



### 3.1.1.Course Outcomes

Course Code: C101  
Year of Study 2018-19  
Course Name: ENGLISH FOR COMMUNICATION -I

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C101.1	Read, listen and comprehend the idea contained in articles, essays, and technical writings of various kinds.
C101.2	Familiarize the different techniques of writing and use them effectively in business correspondences.
C101.3	Develop communication skills and present their views in a logical and convincing way.
C101.4	Possess different language functions like agreeing, permitting, apologizing, negating and so on and apply them effectively in daily communication.
C101.5	Cultivate proficiency in correct usage of English words and grammar.

Course Code: C102  
Year of Study 2018-19  
Course Name: ENGINEERING MATHEMATICS – I

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C102.1	Explain the concept of right angle triangle and to solve simple problems.
C102.2	Explain the concept of trigonometry and to solve simple problems.
C102.3	Evaluate the limit of a function and derivative of a function with simple applications.
C102.4	Explain the concepts of differentiation of functions and to solve simple problems.

**Course Code: C103**  
**Year of Study 2018-19**  
**Course Name: ENGINEERING PHYSICS - I**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C103.1</b>	List different Physical quantities and Understand concepts of force, Linear momentum.
<b>C103.2</b>	Explain vectors and scalars and apply concept of circular motion and rotational motion
<b>C103.3</b>	Explain basic ideas of elasticity and interpret fluid flow.
<b>C103.4</b>	Explain Simple Harmonic Motion, wave motion.

**Course Code: C104**  
**Year of Study 2018-19**  
**Course Name: ENGINEERING CHEMISTRY - I**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C104.1</b>	Explain the fundamental concepts of atom and to correlate these to advanced technology like Nanotechnology.
<b>C104.2</b>	Apply the knowledge of basic chemistry in industrial applications like Catalysis.
<b>C104.3</b>	Identify different concepts of acids and bases, its importance in the field of industry.
<b>C104.4</b>	Apply the fundamentals of analytical chemistry including the skill of solving problems
<b>C104.5</b>	Examine the types, implications and control of hardness of water and to evaluate different processes to make potable water.

**Course Code: C105**  
**Year of Study 2018-19**  
**Course Name: HEALTH AND PHYSICAL EDUCATION**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C105.1</b>	Use basic principles of health and wellness.
<b>C105.2</b>	Explain the principles of life time fitness
<b>C105.3</b>	Acquire knowledge and demonstrate skills.
<b>C105.4</b>	Demonstrate basics of nutrition and fitness.

**Course Code: C106**  
**Year of Study 2018-19**  
**Course Name: COMPUTING FUNDAMENTALS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C106.1</b>	Utilize the basic functions and features of computer, Operating System and Internet applications.
<b>C106.2</b>	Make use of Stand-alone and Cloud-based office tools to prepare documents, spreadsheets and presentations.
<b>C106.3</b>	Develop algorithms and flowcharts for solving simple problems.
<b>C106.4</b>	Develop Python programs to solve simple problems.

**Course Code: C107**  
**Year of Study 2018-19**  
**Course Name: ENGLISH FOR COMMUNICATION- II**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C107.1</b>	Read, listen and comprehend the idea contained in articles, essays, and technical writings of various kinds.
<b>C107.2</b>	Familiarize the different techniques of writing and use them effectively in business correspondences.
<b>C107.3</b>	Develop communication skills and present their views in a logical and convincing way.
<b>C107.4</b>	Possess different language functions like agreeing, permitting, apologizing, negating and so on and apply them effectively in daily communication.
<b>C107.5</b>	To cultivate proficiency in correct usage of English words and grammar.

Course Code: C108  
Year of Study: 2018-19  
Course Name: ENGINEERING MATHEMATICS II

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C108.1	Make use of Determinants and Matrices in finding the solutions of a linear system
C108.2	Identify the concept of scalar and vector quantities and apply it in engineering problems
C108.3	Use the concept of integration.
C108.4	Apply integration techniques to solve different engineering problems and differential equations.

Course Code: C109  
Year of Study 2018-19  
Course Name: ENGINEERING PHYSICS II

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C109.1	Explain the various aspects of circular motion.
C109.2	Explain Gravitational force and Acceleration due to gravity.
C109.3	Apply basic laws of Electricity and magnetism to solve simple problems concerning the motion and distribution of charges.
C109.4	Explain the basic ideas of the nature of light with special reference to quantum theory.

Course Code: C110  
Year of Study 2018-19  
Course Name: ENGINEERING CHEMISTRY II

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C110.1	Explain the fundamental concepts of atom and to correlate these to advanced technology like Nanotechnology.
C110.2	Apply the knowledge of basic chemistry in industrial applications like Catalysis.
C110.3	Identify different concepts of acids and bases, its importance in the field of industry .
C110.4	Apply the fundamentals of analytical chemistry including the skill of solving problems.

<b>C110.5</b>	Examine the types, implications and control of hardness of water and to evaluate different processes to make potable water.
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**Course Code: C111**

**Year of Study 2018-19**

**Course Name: BASIC MECHANICAL ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C111.1</b>	Explain the properties, testing and inspection of engineering materials, manufacturing of metals & alloys.
<b>C111.2</b>	Describe the working of steam generators and steam engines.
<b>C111.3</b>	Explain the importance and uses of IC Engines, working of IC Engines.
<b>C111.4</b>	Describe the working and use of various power plants.

