

**IDC- 429: IDC or Open elective course (PHYSICS)****Inter Disciplinary Course offered by School / Department of Physics, SU**

**Title of the Course:** General Concepts of Physics.

**Nature of Course:** Open elective paper for students of other departments including students from humanities and social science.

**Prerequisites:** This course will be at popular level with school level mathematical/science knowledge. What is needed is curiosity to learn how physical world works.

**Course Credit:** 3 CH

**Duration:** 3 Hrs lecture/week, total 10 to 12 weeks duration in 2<sup>nd</sup> Semester.

**Intake Capacity:** 40

**Evaluation:** Two quizzes of 5 marks each, 15 marks mid semester and 25 marks end semester examination.

**Course Objectives:** Learning about concepts of physics in their scientific, historical and current technological context.

**Unit-1****6 Hr**

History of Modern Physics from Galileo, Newton up to Einstein, Introduction of solar system, galaxy, various astrophysical objects and big bang cosmology, Introduction of molecules, atoms, nucleus, elementary particles and their observation at various laboratories.

**Unit-2****8 Hr**

Nuclear Physics, Binding Energy, Nuclear Fusion and fission, Nuclear reactors, Nuclear Medicines, X-ray, MRI, PET/CT Scan.

**Unit-3****8 Hr**

Solid, Liquid and Gaseous state of matter. Metal, Insulator and semiconductor, Photoelectric Effect and its uses, Superconductivity and novel materials, Light and lasers, working of heat engines.

**Unit-4****8 Hr**

Basics of electronics, working of microphones, speakers and amplifiers, Power generation and transmission, Basics of Computers.

