

Diploma in Engineering 1st year (Common to all Diploma Programs)

Course Outcomes

Year- First

Paper Name- English & Communication Skills-1

Semester- First

Paper Code DTHM-101

After successful completion of the course the students will be able to:

- Demonstrate effective communication skills.
- Demonstrate practical understanding of grammar in the practical use of English language.
- Utilize active listening & responding skills.
- Analyze the importance of body language.
- Identify different strategies of reading text
- Apply oral and written language skills into practice for building career.

Course Outcomes

Year –First
Paper- Applied Mathematics-1

Semester- First
Paper Code- DTMA-102

After successful completion of the course the students will be able to:

- Apply the knowledge of Determinants and Matrices in their professional work
- Analyze various mathematical series like Arithmetic and Geometric Progression.
- Compute complex numbers and its applications.

Course Outcomes

**Year- First
Paper – Applied Physics-1**

**Semester- First
Paper Code- DTPH 103**

After successful completion of this course the student will be able to:

- Apply knowledge of physics and engineering.
- Identify, formulae, and solve basic physics problems.
- Use the techniques, skills, and modern tools necessary for engineering practice.
- Illustrate laws of motion.
- Derive formula for kinetic & potential energy.
- Describe various properties of matter.
- Convert one scale of temperature into another.
- Describes modes of transfer of heat.

Course Outcomes

**Year-First
Paper – Basic Electronics Engineering**

**Semester- First
Paper Code- DTEC 104**

After successful completion of this course the student will be able to:

- Discuss about conduction in semiconductors.
- Apply the knowledge of junction diode into its applications.
- Identify the applications of transistor.
- Discuss about number system and op-amp.

Course Outcomes

Year: First

Paper: Basic Mechanical Engineering

Semester: First

Paper Code: DTME104

After successful completion of this course the student will be able to:

- Classify different laws of thermodynamics. Compare the temperature in different scale.
- Calculate the engineering problems based on thermodynamics.
- Develop the relation between COP of heat pump and refrigerator.
- Calculate the efficiency of heat engine on the basis of heat and work done.
- Assess the applications of S.I. and C.I. engines. Construction of two stroke and four stroke engines and study about the set up of IC engines.
- Classify different types of force system with free body diagram applied on a body. Verify also different laws of forces to solve various engineering problems.
- Evaluate the application on stress-strain in engineering problems.
- Develop the stress strain diagram of different types of material on the basis of their mechanical properties tested on UTM.
- Discuss the application of shaft in bending and twisting.

Course Outcomes

Year: First

Paper: Fundamentals of IT

Semester: First

Paper Code: DTCS105

For a diploma holder in civil engineering, it becomes imperative to know the fundamental of the subject in order to grasp the knowledge of the computer field. This subject will provide acquaintance with various terms knowledge of fundamental concepts of basic computer system, input/output and storage devices and various principles related to it.

After successful completion of this course the student will be able to:

- Apply basic knowledge of computer, comprising the history of computer, into practical use.
- Identify its characteristics and its application in various fields.
- Assess how to manage all the resources of computer and get to know the basics of operating system.
- Utilize the MS-office concept and discuss important documentation.
- Discuss regarding networking,
- Develop different components of computer network and also get to know various internet related concepts.
- Interpret E-commerce and traditional commerce.
- Describe different applications of information technology.

Course Outcomes

Year: First
Paper: Basic Electrical Engineering

Semester: First
Paper Code: DTEE 105

Diploma holder in Electrical Engineering comes across many electrical components and theorems of calculation of electrical quantities. They must have the knowledge of various Electric circuits and electrical equipments.

- Identify Basic Electrical components.
- Discuss working and application of different types of batteries.
- Discuss Electrical circuits.
- Interpret theorems for calculation of quantities in electrical network.
- Describe Passive elements and their response in Electrical circuit.
- Explain magnetic circuit and its quantities.
- Assess production of A.C quantity.