**Course Code: C112**

**Year of Study 2018-19**

**Course Name: ENGINEERING GRAPHICS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C112.1</b>	Explain the importance of engineering graphics, lettering, numbering, dimensioning and Recognize the use of drawing instruments, standards, symbols etc.
<b>C112.2</b>	Draw geometric construction & Scales and the projections of points, lines, planes
<b>C112.3</b>	Draw the orthographic projections and the auxiliary views of various objects.
<b>C112.4</b>	Appreciate the sectional views of objects and Identify the pictorial drawings of various objects.
<b>C112.5</b>	Explain the visualisation and Understand the development of surfaces.

**Course Code: C113**  
**Year of Study 2018-19**  
**Course Name: WORKSHOP PRACTICE**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C113.1</b>	Make use of various tools, instruments and devices required to make carpentry, foundry & casting
<b>C113.2</b>	Make use of various tools, machines, instruments and power tools used in the smithy, forging & Fitting shop.
<b>C113.3</b>	Utilize different sheet metal tools and measuring instruments to make sheet metal joints.
<b>C113.4</b>	Make use of various tools, machines, instruments and power tools used in the Welding shop to make welding joint.

**Course Code: C114**  
**Year of Study 2018-19**  
**Course Name: ENGINEERING SCIENCE LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C114.1</b>	Apply the knowledge to Measure volume of a cylinder using vernier callipers and screw gauge, Determine focal length of a convex lens by displacement method.
<b>C114.2</b>	Apply the knowledge to Determine the velocity of a sound air at room temperature using resonance column and the relative density using U-tube apparatus; Determine the mass of a body by parallelogram method and by Lami's theorem.
<b>C114.3</b>	Apply the knowledge to conduct Estimation of HNO <sub>3</sub> , Estimation H <sub>2</sub> SO <sub>4</sub> , Estimation of Oxalic acid, Standardization of KMnO <sub>4</sub> , Determine acceleration due to gravity using simple pendulum
<b>C114.4</b>	Apply the knowledge to Standardize NaOH Double Titrations Estimate NaOH, KOH, Na <sub>2</sub> CO <sub>3</sub> , etc.

**Course Code: C115**  
**Year of Study 2018-19**  
**Course Name: BASIC MECHANICAL ENGINEERING LABORATORY**

On completion of the course, student will be able to

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C115.1</b>	Make use of precision equipments, its measurements and identify various plumbing tools.
<b>C115.2</b>	Demonstrate the Brazing and soldering processes.
<b>C115.3</b>	Identify the parts of Centrifugal, Reciprocating pumps and main components of petrol and diesel engines.
<b>C115.4</b>	Identify the components of refrigerator and air conditioners.

**Course Code: C116**  
**Year of Study 2018-19**  
**Course Name: LIFE SKILL**

On completion of the course, student will be able to

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C116.1</b>	Self-Awareness and Empathy Logical Thinking and Creative Thinking.
<b>C116.2</b>	Decision Making And Problem Solving.
<b>C116.3</b>	Effective Communication.
<b>C116.4</b>	Inter Personal Relations Coping with Stress and Emotion.

**Course Code: C201**  
**Year of Study: 2019-20**  
**Course Name: ELECTRICAL AND ELECTRONICS ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C201.1</b>	Explain electrical circuits and various electrical parameters.
<b>C201.2</b>	Classify various electrical energy sources and their construction.
<b>C201.3</b>	Identify various types of motors and their characteristics.
<b>C201.4</b>	Explain the construction and working of transformer
<b>C201.5</b>	Illustrate an idea on measuring instruments and utilization of electric power and electronics

**Course Code: C202**  
**Year of Study: 2019-20**  
**Course Name: MANUFACTURING PROCESS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C202.1</b>	Explain the basic measuring instruments, gauges & comparators.
<b>C202.2</b>	Explain the welding, soldering and brazing process.
<b>C202.3</b>	Explain the crystal structure of material.
<b>C202.4</b>	Explain the concepts of foundry, casting and allowances of casting.



**Course Code: C203**  
**Year of Study: 2019-20**  
**Course Name: FLUID MECHANICS AND PNEUMATICS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C203.1</b>	Explain the fluid properties, pressure and its measurements.
<b>C203.2</b>	Explain kinematics and dynamics of fluid flow.
<b>C203.3</b>	Compare the flow through orifice, notches, pipes and nozzles.
<b>C203.4</b>	Describe the power hydraulics technology.
<b>C203.5</b>	Describe the pneumatic system and design of circuits.

**Course Code: C204**  
**Year of Study: 2019-20**  
**Course Name: ENVIRONMENTAL SCIENCE AND DISASTER MANAGEMENT**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C204.1</b>	Explain the importance of various natural resources and the issues related to that.
<b>C204.2</b>	Identify the structure of an ecosystem and functions of various components in ecosystem.
<b>C204.3</b>	Explain the cause, effect and control measures of different kinds of environmental pollution.
<b>C204.4</b>	Identify various Hazards and Disasters, their mitigation measures and the related legislation.

