

Syllabus

Introduction Text: For Autonomous Curriculum, we have designed our syllabus based on students need and, to fulfill the course objectives. We have a common engineering physics paper in second semester and course oriented papers in third semester for different branch. The lists of papers are given below.

Semester	Subject Code	Title of the paper
II	19PH101T	ENGINEERING PHYSICS
II	19PH102L	PHYSICS LABORATORY
III	19PH203T	MATERIALS SCIENCE
III	19PH204T	PHYSICS FOR CIVIL ENGINEERING
III	19PH205T	FUNDAMENTALS OF NANOSCIENCE

Key highlights of Syllabus:

At the end of the course 19PH101T/ Engineering Physics the students are able to

Define the basics of properties of matter and its applications.
Explore the basics of crystals, their structure and different crystal growth techniques.
Differentiate the concept of thermal properties of materials and their applications.
Demonstrate the concepts of lasers and advanced physics of quantum theory and its applications in tunneling microscopes.
Discuss the basics of semiconductor physics and magnetic properties of materials and their applications.

At the end of the course 19PH102L /Physics Laboratory the students are able to

Explore the knowledge of young's modulus by non uniform bending to the girders.
Test the bad conductor by measuring the thermal conductivity and study the thermal properties of a material.
Demonstrate the rigidity modulus of the wire and moment of inertia of the disc.
Apply physics principles of optics and distinguish the spectrum of colours using grating.
Demonstrate the total internal reflection in optical fibres by calculating acceptance angle.

At the end of the course 19PH203T/Materials science the students are able to

Construct the phase diagrams for the Iron- Carbon system and also for any given alloy systems, explain various micro constituents of iron and its alloys.
Explain the composition, properties and applications of ferrous and non-ferrous metallic materials.
Explain the principles of various mechanical testing methods and describe the various deformation mechanisms.
Describe various methods of Heat treatment process and also illustrate the effects of cooling on phase transformation in iron-based alloy systems.
Describe the properties of non-metallic and composite materials and also recommend suitable materials for a particular engineering application.

At the end of the course 19PH204T/Physics for Civil engineering the students are able to

Explain the thermal performance of buildings and air conditioning systems for different types of buildings.
Explore the acoustic properties of buildings and sound absorption properties of different materials.
Design lighting artificially for various types of buildings.
Demonstrate the properties and performance of new engineering materials.
Discuss the natural hazards and man-made hazards to the buildings.

At the end of the course 19PH205T/Fundamentals of Nanoscience the students are able to

Compare the size dependency of nano structures over bulk materials.
Distinguish the different dimensions of nano particles and also classify the types of carbon nano tubes.
Describe the synthesis of different types of nanomaterials.
Discuss the characterization of nanomaterials.
Explore the application of nanomaterials in Engineering and technology