Course Outcomes

Year: First

Paper: Environmental Studies

Semester: First

Paper Code: DTES 108

After successful completion of this course the students will be able to:

- Illustrate the scope of environment studies
- Summarize different types of pollution.
- Compare & Contrast the concepts of SS, TDS, DO, COD, BOD.
- Manage hardness & alkalinity of water.
- Verify the types of hardness.
- Identify the sources of air pollution-natural and man- made.
- Explain about the soil pollution, major soil pollutants and their causes.
- Discuss & Describe environment laws.

Course Outcomes

Year: First
Paper: Applied Chemistry

Semester: First
Paper Code: DTCY 108

After successful completion of this course the students will be able to:

- Examine the basic and modern periodic laws.
- Apply knowledge of IUPAC nomenclature of hydrocarbons in their practical work.
- Demonstrate working knowledge of basic organic chemistry
- Analyze different order reactions and laws associated with electrochemistry.
- Test different solution properties like “Molarity” & “Molality”.
- Understand the terms related to metallurgy and extraction of metals.
- Classify different types of fuels, lubricants their properties, mechanisms use.

Course Outcomes

Year: First

Paper: English & Communication Skills-II

Semester: Second

Paper Code: DTHM 201

After completion of this course the students will be able to:

- Judge the various forms of literature from short stories to essay and poetry of Indian as well as international writers.
- Learning the different aspects & nuances of language to become better communicators.
- Analyze the in depth details of a given piece of text in its entirety and provide solutions to the questions & problems.
- Demonstrate efficiency in use of the various tools of formal written communication.
- Compose the various types of official and business correspondence in the relevant formats widely used in the industry.
- Develop the intricacies of business communication for enhanced personalities to become complete professionals.

Course Outcomes

Year: First

Paper: Applied Mathematics-II

Semester: Second

Paper Code: DTMA 202

After successful completion of this course the student will be able to:

- Interpret definition of function.
- Solve problems related to Differentiation, Maxima and minima, Equation of tangent and Normal to a curve etc.
- Estimate Simple standard integrals, Integration by substitution, By-parts and by partial fractions etc.
- Verify ordinary Differential Equations, Formation of differential equations, Solution of first order differential equations.
- Interpret Measures of Central Tendency, Measures of Dispersion and Co-efficient of rank correlation

Course Outcomes

Year: First

Paper: Applied Physics-II

Semester: Second

Paper Code: DTPH 203

After successful completion of this course the student will be able to:

- Apply knowledge of physics into engineering.
- Identify, formulae, and solve basic physics problems.
- Use the techniques, skills, and modern tools necessary for engineering practice.

Course Outcomes

Year: First

Paper: Basic Mechanical Engineering

Semester: Second

Paper Code: DTME 204

After successful completion of this course the student will be able to:

- Classify different laws of thermodynamics. Compare the temperature in different scale.
- Calculate the engineering problems based on thermodynamics.
- Develop the relation between COP of heat pump and refrigerator.
- Calculate the efficiency of heat engine on the basis of heat and work done.
- Assess the applications of S.I. and C.I. engines. Construction of two stroke and four stroke engines and study about the set up of IC engines.
- Classify different types of force system with free body diagram applied on a body. Verify also different laws of forces to solve various engineering problems.
- Evaluate the application on stress-strain in engineering problems.
- Develop the stress strain diagram of different types of material on the basis of their mechanical properties tested on UTM.
- Discuss the application of shaft in bending and twisting.

Course Outcomes

Year: First

Paper: Basic Electronics Engineering

Semester: Second

Paper Code: DTEC 204

After successful completion of this course the students will be able to:

- Explain about conduction in semiconductors.
- Demonstrate working knowledge of junction diode and its applications.
- Evaluate applications of transistor.
- Explain number system and op-amp.

Course Outcomes

Year: First
Paper: Basic Electrical Engineering

Semester: Second
Paper Code: DTEE 205

Diploma holder in Electrical Engineering comes across many electrical components and theorems of calculation of electrical quantities. They must have the knowledge of various Electric circuits and electrical equipments.

After successful completion of this course the student will be able to:

- Demonstrate knowledge of Basic Electrical components, working and application of different types of batteries.
- Use knowledge of Electrical circuits and Theorems for calculation of quantities in electrical network.
- Demonstrate knowledge of other Passive elements and their response in Electrical circuit.
- Use knowledge of magnetic circuit and its quantities.
- Use knowledge of production of A.C quantity.