**Course Code: C205**  
**Year of Study: 2019-20**  
**Course Name: MACHINE DRAWING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C205.1</b>	Demonstrate various threaded fasteners and riveted joints
<b>C205.2</b>	Sketch Various foundation bolts and locking arrangements
<b>C205.3</b>	Construct assembly drawing of cotter joints and couplings
<b>C205.4</b>	Construct assembly drawing of various bearings and machine parts
<b>C205.5</b>	Sketch and interpret welding symbols and piping layout

**Course Code: C206**  
**Year of Study: 2019-20**  
**Course Name: WORKSHOP PRACTICE III**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C206.1</b>	Carry out the machining operations on lathe, shaper and drilling machine
<b>C206.2</b>	Carry out the various fitting operations involving marking, filing, drilling, reaming and tapping
<b>C206.3</b>	Demonstrate the various tools and carry out the various sheet metal and aluminum fabrication operations
<b>C206.4</b>	Demonstrate the various tools and equipment's used in the welding shop and practice arc welding and gas welding

**Course Code: C207**  
**Year of Study: 2019-20**  
**Course Name: FLUID MECHANICS LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C207.1</b>	Acquire knowledge of basic principles of fluid mechanics.
<b>C207.2</b>	Apply the knowledge to Estimate the friction and measure the frictional losses in fluid flow.
<b>C207.3</b>	Apply the knowledge to Determine the coefficient of discharge of flow measuring devices.
<b>C207.4</b>	Apply the knowledge to Determine the centre of pressure and analyse stability of floating bodies

**Course Code: C208**  
**Year of Study: 2019-20**  
**Course Name: ELECTRICAL TECHNOLOGY LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C208.1</b>	Identify fundamental of electric circuits, electrical instruments and different types of starters.
<b>C208.2</b>	Operate DC motor.
<b>C208.3</b>	Operate AC motor.
<b>C208.4</b>	Demonstrate performance of transformers

**Course Code: C209**  
**Year of Study: 2019-20**  
**Course Name: METALLURGY AND MACHINE TOOLS**

On completion of the course student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C209.1</b>	Describe the structure of metals, equilibrium diagram, heat treatment processes and importance of powder Metallurgy.
<b>C209.2</b>	Explain the various aspects of metal cutting and cutting fluids.
<b>C209.3</b>	Describe classification, parts and applications of lathes.
<b>C209.4</b>	Explain drilling, milling machines and its processes.
<b>C209.5</b>	Explain the shaping, slotting, planning machines and its processes.

**Course Code: C210**  
**Year of Study: 2019-20**  
**Course Name: AUTOMOBILE ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C210.1</b>	Explain the working of different systems of I.C Engines.
<b>C210.2</b>	Explain the working of transmission system in automobiles.
<b>C210.3</b>	Explain working of suspension system in automobile.
<b>C210.4</b>	Categorize modern trends in automobile engineering.
<b>C210.5</b>	Classify the emissions in automobiles.

**Course Code: C211**  
**Year of Study: 2019-20**  
**Course Name: APPLIED MECHANICS AND STRENGTH OF MATERIALS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C211.1</b>	Explain simple stress, strain on machine & structures and the theory of shear stress & shear strain.
<b>C211.2</b>	Explain laws of friction and to identify centroid, center of gravity and the moment of inertia of different section.
<b>C211.3</b>	Explain the strength and efficiency of riveted joints & welded joints and Recognize the effect of forces on spring.
<b>C211.4</b>	Explain stresses on thin cylinders and theory of torsion on shaft.
<b>C211.5</b>	Draw the shear force and bending moment diagrams and to identify the deflection of beams, theory of columns and struts.

**Course Code: C212**  
**Year of Study: 2019-20**  
**Course Name: THERMAL ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C212.1</b>	Explain the basics of Thermodynamics and Thermodynamic processes.
<b>C212.2</b>	Explain the air standard cycles, working of IC Engines with PV, TS, valve timing and port timing diagrams.
<b>C212.3</b>	Discuss the testing of IC Engines, formation of steam and steam properties.
<b>C212.4</b>	Explain the heat transfer, working of heat exchanger and air compressors.

**Course Code: C213**  
**Year of Study: 2019-20**  
**Course Name: PRODUCTION DRAWING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C213.1</b>	Explain the limits, fits and tolerance.
<b>C213.2</b>	Identify the surface texture and roughness.
<b>C213.3</b>	Make the preparation of operation chart.
<b>C213.4</b>	Interpret and prepare of shop floor drawing.

**Course Code: C214**  
**Year of Study: 2019-20**  
**Course Name: WORKSHOP PRACTICE -IV & MINI PROJECT**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C214.1</b>	Carry out the machining operations on lathe, shaper and drilling machine.
<b>C214.2</b>	Carry out the various fitting operations involving marking, filing, drilling, reaming and tapping.
<b>C214.3</b>	Demonstrate the various tools and carry out the various sheet metal and aluminium fabrication operations.
<b>C214.4</b>	Demonstrate the various tools and equipment's used in the welding shop and practice arc welding and gas welding.
<b>C214.5</b>	Enhance team spirit and creative talents for achieving a goal.

**Course Code: C215**  
**Year of Study: 2019-20**  
**Course Name: MATERIAL TESTING LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C215.1</b>	Demonstrate ability to perform material tests on mild steel specimen to determine impact strength, tensile strength and modulus of elasticity.
<b>C215.2</b>	Conduct compression test and bending test on standard specimens.
<b>C215.3</b>	Demonstrate to determine hardness of standard specimens using Brinell and Rockwell test.
<b>C215.4</b>	Demonstrate to conduct loading test on closed coil spring.
<b>C215.5</b>	Prepare a technical report all the experiments under taken.

