Students can gain knowledge to differentiate vector functions by distinguished methods. 

Students will come to know about advanced materials and their applications in day to day life. 

Students will come to know about harmonic oscillators. 

Students can select suitable special functions to evaluate improper integrals. 

Students will come to know magnetic materials and how properties of a material depends upon the crystal structure. 

Understanding of physical optics and its application in devices will be able to demonstrate and solve problems based on interference. 

Students gain knowledge on working of electrochemical cells and their usage for estimation of acid and bases strength by their potential. 

Good knowledge on determination of metal ions concentration in various samples using volumetric analysis. 

Application of knowledge to evaluate different types of pollution and control methods. 

Students gain knowledge on about quality of fuels, synthesis and their uses in internal combustion engines. 

Help student's to apply this knowledge to solve partial differential equations. 

Understanding of physical optics and its application in devices will be able to demonstrate and solve problems based on interference. 

Students gain knowledge on Laplace Transforms for solving initial value problems. 

The Laplace Transforms play an important role in solving many problems in Engineering and other real world phenomena. 

student's will come to know about the forces acting on different objects as it comes and in the workplace. 

Student's get awareness on social issues, environmental legislation. 

Students get inspiration on social issues, environmental legislation. 

Use different data types in a computer program. 

acquire the knowledge of materials with characteristic utility in appliances. 

To impart the knowledge of materials with characteristic utility in appliances. 

R16 Validation gate knowledge on solving higher order differential equations in engineering. And its applications in Engineering. 

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Students get inspiration on social issues, environmental legislation. 

Use different data types in a computer program. 

NAME OF THE SUBJECT: ENGLISH-2

1. The theme projects society's need to re-examine its traditions when they are outdated. 2. The scientific discoveries and inventions of Jagadish Raman are inspiring and exemplary to the readers and all scientists. 

1. The lesson underscores that the aim of Education is to enhance wisdom. 2. Abdul Kalam’s simple life and service to the nation inspires the readers to follow his footsteps. 

1. The lesson helps in identifying safety measures against different varieties of accidents at home and in the workplace. 

2. Acquisition of writing skills 

1. The lesson creates an awareness in the reader as to the usefulness of animals for the human society. 

2. Acquisition of writing skills 

1. The lesson helps in identifying safety measures against different varieties of accidents at home and in the workplace. 

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NAME OF THE SUBJECT: ENGINEERING CHEMISTRY


1. Students will learn to describe the structure of the atom. 2. Understand the periodic table and how it is constructed. 3. Understand the basic principles of chemical bonding. 4. Understand the concepts of thermodynamics and equilibrium. 5. Understand the principles of kinetics and reaction rates. 6. Understand the fundamental concepts of solution chemistry and colloids. 7. Understand the properties of organic compounds and their classification. 8. Understand the principles of functional groups and their reactions. 9. Understand the concepts of reaction mechanisms and their types. 10. Understand the principles of qualitative and quantitative analysis. 11. Understand the principles of analytical instruments and their types.

1. Students will come to know about balanced equations and their applications in day to day life. 

NAME OF THE SUBJECT: ENGINEERING PHYSICS

1. Students will come to know about harmonic oscillators. 

NAME OF THE SUBJECT: MECHANICAL ENGINEERING

1. Students will come to know about friction and its types. 2. Types of friction and their causes. 3. Friction and its effects on mechanical systems. 4. Tribology and its applications. 5. The fundamentals of tribology and its applications. 6. Tribology and its impact on engineering systems. 7. Tribology and its importance in various industries. 8. Tribology and its role in improving the performance of engineering systems.

NAME OF THE SUBJECT: COMPUTER PROGRAMMING

1. Students will come to know about the basic concepts of computer programming. 

2. Students will learn to describe the structure of the atom. 2. Understand the periodic table and how it is constructed. 3. Understand the basic principles of chemical bonding. 4. Understand the concepts of thermodynamics and equilibrium. 5. Understand the principles of kinetics and reaction rates. 6. Understand the fundamental concepts of solution chemistry and colloids. 7. Understand the properties of organic compounds and their classification. 8. Understand the principles of functional groups and their reactions. 9. Understand the concepts of reaction mechanisms and their types. 10. Understand the principles of qualitative and quantitative analysis. 11. Understand the principles of analytical instruments and their types.
5. Explain the difference between call by value and call by reference.