Course Outcomes

Year: First

Paper: Fundamentals of IT

Semester: Second

Paper Code: DTCS 205

After successful completion of this course the student will be able to:

- Demonstrate basic knowledge of computer comprising the history of computer, its characteristics and its application in various fields.
- Manage all the resources of computer and get to know the basics of operating system.
- Use the MS-office concept in important documentation.
- Apply the knowledge regarding networking, different components of computer network into practical usage.
- Explain various internet related concepts.
- Use the knowledge of E-commerce and traditional commerce.
- Interpret different applications of information technology.

Course Outcomes

Year: First

Paper: Applied Chemistry

Semester: Second

Paper Code: DTCY208

On successful completion of this course the student will be able to:

- Interpret the basic and modern periodic laws.
- Apply knowledge of IUPAC nomenclature of hydrocarbons.
- Discuss the basic organic chemistry
- Explain different order reactions and laws associated with electrochemistry.
- Use different solution properties like molarity ,molality.
- Identify the terms related to metallurgy and extraction of metals.
- Explain fuels and lubricants their properties and uses.

Course Outcomes

Year: First

Paper: Environmental Studies

Semester: Second

Paper Code: DTES 208

After successful completion of this course the student will be able to:

- Interpret the scope of Environmental Studies.
- Explain different types of pollution and concept of SS, TDS, DO, COD, BOD.
- Assess about hardness & alkalinity of water, types of hardness.
- Interpret the source of air pollution-natural and man- made.
- Explain the soil pollution, major soil pollutant and their causes.
- Critique environment laws.

Diploma in Mechanical Engineering (ME-003)
Course Outcomes

Year: Second (II)
Paper: Applied Mechanics

Semester: Third (III)
Paper Code: DTME 301

Course Outcomes

After successful completion of this course the student will be able to:

- Differentiate between Scalar and Vector Quantities. Classify different systems of unit
- Analyze the need of finding resultant force in solving typical engineering design problems. Verify laws of forces to solve force related engineering problems.
- Understand the Importance of friction in daily life. Calculate the force of friction with diagram applied on a stationary or moving body.
- Interpret the importance of centroid or centre of gravity in designing of structures and assess the coordinates of centroid of different geometrical figures.
- Illustrate the utility and working of machine. Develop the mechanical advantage to lift the maximum load by minimum effort on several machines like screw jack, worm and worm wheel etc.
- Understand the effect of moment of force in structures. Modify and distribute the forces on different frames with the help of laws of forces to solve typical structure problems.
- Interpret the importance of moment of inertia in designing of structures.

Course Outcomes

Year: Second (II)

Paper: Material Science & Metallurgy

Semester: Third (III)

Paper Code: DTME 302

After successful completion of this course the student will be able to:

- Illustrate the importance of material and their properties.
- Discuss the ferrous metal and alloy and different heat treatment processes this is used in engineering material.
- Explain the non ferrous metals and alloys.
- Explain iron carbon diagram.
- Assess the uses of bearing metals.
- Identify the different metals and alloys.
- Identify and examine of metal and alloys using NDT method.
- Examine the different insulating material, fabricating material and refractory material.
- Use protecting coating material and sealant and adhesives.

Course Outcomes

Year: Second (II)

Paper: Workshop Technology-I

Semester: Third (III)

Paper Code: DTME 303

After successful completion of this course the student will be able to:

- Understand applications of welding torch.
- Explain the operation of gas welding tools.
- Assemble the different types of weld joints.
- Apply the safety measures required to be taken while using the casting operation.
- Identify the moulding defects.

Course Outcomes

Year: Second (II)

Paper: Engineering Thermodynamics

Semester: Third (III)

Paper Code: DTME 305

Looking at the needs of various industries and departments, the following topics lay a firm foundation for the advanced knowledge of topics like thermal power plants, internal combustion engines etc.

