

BS PREMED PHYSICS

Core and Specialization Courses

Physics Courses	Thermodynamics, Fluids, Elasticity
	Waves and Optics
	Modern Physics
	Computer Programming for Physics
	Basic Electronics
Specialization Courses	Radiation Physics
	Radiation Biology
	Nuclear Medicine
	Radiation Therapy
	Medical Imaging
	Health Physics
Biology Courses	Comparative Vertebrate Anatomy
	Vertebrate Embryology
	Fundamental of Physiology
	Cell Biology
	Microbiology
Chemistry Courses	Organic Chemistry
	Biochemistry
	Analytical Chemistry
Foundational Courses	Mechanics, Electricity & Magnetism
	Zoology and Botany
	Inorganic Chemistry

Course Descriptions

Radiation Physics (Lecture and Laboratory)

An introductory course on radiation physics aimed at providing a working background on the different types of radiation, their sources and detection and their general application in medicine and biology. Topics include different interactions of radiation with matter, various sources of radiation (man-made and natural), nuclear reactions and radioisotope production, neutron sources, nuclear reactors and particle accelerators in and their general application in medicine and biology.

Radiation Biology

Includes fundamental scientific concepts that tackle the negative implications brought about by radiation technology, and the effective means of preventing and minimizing those risks, particularly in industrial and medical settings. Essentially, topics that cover

the standard radiation safety schemes will be discussed to provide the students with the knowledge of radiation protection.

Nuclear Medicine

An introductory course that will provide undergraduate physics majors with basic fundamentals in nuclear medicine, including radiopharmaceuticals; nuclear medicine imaging such as gamma camera, thyroid and bone scintigraphy, PET; nuclear medicine therapy such as radionuclide therapy, radioimmunotherapy, in-vivo and in-vitro studies.

Medical Imaging (Lecture & Laboratory)

Introductory course on medical imaging which aims to provide students with knowledge on different types of medical imaging devices, their sources and their general applications in medicine and biology. It includes radioactivity, photon and charged particle interaction in matter, x-ray production and quality.

Radiation Therapy

The first of two courses in radiation therapy. This course covers topics on radiotherapy machines - their components and principles of operations, the various properties and mechanisms of x-ray and electron interaction with matter and the dosimetry of therapeutic x-rays.