4. To introduce various commands in AutoCAD to draw geometric entities to create 2D and 3D wireframe models.

3. The fundamentals of gas welding and arc welding are studied.

2. Student will be able to draw the shear force and bending moment diagrams for different types beams subjected to different loads.

1. Impart the basic concepts of thermodynamics.

6. The student able to know the flexible power transmission element like belt, rope, chain drives and know the merits and demerits of each drive and their applications are studied.

5. Impart practical exposure on the microstructures of various materials like Fe, Cu, Al and their hardness evaluation

6. Understand the working principle of transistor and their applications and also concept of feedback amplifier.


1. Solving a network by using mesh and nodal analysis, finding current in a circuit by applying KVL and KCL.
6. Various sheet metal forming and processing of plastics are studied.

2. Select suitable material & significant tolerances, fits in critical design applications.

2. Operate lathe, milling machines, drill press, grinding machines, etc.

3. Understand the shape and structure of different types of screws, keys and Couplings.

2. Be able to describe and interpret the behavior and performance of fluid at rest.

3. Understand turning moment diagrams and to analyze dynamic force analysis, design of flywheel.

6. Be able to apply similitude and modeling principles and techniques to solve problems in hydraulics.

Mechanical Drawing

6. Represent different kinds of materials and Mechanical components conventionally.

2. Understand and analyze the engine parameters.

4. Select appropriate machining processes and conditions for different metals.

4. Be able to understand diff shaping operations

Fluid mechanics & Hydraulic machinery Lab

6. Compute friction losses, torque transmissions through clutches to gain knowledge on brakes and dynamo meters.

6. Measurements and calibration of instruments measuring pressure, temperature, displacement, speed, vibration etc.

Thermal Engineering

2. To study different types of an engine and process.

3. Students understand the principles of measuring instruments and gauges and their uses by using light.

3. Students understand machine tool alignment tests.

3. They will also understand the machine tool alignment tests.

3. Able to understand diff drilling operations

F&A Patent

2. Be able to understand diff drilling operations

6. Be able to apply cutting mechanics to metal machining based on cutting force and power consumption.

6. To apply cutting mechanics to metal machining based on cutting force and power consumption.

6. Be able to describe and interpret the behavior and performance of fluid at rest.

6. Be able to describe and interpret the behavior and performance of fluid in motion.

6. Be able to describe the behavior and performance of fluid when the fluid is flowing through the pipe.

6. Able to apply cutting mechanics and modeling principles and techniques to solve problems in hydraulics.

Machine Drawing

6. Various sheet metal forming and processing of plastics are studied.

2. Select suitable material & significant tolerances, fits in critical design applications.

2. Operate lathe, milling machines, drill press, grinding machines, etc.

3. Understand the shape and structure of different types of screws, keys and Couplings.

3. Be able to describe and interpret the behavior and performance of fluid at rest.

3. Be able to describe and interpret the behavior and performance of fluid in motion.

3. Be able to describe the behavior and performance of fluid when the fluid is flowing through the pipe.

3. Be able to apply cutting mechanics and modeling principles and techniques to solve problems in hydraulics.

Production Technology Lab

6. To select practical experiments on manufacturing processes and equipment.

6. To select practical experiments on metal casting, metal working, metal property demand preparations etc.

6. To select practical experiments on welding processes like metal arc welding & TIG welding.

6. To select practical experiments on METAL FORMING operations like blanking, punching.

6. To select practical experiments on processing of plastic.

Parental Engineering Lab

5. To study the basic concepts of IC engines

6. To study different parts of an engine and process.

3. Utilize design data handbook and design the element for strength, stiffness & fatigue

6. Students understand the principles of vibrational and also how to determine natural frequencies for different types of vibrations

Liquids

4. Able to understand diff shaping operations

6. Various sheet metal forming and processing of plastics are studied.

1. Be able to define unit of any parameter between three systems of units, understand the physical properties and characteristic behavior of fluids,

1. How to measure the important physical variables of various mechatronic systems like measurement of strain, torque, power.

2. How to measure the important physical variables of various mechatronic systems like measurement of force, speed, vibration, acceleration.

2. How to measure the important physical variables of various mechatronic systems like measurement of strain, torque, power.

