

## ***MDPH615 Physics of Nuclear Medicine***

**Fall 2017**

The physics of radioactivity and the applications of radioisotopes and radiopharmaceuticals in medical diagnosis. Topics covered include fundamental nuclear physics, radioactivity, radiation spectrometry, the scintillation camera, image analysis and data processing in nuclear medicine, single photon emission tomography, and positron emission tomography.

Day	Lecture	Lecture Title
	1	Introduction to Nuclear Medicine
	2	Modes of Radioactive Decay
	3	Decay of Radioactivity – Batman Equation
	4	Radionuclide production
	5	Nuclear Radiation Measurements – Scintillation Counting Systems
	6	Nuclear Radiation Measurements – Pulse-Height Spectrometry
	7	Gamma camera – Basic Properties
	8	Gamma camera – Performance Characteristic
	9	Tomographic Reconstruction in Nuclear Medicine
	10	Single Positron Emission Tomography (SPECT)
	11	Positron Emission Tomography (PET)
	12	PET radiopharmaceuticals for Radiotherapy
	13	Internal radiation Dosimetry
<b>FINAL EXAM</b>		