



MLR Institute of Technology

Laxma Reddy Avenue, Dundigal, Outhbullapur (M), Hyderabad – 500 043

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COURSE DESCRIPTION

Course No : _____

Course Title : _____

1. Course Objective

- The objective of teaching and engineering physics to engineering student is to inculcate the basic ideas about the events existing around us which helps to better understanding about engineering subject in further classes.
- Provided students with a sound base of knowledge and understanding of basic physical principles, to expose them to the applications of these principles in a broad range of areas, and to allow them to study some of these in depth.
- To provide knowledge and understanding of fundamental physical laws and principles, in particular in the areas of classical and quantum mechanics, electromagnetism, statistical physics, wave phenomena, optics and properties of matter.
- Engineering physics stresses the basic physics that forms the foundation of many technology developments in modern engineering applications.
- To teach broad principles in physics that contributes to the solutions of technical and engineering problems.
- To provide sound knowledge of the fundamental principles of engineering and physics, together with an appropriate mathematical background.

- To make them understand the role of the engineer/scientist in today's society.
- To develop the ability to apply knowledge of physics in one area to make appropriate intellectual connections and solve problems in other areas of physics or other fields

2. Course Educational Objectives

Technically, engineering is applied physics. Physics is the science of figuring out how things work, while engineering is the practice of making things that work. Engineering students should not only be aware that physics has direct application to engineering, but also that the problem solving and thinking skills developed through learning physics are the same skills they will need to use in their profession as an engineer.

The tremendous increase in the number of materials available and their varying physical properties, coupled with demands from new applications and more severe service requirements, have brought about many changes in attitudes and viewpoints. Advances in fundamental science have led to the development of a new technical area. The range of materials and their properties to the engineer today is vast. The course covers the nature and final properties of the bulk engineering materials. The course covers the nature and final properties of the

bulk engineering materials, forces and energies associated with them. Nano materials along with their properties and their preparation techniques are taught.

3. Course Outcomes

- Having depth of understanding in the principal fundamental disciplines of physics: mechanics, optics, statistical physics, solid state physics and quantum mechanics.
- Be able to use fundamental physics principles in the design of a process, system, or component.
- Be able to design and implement an experiment or theoretical study to understand a physical phenomenon in an applied context.
- The student will demonstrate the ability to think critically and to use appropriate concepts to analyze qualitatively problems or situations involving physics
- Understand a broad array of diverse physical phenomena in terms of fundamental concepts.
- Be able to use fundamental physics principles in the design of a process, system or component.
- An ability to apply knowledge of mathematics, science and engineering.

- An ability to design and conduct experiments and to analyze and interpret data.