**Course Code: C216**  
**Year of Study: 2019-20**  
**Course Name: HEAT ENGINES LABORATORY**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C216.1</b>	Explain systems of diesel engines.
<b>C216.2</b>	Illustrate the preparation of valve timing diagram
<b>C216.3</b>	Demonstrate the load test on engine.
<b>C216.4</b>	Identify the viscosity, calorific value, flash point, fire point of fuels
<b>C216.5</b>	Demonstrate the working of air compressor.

**Course Code: C301**  
**Year of Study: 2020-21**  
**Course Name: INDUSTRIAL MANAGEMENT AND SAFETY**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C301.1</b>	Explain the concepts of principles of management and human resource management.
<b>C301.2</b>	Classify the wage payment system and incentives.
<b>C301.3</b>	Explain the concept of quality planning, materials and sales management.
<b>C301.4</b>	Discuss the role of project management and quantitative techniques in management.
<b>C301.5</b>	Explain the importance of industrial safety and concept of entrepreneurship.

**Course Code: C302**  
**Year of Study: 2020-21**  
**Course Name: DESIGN OF MACHINE ELEMENTS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C302.1</b>	Explain the method of design and apply the method to design bolts, nuts, keys and screw jack.
<b>C302.2</b>	Apply the knowledge to solve the problems related to design of shafts, couplings and bearings.
<b>C302.3</b>	Explain the functions of governor and flywheel and solve the problems related to design of governor and flywheel.



<b>C302.4</b>	Explain the functions of belt, rope and chain drives and apply the knowledge to solve the problems related to design of belt, rope and chain drives.
<b>C302.5</b>	Illustrate the spur gear nomenclature and apply the knowledge to solve the problems related to gear trains.

**Course Code: C303**  
**Year of Study: 2020-21**  
**Course Name: INDUSTRIAL ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C303.1</b>	Identify the role of industrial engineer and factors influencing productivity in industry.
<b>C303.2</b>	Explain work-study, method study and work sampling techniques
<b>C303.3</b>	Recognize the importance of quality control, inspection methods and acceptance sampling used in industry
<b>C303.4</b>	Prepare estimate and calculate the selling price of manufacturing product

**Course Code: C304**  
**Year of Study: 2020-21**  
**Course Name: POWER PLANT ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C304.1</b>	Explain the fundamental concepts of fuels, combustion of fuels, calorific values.
<b>C304.2</b>	Explain the bomb calorimeter, Junker's calorimeter and analysis of combustion products.
<b>C304.3</b>	Explain steam boilers, working of steam turbines, modern steam turbines and compound steam engines.
<b>C304.4</b>	Describe the working of condensers, cooling towers, thermal power plants, air pumps and analysis of thermodynamic vapour cycles.
<b>C304.5</b>	Explain the working of hydroelectric power plant, Diesel power plant, nuclear power plants, Renewable sources of energy and non-conventional power plants, gas

	turbines and jet propulsion
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**Course Code: C305**

**Year of Study: 2020-21**

**Course Name: INDUSTRIAL MAINTENANCE & SERVICING LABORATORY**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C305.1</b>	Select the tools and equipment's and carry out the maintenance and servicing of general purpose equipment's.
<b>C305.2</b>	Carry out the dismantling, assembling and overhauling of I C engines and automobile components.
<b>C305.3</b>	Carry out the service and maintenance of refrigerators.
<b>C305.4</b>	Carry out the service and maintenance of air conditioners.

**Course Code: C306**

**Year of Study: 2020-21**

**Course Name: MACHINE SHOP PRACTICE**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C306.1</b>	Develop models on lathe
<b>C306.2</b>	Develop models on shaping machine.
<b>C306.3</b>	Utilize milling machine to make models.
<b>C306.4</b>	Make use of slotting machine to make models.
<b>C306.5</b>	Utilize planing machine to practice planing

**Course Code: C307**  
**Year of Study: 2020-21**  
**Course Name: CADD LAB I**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C307.1</b>	Explain basics of computer aided drafting
<b>C307.2</b>	Sketch the shop floor drawing.
<b>C307.3</b>	Represent two dimensional drawing with CAD.
<b>C307.4</b>	Sketch the two dimensional drawing with section using CAD.
<b>C307.5</b>	Sketch Isometric drawing of simple objects.

**Course Code: C308**  
**Year of Study: 2020-21**  
**Course Name: INDUSTRIAL TRAINING/ INDUSTRIAL VISIT / COLLABORATIVE WORK /SPOKEN TUTORIAL**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C308.1</b>	Develop an industrial exposure in tune with the curriculum.
<b>C308.2</b>	Familiarize industrial standards, safety aspects, organizational structure.
<b>C308.3</b>	Develop employability skill.
<b>C308.4</b>	Get training on industrial relevant topics.

**Course Code: C309**  
**Year of Study: 2020-21**  
**Course Name: HYDRAULIC MACHINES**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C309.1</b>	Explain impact of jets and propulsion of ship.
<b>C309.2</b>	Describe the working of impulse turbines.
<b>C309.3</b>	Describe the working of reaction turbines.
<b>C309.4</b>	Describe the working of various types of pumps.

**Course Code: C310**  
**Year of Study: 2020-21**  
**Course Name: ADVANCED PRODUCTION PROCESSES**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C310.1</b>	Explain the working of capstan lathe, turret lathe, automatic & copying lathes and machining centres.
<b>C310.2</b>	Explain the working of broaching and gear manufacturing.
<b>C310.3</b>	Explain the working of press tools, jigs, fixtures and jig boring machines.
<b>C310.4</b>	Explain the grinding machines and surface finishing methods.
<b>C310.5</b>	Explain the principle of nonconventional machining, NC,CNC machines, robotics and flexible manufacturing systems.

