C411 CAD/CAM

Year: IV-I Sem

A.Y: 2019-20

C411.1	Demonstrate design process, automation and the benefits of CAD.
C411.2	Recognize the existing geometric modeling and develop a geometric modeling for a new component in design process.
C411.3	Write a CNC manual part program and understand the difference between manual part program and computer assisted part program.
C411.4	Implement Group Technology concept in modern manufacturing methods.
C411.5	Recognize the Flexible Manufacturing Layouts and understand the CIM system.

Course Name: C412 Instrumentation and Control System

Year: IV-I Sem

A.Y: 2019-20

C412.1	Understand the basic characteristics of instruments and study error measurements. Study the working of various transducers used in displacement measurement.
C412.2	Study the working principle of temperature and pressure measuring instruments.
C412.3	Enable the student to measure level, flow, speed, acceleration and vibration by using various instruments.
C412.4	Understand the concept of strain gauge for various measurement applications and study the working of Humidity, Force, Torque and power measuring instruments.
C412.5	Enable the students to understand basic elements of a control system and application of Various control systems for temperature, speed and position.

Course Name: C413 Power Plant Engineering

Year: IV-I Sem

A.Y: 2019-20

C413.1	Understand the sources of energy, layout, working of different circuits
C413.2	Understand the types, construction and plant layout with auxiliaries.
C413.3	Classify the hydroelectric power plant, dams and spillways.
C413.4	Analyze the different forms of non-conventional energy sources
C413.5	Determine the effluents from the power plants and input on environment pollutions.

Course Name: C414 CNC Technology

Year: IV-I Sem

A.Y: 2019-20

C414.1	Understand the fundamentals of CNC machine and design consideration of CNC machine tools
C414.2	Identify different types of tooling system and apply that for the codes used in CNC part programming
C414.3	Analyze the computer aided programming understand cad/cam software
C414.4	Understand the different types of controlling mechanisms
C414.5	Understand the concept of micro controllers and programming logic control

Course Name: C415 Additive Manufacturing Technology **Year: IV-I Sem A.Y: 2019-20**

C415.1	Interpret the prototyping fundamentals and RP Processes.
C415.2	Recognize liquid-based RP Systems
C415.3	Recognize different types of Powder based RP System and Rapid Tooling.
C415.4	Identify STL formats, STL files and its problem
C415.5	Describe the differences and application of AMT.

Course Name: C416 CAD/CAM Lab **Year: IV-I Sem A.Y: 2019-20**

C416.1	Recognize the development of part drawings for various components.
C416.2	Determine the stresses and estimation of natural frequencies.
C416.3	Do analysis on heat transfer of plane and axi-symmetric components.
C416.4	Analyze the development of manufacturing defects and tool managementsystems.
C416.5	Produce detailed production drawings using commercially available drafting software

Course Name: C417 Instrumentation and Control Systems Lab **Year: IV-I Sem A.Y: 2019-20**

C417.1	Recognize measurement of temperature and pressures.
C417.2	Identify various types of transducers used in displacement and temperature measurements.
C417.3	Determine the stain in a cantilever beam subject point load using strain gaugesetup.
C417.4	Understand the concept of measurement of flow, speed and acceleration.
C417.5	Illustration of SCADA software for pressure and temperature measurement.

Course Name: C418 Industry Oriented Mini Project **Year: IV-I Sem A.Y: 2019-20**

C418.1	Use knowledge within the chosen area of technology for project development.
C418.2	Identify, discuss and justify the technical aspects of the chosen project with a comprehensive and systematic approach.
C418.3	Reproduce, improve and refine technical aspects for engineering projects.
C418.4	Work as an individual or in a team in development of technical projects.
C418.5	Communicate and report effectively project related activities and findings.

Course Name: C419 Seminar **Year: IV-I Sem A.Y: 2019-20**

C419.1	Engaged in the integral activities of reading, discussion and composition around a particular topic.
C419.2	Develop presentation skills.
C419.3	Apply confidence to face the interviews.
C419.4	Investigate the advancements in the particular topic.
C419.5	Distinguish opinions from researched claims.