After successful completion of this course the student will be able to:

- Demonstrate basic theoretical & practical knowledge in the discipline.
- Solve practical problems with professional judgment.
- Apply acquired knowledge and skills of this course to analyze and design different thermal components, processes and systems.
- Identify & analyze the working of boiler used in power plants.
- Identify and analyze the different types of turbines used for power generation.
- Analyze the different types of condensers used in refrigeration system.
- Identify and analyze the different types of compressors used in industry and domestic domains.

Diploma in Mechanical Engineering (ME-003)

Year: Second (II)

Paper: Strength of Materials

Semester: Four (IV)

Paper Code: DTME 401

Course Outcomes

After successful completion of this course the student will be able to:

- Explain the concept of basic design.
- Analyze the use of structural component.
- Analyze the material in use.
- Estimate the various functions and concepts, effect of shear stress.
- Discuss about strength of riveted joints and Stress in thin cylinder

Diploma in Mechanical Engineering (ME-003)

Year: Second (II)

Paper: Applied Thermal Engineering

Semester: Four (IV)

Paper Code: DTME 402

Course Outcomes

After successful completion of this course the student will be able to:

- Identify the various types of IC engines and their functions.
- Estimate different tests on their variable factor of an IC engine.
- Illustrate the Vapors Compression System and refrigerant.
- Discuss the various types of vapour absorption System.
- Explain the various types Psychometric chart, various lines, psychometric process.

Diploma in Mechanical Engineering (ME-003)

Year: Second (II)

Paper: Workshop Technology-II

Semester: Four (IV)

Paper Code: DTME 403

Course Outcomes

After successful completion of this course the student will be able to:

- Discuss theory of metal cutting and chip formation.
- Work on the lathe machine and handle its operations.
- Use drilling machine, and explain types of drills and their functions.
- Use shaping, planing and slotting machine.
- Explain cutting fluid and their functions.

Diploma in Mechanical Engineering (ME-003)

Year: Second (II)

Paper: Hydraulics & Hydraulic Machines

Semester: Four (IV)

Paper Code: DTME 404

Course Outcomes

After successful completion of this course the student will be able to:

- Use the concept of fluid.
- Explain the properties of fluid.
- Estimate the pressure exerted by fluids.
- Identify instruments of measuring of pressure.
- Comprehending of different type of fluid flow, the energy in the fluid flow.
- Explain how to find out the discharge of different types of channel.
- Find out the losses in the fluid flow.
- Use hydraulic machine in the industries.

Diploma in Mechanical Engineering (ME-003)

Year: Second (II)

Paper: Basic Civil Engineering

Semester: Four (IV)

Paper Code: DTME 405

Mechanical diploma holders need to understand the various concepts of civil engineering. They must have knowledge of various construction materials, concrete, RCC and Foundation system. They need to understand the behavior of foundation when loaded under various machines like heavy, light or vibrating one. They need to understand important concepts of civil engineering so that they can use it while working in industries whenever required.

After successful completion of this course the student will be able to:

- Analyze various properties of construction materials and their behavior under service.
- Discuss the behavior of soil under load and suitability of various foundations.
- Perform general concrete work, and test of concrete.
- Explain properties of concrete.
- Explain the behavior of RCC.

Diploma in Mechanical Engineering (ME-003)

Year: Third

Paper: Production Technology-1

Semester: Fifth (V)

Paper Code: DTME 501

Course Outcomes

After successful completion of this course the students shall be able to:

- Use various types of manufacturing processes.
- Differentiate between capstan and turret lathe.
- Describe working principle of milling machine.
- Describe grinding wheel along with its specifications as per BIS.
- Explain different types of gear manufacturing process.
- Classify various types of presses.
- Explain the types of broaching machines.
- Describe metal forming process.
- Explain extrusion and drawing operation.
- Use various types of forging operations.

Diploma in Mechanical Engineering (ME-003)

Course Outcomes

Year: Third

Paper: Theory of Machine

Semester: Fifth (V)

Paper Code: DTME 502

Diploma holder in Mechanical Engineering comes across many machines. He must have the knowledge of various mechanisms, power transmission devices, balancing of masses, inversion etc. Hence this subject is offered.