**Course Code: C311**  
**Year of Study: 2020-21**  
**Course Name: REFRIGERATION AND AIRCONDITIONG**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C311.1</b>	Explain the fundamental principles of thermodynamics, refrigeration and its applications.
<b>C311.2</b>	Describe the various types of air refrigeration systems.
<b>C311.3</b>	Discuss different components of refrigeration system, refrigerants used and various fields of applications of refrigeration.
<b>C311.4</b>	Explain psychrometric and psychrometrics processes.
<b>C311.5</b>	Explain low temperature refrigeration, types of air conditioning systems and evaluate total cooling load.

**Course Code: C312**  
**Year of Study: 2020-21**  
**Course Name: INDUSTRIAL AUTOMATION AND MECHATRONICS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C312.1</b>	Illustrate automation and mechatronics system and describe the elements of mechatronics design procedure.
<b>C312.2</b>	Explain the principles of sensors and transducers and comprehend the displacement, position, proximity sensors based on their application.
<b>C312.3</b>	Describe the fluid pressure measurement devices and explain debouncing of mechanical switches.
<b>C312.4</b>	Describe the working of control valves and actuators and their applications.
<b>C312.5</b>	Illustrate the working of PLC and detection of faults in mechatronic systems.

**Course Code: C313**  
**Year of Study: 2020-21**  
**Course Name: CADD LAB - II**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C313.1</b>	Demonstrate and working with layer property
<b>C313.2</b>	Draw the 3D Models
<b>C313.3</b>	Draw the solid models
<b>C313.4</b>	Draw the sections of solids.
<b>C313.5</b>	Demonstrate the Rendering In AutoCAD and modeling in ProE and CATIA.

**Course Code: C314**  
**Year of Study: 2020-21**  
**Course Name: ADVANCED MACHINE TOOL LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C314.1</b>	Develop models on lathe
<b>C314.2</b>	Develop models on shaping machine and Utilize planing machine to practice planing
<b>C314.3</b>	Utilize milling machine to make models.
<b>C314.4</b>	Make use of slotting machine to make models.

**Course Code: C315**

**Year of Study: 2020-21**

**Course Name: HYDRAULIC MACHINERY AND FLUID POWER LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C315.1</b>	Carryout the experiment on Pelton wheel Turbine, Francis Turbine & Kaplan Turbine.
<b>C315.2</b>	Explain the working of Centrifugal Pump, Reciprocating Pump, Gear Pump, lobe Pump, Self Priming pump, stage pump, and deep well pump.
<b>C315.3</b>	Explain the Hydraulic Ram and hydraulic lift.
<b>C315.4</b>	Operate the hydraulic Jack, hydraulic press.
<b>C315.5</b>	Carryout the experiment on pneumatic and hydraulic systems.

**Course Code: C316**

**Year of Study: 2020-21**

**Course Name: PROJECT WORK AND SEMINAR**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C316.1</b>	Have an exposure to an innovative area of Technology/Information.
<b>C316.2</b>	Develop presentation skills and develop creative interaction among listeners.

<b>C316.3</b>	Enhance team spirit and creative talents for achieving a goal.
<b>C316.4</b>	Enhance report writing ability.





**KMCT**  
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**COURSE OUTCOMES OF REVISION 2021**



**Course Code: C101**

**Year of Study: 2021-22**

**Course Name: COMMUNICATION SKILLS IN ENGLISH**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C101.1</b>	The learners listen to, identify and comprehend the main idea and supporting details of the listening passage.
<b>C101.2</b>	The learners apply different language functions and communicate effectively in the workplace and daily life
<b>C101.3</b>	The learners read, comprehend and analyze the ideas and concepts contained in articles, technical writings and narratives and express them in their own words
<b>C101.4</b>	The learners apply the different techniques of writing and compose technical, documents like reports, emails and so on.

**Course Code: C102**

**Year of Study: 2021-22**

**Course Name: ENGINEERING MATHEMATICS I**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C102.1</b>	Make use of complex numbers to solve mathematical problems. Extend the use of different forms of equations of straight lines in co-ordinate geometry.
<b>C102.2</b>	Solve mathematical problems related to trigonometry
<b>C102.3</b>	Utilize the concepts related to limits and derivatives to solve problems



<b>C102.4</b>	Apply the concepts of differentiation of composite function, parametric equation, implicit function and successive differentiation to solve mathematical problems..
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**Course Code: 103**

**Year of Study: 2021-22**

**Course Name: APPLIED PHYSICS I**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C203.1</b>	Apply laws of mechanics in rocket propulsion and recoil of gun.
<b>C203.2</b>	Apply concepts of circular motion and rotational motion
<b>C203.3</b>	Make use the concepts of energy, power, work, temperature and friction to solve problems
<b>C203.4</b>	Use the theorems of fluid dynamics in atomiser and airfoil

**Course Code: C104**

**Year of Study: 2021-22**

**Course Name: APPLIED CHEMISTRY**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C104.1</b>	Explain atomic structure and chemical bonding
<b>C104.2</b>	Explain atomic structure and chemical bonding
<b>C104.3</b>	Explain various engineering materials for domestic and industrial applications
<b>C104.4</b>	Apply the concept of Electrochemistry and corrosion to solve engineering problems



**Course Code: C105**

**Year of Study: 2021-22**

**Course Name: ENGINEERING GRAPHICS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C105.1</b>	Illustrate basic elements of Drawing
<b>C105.2</b>	Construct Projections of points and lines
<b>C105.3</b>	Build Orthographic projections and Sectional views of object
<b>C105.4</b>	Develop Isometric Projections

**Course Code: C106**

**Year of Study: 2021-22**

**Course Name: APPLIED CHEMISTRY LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C106.1</b>	Quantitatively analyze solutions accurately.
<b>C106.2</b>	Standardize EDTA and analyze the hardness of water
<b>C106.3</b>	Determine the pH of solutions using different techniques
<b>C106.4</b>	Apply the principles of electrochemistry in quantitative analysis.



