

## Physics

- Elements of vectors.
- Modern Physics.
- Simple harmonic motion and acoustics.
- Kinematics and Friction.
- Work, Power, and Energy.
- Units and dimensions.
- Heat and Thermodynamics.

## Mathematics

- Complex Numbers.
- Trigonometry.
- Differentiation & its Applications.
- Partial Fractions.
- Differential Equations.
- Matrices.
- Analytical Geometry.
- Integration and Its Applications

## Chemistry

- Acids and Bases.
- Water Technology.
- Chemical Bonding.
- Corrosion and Atomic Structure.
- Polymers.
- Solutions and Fuels
- Electrochemistry.
- Environmental chemistry.

## Engineering Syllabus

### ECE

- Microcontrollers and Microprocessors.
- Data Communications and Computer Networks.
- Advanced Communication Systems.
- Audio Video Systems.
- Circuit Theory.
- Digital Electronics.
- Communication Systems.
- Electronic Devices and Circuits.
- Electronic Measuring Instruments.
- Industrial and Power Electronics.

## Civil

- Irrigation Engineering.
- Reinforced Concrete Structures.
- Theory of Structures.
- Hydraulics and also Surveying.
- The Strength of Materials.

## EIE

- Process Control.
- Electronic Measuring Instruments.
- Microcontroller & PLCs.
- Electrical Engineering.
- Analytical and Biomedical instrumentation.
- Process Instrumentation.
- Digital Electronics.
- Electronics.
- Communications and Linear IC Applications.
- Industrial electronics and control engineering.

## Mechanical

- The Design of Machine Elements.
- Thermodynamics.
- Hydraulic Machines and Pneumatics.
- Refrigeration.
- Workshop Technology.
- Industrial Management and Engineering.
- Automobile Engineering.
- Engineering Materials, and Solid Mechanics.
- Welding, Forging, Foundry and Conventions in drawing.
- Steam Boilers, Nozzles, and Turbines.

## CSE

- C and Data Structures.
- Computer Organization.
- Computer Networks.
- Digital Electronics and RDBMS.
- Microprocessors.
- Internet Programming.
- Operating Systems.
- Object-Oriented Programming Through C++.
- Java Programming.

## Chemical

- Heat transfer.
- Chemical process principles.
- Inorganic Chemical Technology.
- Mechanical unit operations.
- Fluid mechanics.
- Material Technology.
- Thermodynamics and Reaction Engineering.
- Organic Chemical Technology.
- Energy Technology & Plant Operation.
- Mass Transfer.
- Instrumentation & Process control.
- Environmental Studies and Pollution Control Engineering.

## Ceramic Technology

- Glass Technology.
- Geology and Mineralogy of Ceramic Raw Materials
- Refractories.
- Fuels, Furnaces & Pyrometry.
- White Ware & Heavy Clay Ware.
- Cement Technology.
- Enamels and Glazes.
- Advanced Ceramics.

## EEE

- Electric Traction.
- A.C. Machines.
- Basic Electrical Engineering.
- D.C. Machines, Batteries & Measuring Instruments
- Electrical Estimation.
- Power Electronics And Micro Controller.
- Basic Electronics And Digital Electronics.
- Power System Generation & Protection.
- Transmission And Distribution.
- A.C. Circuits And Transformers.

## Metallurgical

- Non-Ferrous Extractive Metallurgy.
- Ferrous Extractive Metallurgy.
- Metallurgical Thermodynamics.
- Physical Metallurgy.
- Elementary Principles of Metallurgy.

- Welding Technology.
- Material Testing
- Heat Treatment Technology
- Fuels, Refractories, and Pyrometry.
- Mechanical Metallurgy.
- Foundry Technology.

### **Mining Engineering**

- Mining Geology.
- Mine Environmental Engineering – 2.
- Mining Machinery – 1.
- Methods of Working Metal.
- Mine Environmental Engineering – 1.
- Methods of Working – Coal.
- The Mining Machinery – 2.
- Mine Surveying.
- Mining Legislation and Management.
- Elements of Mining.

### **Bio-Technology**

- Bio-Reactor Engineering.
- Bio-Informatics.
- Bio-Physics.
- Microbiology.
- Enzyme Engineering.
- Genetics and Cell Biology.
- Molecular Biology – Genetic Engineering.
- Plant Bio-Technology.
- Basic Industrial Biotechnology.
- Animal Bio-Technology.