After successful completion of this course the students shall be able to:

- Determine the kinematic chain and mobility, and perform the kinematic analysis of a given mechanism,
- Apply the fundamental principles of statics and dynamics to machinery
- Identify, analyze, and solve narrowly defined engineering technology problems.
- Identify and analyze the different types of CAMS and its functions in different conditions.
- Identify and analyze the different types of Governor and its working in different loads.
- Identify the different types of brakes used in automobile sector.
- Identify and analyze the different types of clutches used in automobiles.
- Analyze the transformation equipments used in industries for power transfer.

Diploma in Mechanical Engineering (ME-003)

Course Outcomes

Year: Third

Paper: Machine Element Design

Semester: Fifth (V)

Paper Code: DTME 503

After successful completion of this course the students shall be able to:

- Use various types of designing processes.
- Describe stress concentration factors.
- Design key and coupling for solid shaft.
- Interpret advance technology used in designing processes by using CAD & CAM.
- Define notch sensitivity and principle stress and strain.

Diploma in Mechanical Engineering (ME-003)

Course Outcomes

Year: Third

Paper: Metrology

Semester: Fifth (V)

Paper Code: DTME 504

After successful completion of this course the students shall be able to:

- Describe the concept of metrology and terms related to it.
- Identify the various types of measuring instruments.
- Find out the angular measurements of equipments.
- Assess the measurement of gears and terms related to the same.
- Define various fits and tolerances used in machine parts.

Diploma in Mechanical Engineering (ME-003)

Course Outcomes

Year: Third

Paper: CNC Machines & Automation

Semester: Fifth (V)

Paper Code: DTME 505

After successful completion of this course the student will be able to:

- Describe the principle of automation.
- Differentiate in the working of NC & CNC machines.
- Explain and Analyze CNC machines.
- Classify different components of CNC machines.
- Explain part programming
- Define different types of codes used in CNC machine
- Assess and solve common problems in mechanical, electrical, pneumatic components.
- Explain Flexible Manufacturing System.
- Recognize the use of robotics in the field of manufacturing.

Diploma in Mechanical Engineering (ME-003)

Year: Third

Paper: Production Technology-II

Semester: Sixth (VI)

Paper Code: DTME 601

Course Outcomes

After successful completion of this course the student will be able to:

- Differentiate between Conventional and Non-conventional processes used in production industries.
- Analyze the current techniques of production in industries.
- Use different types of Jigs and fixtures on their own depending upon the application.
- Apply Different coating processes and Metal finishing process required in industries.
- Impart Basic Knowledge of Powder metallurgy and plastic processes.
- Describe about press working operations used in sheet metal machining.
- Perform forging, rolling, extrusion and drawing.

Diploma in Mechanical Engineering (ME-003)

Course Outcomes

Year: Third

Paper: Automobile Engineering

Semester: Sixth (VI)

Paper Code: DTME 602

After successful completion of this course the student will be able to:

- Excel in various disciplines of Automobile Engineering with the emphasis on Design, Thermal and Manufacturing.
- Enhance professional practice to meet the global standards with ethical and social responsibility.
- Solve industrial, social, and environmental problems with modern engineering tools.
- Develop skills to work in teams, think intellectually and pursue life-long learning.

Diploma in Mechanical Engineering (ME-003)

Course Outcomes

Year: Third

Paper: Maintenance Engineering

Semester: Sixth (VI)

Paper Code: DTME 651

After successful completion of this course the student will be able to:

- Explain the importance of repair and maintenance in context of industry.
- Install machine and machine parts.
- Verify importance of lubrication and its types for various machine parts.
- Repair various machine parts which are frequently prone to failure.
- Propose the various types of maintenance procedures.

Diploma in Mechanical Engineering (ME-003)

Course Outcomes

Year: Third

Semester: Sixth (VI)

Paper: Entrepreneurship Development & Management

Paper Code: DTHU 604

After successful completion of this course the student will be able to:

- Plan and Manage Start Ups and enterprises.
- Set Up new projects through information about the process, procedure, rules and regulations
- Enhance effectiveness of the business through managerial skills.
- Create new employment opportunities.
- Modify work processes for higher profitability.
- Solve problems of varied nature that occur in business on a daily basis.