

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Physics of Nuclear Medicine
Course number	AMSR4372
Faculty	
Department	
Course type	Major Needs
Course level	4
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - To understand principle of radiation safety, health physics, and the various studies performed in a Nuclear Medicine area
2 - To be familiarize with fundamental physical aspects of nuclear medicine, including radiation detection and spectrum analysis
3 - To recognize image formation, processing, and display; criteria for image evaluation
4 - To understand performing methods of gamma ray and positron tomography, stimulated x-ray fluorescence, and activation analysis

Intended Learning Outcomes

Knowledge and Understanding	<ul style="list-style-type: none"> * The student will demonstrate a basic understanding of the history and development of Nuclear Medicine and the basic math and science needed for application of Nuclear Medicine in radiation safety and instrumentation * The student will explain the radioactive decay process and the interaction of ionizing radiation with matter; describe the operation of the electrical components of various radiation detection systems
Professional Skills	<ul style="list-style-type: none"> * The course describes and differentiates the various imaging systems including scintillation cameras, multi-crystal cameras, and tomographic imaging systems: and discuss and apply the best quality control measures for continuous quality improvement
General Skill	<ul style="list-style-type: none"> * The student will explain the principles and employ the methodologies of radiation safety and health physics; and exhibit comprehension of the studies and procedures performed in a Nuclear Medicine clinic

Course Contents

1 - Basics of Nuclear Medicine
2 - Physics & Instrumentation Nuclear Medicn
3 - Nuclear Medicine Radiopharmacy
4 - Radiation Biology & Safety Bridge
5 - PET/CT
6 - Radiation SafetyQuality Mgmt. for CT

Teaching and Learning Methods

- | |
|-----------------------|
| 1 - Power point notes |
| 2 - lectures notes |

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
First mid term	after the first month	20
second mid term	after the second month	20
attendance	the whole semester	5
quiz	during the seventh week	5
Final exam	the end of semester	50

Books and References

Essential books	Clinical Nuclear Medicine Biersack, (2007
Recommended books	Essentials of Nuclear Medicine Imaging, 6th Revised edition, Elsevier - Health Sciences Division, 2012