**Course Code: C107**

**Year of Study: 2021-22**

**Course Name: INTRODUCTION TO IT SYSTEMS LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C107.1</b>	Utilize the basic functions and features of computer, Operating System and Internet applications.
<b>C107.2</b>	Make use of Stand-alone and Cloud-based office tools to prepare documents, spreadsheets and presentations.
<b>C107.3</b>	Develop algorithms and flowcharts for solving simple problems.
<b>C107.4</b>	Develop Python programs to solve simple problems.

**Course Code: C108**

**Year of Study: 2021-22**

**Course Name: Sports and Yoga**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C108.1</b>	Apply warming up and warming down exercises in daily physical fitness activities
<b>C108.2</b>	Apply stretching rotation and flexibility exercises in daily physical fitness activities
<b>C108.3</b>	Make use of acquired yoga asanas skill and pranayama method in daily lifestyle
<b>C108.4</b>	Utilize the acquired weight training skills for the development of muscular strength and development. Utilize the acquired skills in playing sports and games.



**Course Code: C109**

**Year of Study: 2021-22**

**Course Name: MATHEMATICS II**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C108.1</b>	Make use of Determinants and Matrices in finding the solutions of a linear system.
<b>C108.2</b>	Identify the concept of scalar and vector quantities and apply it in engineering problems.
<b>C108.3</b>	Build the concept of integration as the inverse operation of differentiation.
<b>C108.4</b>	Apply integration techniques to solve different engineering problems and differential equations.

**Course Code: C110**

**Year of Study: 2021-22**

**Course Name: APPLIED PHYSICS-II**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C110.1</b>	Calculate the characteristics of waves.
<b>C110.2</b>	Compute the power of lens.
<b>C110.3</b>	Convert galvanometer into ammeter and voltmeter.
<b>C110.4</b>	Explain the basic principles of semiconductor physics, photoelectric effect, LASER action and nanoscience.



**Course Code: C11**

**Year of Study: 2021-22**

**Course Name: ENVIRONMENTAL SCIENCE**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C106.1</b>	Explain the ecosystem and terminology involved in it
<b>C106.2</b>	Explain air, water, soil and noise pollution, and control measures and acts.
<b>C106.3</b>	Explain different renewable energy resources and efficient process of harvesting.
<b>C106.4</b>	Explain solid Waste Management, ISO 14000 & Environmental Management and conduct a case study on any one environmental problem / application of sustainable energy resources

**Course Code: C112**

**Year of Study: 2021-22**

**Course Name:ENGINEERING MECHANICS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C112.1</b>	Identify the force systems for given conditions by applying the basics of mechanics
<b>C112.2</b>	Apply conditions of static equilibrium to determine unknown force(s) of different structural elements.
<b>C112.3</b>	Solve problems involving rigid bodies by applying the properties of distributed areas and masses.
<b>C112.4</b>	Determine structural behavior of materials under various loading conditions.



**Course Code: C113**

**Year of Study: 2021-22**

**Course Name: MANUFACTURING TECHNOLOGY**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C113.1</b>	Explain manufacturing process and the relevance of foundry in manufacturing
<b>C113.2</b>	Identify and explain different types of casting and metal working processes.
<b>C113.3</b>	Describe metal joining process and the areas of applications of a particular joining process.
<b>C113.4</b>	Explain the principle and concepts of forging & press working.

**Course Code: C114**

**Year of Study: 2021-22**

**Course Name: COMMUNICATION SKILLS IN ENGLISH LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C106.1</b>	Use words, phrases and sentences accurately and with correct pronunciation in real life situations.
<b>C106.2</b>	Listens to and comprehends the substance and central idea of simple narratives and descriptions.
<b>C106.3</b>	Use apt language functions while making statements, asking questions, giving instructions, and reporting events.
<b>C106.4</b>	Narrate simple experiences and series of events to convey its essence and intention and present ideas coherently, confidently and with clarity in debates, discussions and interviews.





**Course Code: C115**

**Year of Study: 2021-22**

**Course Name: APPLIED PHYSICS LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C115.1</b>	Select appropriate measuring tools and make measurements with accuracy and precision.
<b>C115.2</b>	Apply and illustrate the concepts of mechanics and properties of matter through experiments
<b>C115.3</b>	Experiment with lens, prism and glass slab to realize the basic laws of ray optics.
<b>C115.4</b>	Make use of V- I characteristics of conductors and semiconductors to determine the resistance of materials.