2. Can understand the basic principles of current systems & feedback mechanism.

Metal Cutting and Machine Tools

1. Apply cutting mechanics to metal machining based on cutting force and power consumption.

1. Operate spot, slotting machines. drill press, grinding machines etc.

1. Select cutting tool materials and tool geometries for different metals.

1. Select appropriate machining processes and conditions for different metals.

1. Select appropriate machining processes and conditions for different metals.

1. Write simple CNC programs and control CNC machining.

Thermal Engineering (II)

1. Can analyze energy transfer and transformations.

1. Can get basic knowledge of components of steam and gas power cycles.

1. Can understand the basic principles of jet propulsion and rocket engineering.

Aeronautical Engineering

1. Students will be able to design techniques and fix for selected designs.

2. Students will be able to design techniques and fix for selected designs.

2. Students understand the principles of measuring instruments and gauges and their uses by using light.

3. They will also understand the machine tool alignment tests.

Machine Tool Lab

1. Be able to understand diff milling operations

4. Be able to understand diff milling operations

4. Be able to understand diff milling operations

4. Be able to understand diff milling operations

4. Be able to understand diff milling operations

4. Be able to understand diff milling operations
1. Students will be able to understand the importance and necessity of IPR.
2. To impart the basic concepts of copy rights and various process to apply.
3. To create an awareness among the students about the importance of patents.
4. What is a trade mark and the process associated with it and ownership status.
5. The student will be able to know the importance of trade secrets and various laws associated with non-disclosure of IT source and Novelties.

A. LDO

Operations Research

1. Formulate a Linear programming problem and the procedure to solve them.
2. Formulation and solution of transportation problems.
3. Formulation and solution of assignment problems.

Interaction Computer Graphics

1. Understand the fundamental concepts and theory of computer graphics.
2. Understand shading, and interactive control of 3D computer graphics applications.
3. The rendering parameters, surface concepts are understood.

Design of Machine Elements

1. The student able to select the suitable bearing based on the speed and load.
2. Application of the truss and analyze the lift of the hoisting.
3. The student able to design a load bearing system and analyze the system.
4. The student able to design a system of component and system.
5. The student able to select bearings for the specified load and speed.
6. The student has to know design of power transmission elements such as gears, belts, chains, pulleys, ropes, levers and power screws.

Industries

1. Students will be able to get a useful foundation and basic knowledge of heat transfer.
2. Understand the basic principles of heat transfer.
3. Analysis and solve construction problems.
5. Apply the knowledge to analyze and design heat exchangers, condensers, heat exchangers and radiators.

Industrial Engineering Management

1. Students will be able to analyze various robot configurations and components.
2. Understand modeling, and interactive control of 3D computer graphics applications.
3. The student able to identify various robot configurations and components.
4. The student able to identify the various elements and their activities in the computer integrated Manufacturing Systems.

Substitution & air conditioning

1. Students will be able to design refrigeration or air-conditioning equipment that meets the required specification.
2. Students understand the concepts of value engineering and project management techniques like PERT and CPM.
3. Students understand the concept of heat transfer and its application.

AEC

1. Students will be able to get a useful foundation and basic knowledge of heat transfer.
2. Knowledge of the subject required for innovative work and advanced studies.

EC

1. Students will be able to design refrigeration or air-conditioning equipment that meets the required specification.
2. Students understand the concept of heat transfer and its application.

ECO

1. Students will be able to design refrigeration or air-conditioning equipment that meets the required specification.
2. Students understand the concept of heat transfer and its application.

IET

1. Solve the basic principles of heat transfer and the requirement of application.
2. Provide the students with a basic knowledge of heat transfer and the requirement of application.

ECE

1. Students will be able to understand the basic fundamentals of CAD and manufacturing and learn 2D & 3D transformations of basic shapes.
2. Students will be able to understand the basic fundamentals of CAD and manufacturing and learn 2D & 3D transformations of basic shapes.
3. Students will be able to understand the basic fundamentals of CAD and manufacturing and learn 2D & 3D transformations of basic shapes.
1. Understand the concepts behind variational method and weight residual method

2. Identify the application and characteristics of finite elements such as bars, beams, plateaux, imperfect systems, beams & shells.

3. Solve element characteristics equations in generalization of global stiffness equations.

4. Be able to apply suitable boundary conditions to global equations.

5. Be able to identify how the first converted-based the structural domain.

6. Be able to identify how to form a scheme for problems involving FEM and fluid flow.

NANO TECHNOLOGY

1. The student will be able to understand the basics of Quantum mechanics, Solid state physics.

2. The student will be able to understand the applications of SIC, Silicon and Direct electronic nano-materials preparation.