**Course Code: C116**

**Year of Study: 2021-22**

**Course Name: ENGINEERING MECHANICS LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C116.1</b>	Identify the force systems for given conditions by applying the basics of mechanics.
<b>C116.2</b>	Determine unknown forces of different engineering systems.
<b>C116.3</b>	Infer centre of gravity and mass moment of inertia.
<b>C116.4</b>	Determine strains in mutually perpendicular directions under axial tension. Determine the co-efficient of friction on a plane through experimentation



**Course Code: C117**

**Year of Study: 2021-22**

**Course Name: BASIC CAD LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C117.1</b>	Illustrate the use of computer aided drafting software.
<b>C117.2</b>	Identify various commands used in CAD.
<b>C117.3</b>	Apply knowledge to draw simple two-dimensional drawings and sections using CAD
<b>C117.4</b>	Construct Isometric drawing of simple objects

**Course Code: C118**

**Year of Study: 2021-22**

**Course Name: ENGINEERING WORKSHOP PRACTICE**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C118.1</b>	Identify the safety precautions, tools and devices required to make carpentry joints
<b>C118.2</b>	Make use of various tools, machines, instruments and power tools used in the Fitting shop to make fitting joints
<b>C118.3</b>	Make use of various tools, machines, instruments and power tools used in the Welding shop to make welding joint.
<b>C118.4</b>	Utilize different sheet metal tools and measuring instruments to make sheet metal joints.
<b>C118.5</b>	Make use of various tools and accessories to practice electrical wiring, motor connection and soldering



**Course Code: C201**

**Year of Study: 2022-23**

**Course Name: STRENGTH OF MATERIALS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C201.1</b>	Explain stress and strain values and find the changes in axial, lateral and volumetric dimensions. Find thermal stresses in bodies of uniform section and composite sections.
<b>C201.2</b>	Solve the shear force and bending moment at any section of beam and draw the S.F. & B.M diagrams of UDL and Point loads.
<b>C201.3</b>	Show the deflection of beams, theory of columns and struts.
<b>C201.4</b>	Comparison of solid and hollow shafts, define and solve the stress and deflection of the closed coil helical spring. Illustratethe stresses on thin cylinders.

**Course Code: C202**

**Year of Study: 2022-23**

**Course Name: MATERIAL SCIENCE AND METROLOGY**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C202.1</b>	Explain crystal structure, classification of engineering materials, types of steels and ferrous alloys
<b>C202.2</b>	Explain the failure and testing of engineering materials and heat treatment processes.
<b>C202.3</b>	Explain the static and dynamic characteristics of measuring instruments and also to make use of various force/torque measurement techniques.
<b>C202.4</b>	Explain the different types of measuring instrument and select suitable measuring device for a particular application and discuss the significance of machine tool inspection/testing.



**Course Code: C203**

**Year of Study: 2022-23**

**Course Name: MACHINE TOOLS**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C203.1</b>	Describe the concept of mechanics of metal cutting in manufacturing operations and explain lathe machinery, its parts with various operations performed in it.
<b>C203.2</b>	Describe the concept of mechanics of metal cutting in manufacturing operations and explain lathe machinery, its parts with various operations performed in it.
<b>C203.3</b>	Describe the significance of milling, grinding machines (types, parts cutting tools, operations performed) and other super finishing operations.
<b>C203.4</b>	Explain the principle of NC and CNC machines and significance of lubricants/cutting fluids used in machining process.

**Course Code: C204**

**Year of Study: 2022-23**

**Course Name: FUNDAMENTALS OF ELECTRICAL ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C204.1</b>	Solve simple electrical circuits using the fundamental concept of circuit parameters and basic laws
<b>C204.2</b>	Explain the working principle of electric motors and their applications in mechanical engineering
<b>C204.3</b>	Illustrate various electric heating and welding equipment used for mechanical manufacturing process
<b>C204.4</b>	Summarize the applications of electronics in mechanical engineering.



**Course Code: C205**

**Year of Study: 2022-23**

**Course Name: : MACHINE DRAWING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C205.1</b>	To outline the use and development of fastening devices and its assembly
<b>C205.2</b>	Illustrate tolerances and level of surface finish of machine elements
<b>C205.3</b>	Develop drawings of various machine elements, components and part details
<b>C205.4</b>	Outline and apply the concept and method of developing production drawings.

**Course Code: C206**

**Year of Study: 2022-23**

**Course Name: MATERIAL TESTING AND METALLOGRAPHY LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C206.1</b>	Apply theoretical knowledge of material testing to conduct tension test on UTM for ductile and brittle material
<b>C206.2</b>	Apply theoretical knowledge of material testing to find out the hardness of various treated and untreated steels using Vickers hardness tester & Brinell hardness tester
<b>C206.3</b>	Apply theoretical knowledge of material testing to conduct Impact test and torsion test
<b>C206.4</b>	To study the Microstructure of Low, Medium & High carbon steels by sample preparation using Disc polishing (fine polishing) and to find cracks in casting by conducting visual inspection, die penetrant test and magnetic particle test (NDT).