3. The student will be able to understand mechanical, electrical, optical properties of nano-materials.

4. The student will be able to know the different properties of system nano-particles.

5. The student will be able to know how to select electron microspore, and optical microscope, and X-Ray diffraction.

6. The student will be able to understand about nano biology and nano medicine.

7. The student will be able to understand about nano electro mechanics and nano machinery.

8. The student will be able to understand the applications of SiC, Alumina and Zirconia nano materials preparation.

9. The basic differences between cast irons and Steels, their properties and practical applications are studied.

10. The student will be able to understand the basics of magnetic sensors and actuators.

11. The student will be able to understand the applications of micro-systems.

12. The student will be able to understand about the principles of magnetic sensors and actuators.

13. The student will be able to understand the principles of micro-fl uidic solution methods.

14. The student will be able to understand the principles of devices used in MOEMS.

15. The student will be able to understand the importance and function of inventory and to be able to apply selected techniques for its control and management under dependent and independent demand situations.

16. The student will be able to understand the principles of design of production and service systems.

17. Comprehensive, theory based understanding of the techniques and methods of non destructive testing.

18. Apply the systems concept for the design of production and service systems.

19. Establish a base of knowledge about renewable energy; an overview of the use of different types of non-renewable and renewable sources of energy.

20. Know the various types of power plants.

21. Understand the principles of elements used in R.F communication systems. Understanding the principles of micro chips used in chemical and bio-sensor.

22. Students can understand the concepts of automated inspection and various systems used to achieve automation in inspection.

23. Students can understand various systems used in material handling, automated storage and retrieval systems and interfacing handling and storage with manufacturing.

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30. Students can understand the concepts of automated inspection and various systems used to achieve automation in inspection.

31. Students can understand various systems used in material handling, automated storage and retrieval systems and interfacing handling and storage with manufacturing.

32. Students can understand the concepts of automated inspection and various systems used to achieve automation in inspection.

33. Students can understand various systems used in material handling, automated storage and retrieval systems and interfacing handling and storage with manufacturing.
The student must be able to:

1. Impart the basic concepts of thermodynamics.

2. The student must be able to understand the concept of speed control of DC Motor.

3. The student must be able to study different parts of an engine and process.

4. The student must be able to understand and analyse the engine parameters.

5. The student must be able to understand the importance of power and torque of various engines and working of various engine systems.

6. The student must be able to calculate performance parameters.

7. The student must be able to calculate mechanical details, power and efficiency of compressors.

8. The student must be able to understand and analyse the importance of power and torque of various engines and working of various engine systems.

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42. The student must be able to calculate mechanical details, power and efficiency of compressors.

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44. The student must be able to understand the importance of power and torque of various engines and working of various engine systems.

45. The student must be able to calculate performance parameters.
3. The student able to know design procedure of connecting rod and crankshaft.

4. Select appropriate machining processes and conditions for different metals.

5. Students understand the basic principles of fluid mechanics.

1. The student will able to select the suitable bearing based on the load to be supported.

2. Analyze stabilization of aero planes, ships, four wheelers and two wheelers.

3. To impart practical exposure on welding processes like metal arc welding & TIG welding.

4. Able to understand different forming operations like blanking, punching, etc.

5. To gain practical exposure on METAL FORMING operations like blanking, punching, etc.

6. Understand concepts of vibrations and also how to determine natural frequencies for different types of vibrations.

Machine Tools Lab

1. To gain practical exposure on different turning operations.

2. Able to understand different shaping operations.

3. To gain practical exposure on different grinding operations.

4. Able to understand different slotting operations.

5. To study different parts of an engine and process.

6. Understand and analyze the engine parameters.

Thermodynamics I

1. Can analyze energy transfer and transformations.

2. Can get basic knowledge of steam and gas power cycles.

3. Can understand the basic principles of jet propulsion and rocket engineering.

LATHES CUTTING AND MACHINE TOOLS

1. Apply cutting mechanics to metal machining based on cutting force and power consumption.

2. Operate lathes, milling machines, drill press, grinding machines, etc.

3. Select appropriate machining processes and conditions for different materials.

4. Learn machine tool structures and machining economics.

5. Write simple CNC programs and conduct CNC machining.