**Course Code: C207**

**Year of Study: 2022-23**

**Course Name: MECHANICAL WORKSHOP III**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C207.1</b>	Perform machining operations on lathe and shaper
<b>C207.2</b>	Apply technical skill to practice fitting operations and use of various gauges
<b>C207.3</b>	Perform fabrication works by making semi- permanent joints in metal sheets and Practice welding operations
<b>C207.4</b>	Apply technical skill to perform smithy and foundry work

**Course Code: C208**

**Year of Study: 2022-23**

**Course Name: ELECTRICAL AND ELECTRONICS LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C208.1</b>	Select appropriate instruments and methods for measuring voltage, current, resistance and power in a given circuit
<b>C208.2</b>	Develop simple circuits in open conduit system for domestic and motor wiring
<b>C208.3</b>	Compute performance characteristics of AC motor and single-phase transformer using direct loading method
<b>C208.4</b>	Construct rectifier circuits using the knowledge of various electronic components



**Course Code: C209**

**Year of Study: 2022-23**

**Course Name: ADVANCED CADD LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C209.1</b>	Draw various fastening devices by choosing proper tools in the software.
<b>C209.2</b>	Prepare detailed drawing of a complex component in a fast and effective manner
<b>C209.3</b>	Implement GD&T symbols and surface finish symbols in a CAD drawing.
<b>C209.4</b>	Identify the basic concepts of 3D modeling in a software environmen

**Course Code: C210**

**Year of Study: 2022-23**

**Course Name: THERMAL ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C210.1</b>	Explain the concepts in thermodynamics and laws of thermodynamics.
<b>C210.2</b>	Describe air standard efficiency of thermodynamic cycles and performance testing of IC engines
<b>C210.3</b>	Explain the properties of steam and working principle of boilers and turbines.
<b>C210.4</b>	Explain different modes of Heat transfer and working of heat exchangers and compressors.



**Course Code: C211**

**Year of Study: 2022-23**

**Course Name: FLUID MECHANICS & HYDRAULIC MACHINERY**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C211.1</b>	Explain fluid properties and pressure measurement techniques.
<b>C211.2</b>	Apply conservation laws to fluid flow over notches and, through pipes and orifices.
<b>C211.3</b>	Describe the construction, working and performance testing of hydraulic turbines.
<b>C211.4</b>	Describe the construction, working and performance testing of hydraulic pumps.

**Course Code: C212**

**Year of Study: 2022-23**

**Course Name: AUTOMOBILE ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C212.1</b>	Describe the classification and basic structure of an automobile, Basic engine component, Cooling systems, Lubrication systems, Fuelsystems, Ignition systems and Governing systems.
<b>C212.2</b>	Explain the Transmission system in Automobiles
<b>C212.3</b>	Explain the working of Ignition, suspension, steering and braking system of Automobile
<b>C212.4</b>	Compare Electric, Hybrid-Electric and Plug in Hybrid vehicles, Emission Control and review Indian motor vehicle Act.





**Course Code: C213**

**Year of Study: 2022-23**

**Course Name: COMMUNITY SKILLS IN INDIAN KNOWLEDGE SYSTEM.**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C213.1</b>	Identify knowledge, skills, and practices followed traditionally.
<b>C213.2</b>	Explain process, methods and implements followed traditionally.
<b>C213.3</b>	Identify improvements in process and tools to enhance productivity and living standards of the community.
<b>C213.4</b>	Make use of socially relevant technologies in the field of water, waste, energy management for the community.

**Course Code: C214**

**Year of Study: 2022-23**

**Course Name: INDUSTRIAL ENGINEERING**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C214.1</b>	Describe the functions of PPC, different types of plant layout and plant maintenance
<b>C214.2</b>	Apply method study and work measurement techniques in job standardization.
<b>C214.3</b>	Interpret the control charts used in quality control.
<b>C214.4</b>	Explain the risks involved in acceptance sampling, components of selling price of a product and the depreciation of assets.



**Course Code: C215**

**Year of Study: 2022-23**

**Course Name: THERMAL ENGINEERING LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C215.1</b>	Apply theoretical knowledge in evaluating the performance of IC engines
<b>C215.2</b>	Determination of viscosity, calorific value, flash point and fire point of fuels.
<b>C215.3</b>	Demonstrate performance test on Heat exchangers
<b>C215.4</b>	Conduct performance test on air compressors

**Course Code: C216**

**Year of Study: 2022-23**

**Course Name: FLUID MECHANICS LAB**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C216.1</b>	Describe the methods for pressure measurement and determine the metacentric height of floating body.
<b>C216.2</b>	Measure various properties such as pressure, velocity, flow rate using various instruments and perform the experiments to understand Bernoulli's theorem and its applications.
<b>C216.3</b>	Distinguish various pipe fittings and determine coefficient of friction and minor losses in pipe flow.
<b>C216.4</b>	Determine the co-efficient of discharge of Notches and Hydraulic co-efficients of orifice based on experiments.



**Course Code: C217**

**Year of Study: 2022-23**

**Course Name: MECHANICAL WORKSHOP IV**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C217.1</b>	Perform machining operations on lathe and shaper
<b>C217.2</b>	Apply technical skill to practice fitting operations and use of various gauges
<b>C217.3</b>	Perform fabrication works by making semi- permanent joints in metal sheets and Practice welding operations
<b>C217.4</b>	Apply technical skill to perform smithy and foundry work

**Course Code: C218**

**Year of Study: 2022-23**

**Course Name: Minor Project**

On completion of the course, student will be able to:

<b>COURSE CODE</b>	<b>COURSE OUTCOMES</b>
<b>C218.1</b>	Apply housekeeping standards as part of lean manufacturing for workplace maintenance.
<b>C218.2</b>	Plan procedures for maintenance and preventive maintenance of equipment, tools, machineries, etc.
<b>C218.3</b>	Choose methods for calibration of measuring and test equipment.
<b>C218.4</b>	Employ skills acquired to solve problems of social significance or to simplifying day to day tasks.