COURSE SPECIFICATION

(Nuclear Medicine)

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programmeoffering the course:	Postgraduate MD degree of Clinical Oncology and Nuclear Medicine/ CONM617
(2) Department offering the programme:	Clinical oncology and nuclear medicine department
(3) Department responsible for teaching the course:	Clinical oncology and nuclear medicine department
(4) Part of the programme:	Second part
(5) Date of approval by the Department`s council	7/6/2016
(6) Date of last approval of programme specification by Faculty council	9/8/2016
(7) Course title:	**Nuclear Medicine**
(8) Course code:	CONM 617 NM
(9) Credit hours:	8 hours
(10)Total teaching hours:	120 hours lectures

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows: (either to be written in items or as a paragraph)

1- **Provide the basic information concerning use of radionuclides in clinical practice.**

2- **Teach the diagnostic and therapeutic procedures which include scintigraphy and radionuclide therapy indifferent diseases.**

(2) Intended Learning Outcomes (ILOs):

Intended learning outcomes (ILOs); Are four main categories: knowledge & understanding to be gained, intellectual qualities, professional/practical and transferable skills.

On successful completion of the course, the candidate will be able to:

A- Knowledge and Understanding

A1: Discuss the general basis and concepts of quality control in nuclear medicine.

A2: Identify radiopharmacology and radiation protection.

A3: Identify detection and measurements of nuclear radiation.

A4: Describe invitro diagnostic methods.

2- Intellectual activities (I)

The Postgraduate Degree provides opportunities for candidates to achieve and demonstrate the following intellectual qualities:

B- Intellectual skills

B1: demonstrate proficiency in diagnostic and therapeutic use of isotopes in different body systems.
B2: Demonstrate modification image acquisition protocols to accommodate the characteristics of individual patients and be able to identify and minimize image artifacts.

B3: Demonstrate proficiency radiation exposure of unsealed isotopes.

Communication skills:

D1: Trainees must be able to demonstrate appropriate and effective oral and written communication skills in general, with patients and with professional health care team.

D2: Trainees must take part in discussions in multi-disciplinary meetings.

(3) Course content:

semester	Subjects	Lectures
1st	***General basis of nuclear medicine:** -protocols for study performance and analysis -test evaluation, sensitivity, specificity, predictive value -selection and preparation of patients.	 1 2 1
	*Laboratory techniques used in nuclear medicine including preparation of standards. *application to nuclear medicine data acquisition *processing and display.	2 2 2

	*Dose preparation and quality assurance of the dose calibrators. *pediatric and special protocols for pediatrics.	2 2
	***Radiopharmacology.** -properties of commonly used diagnostic And therapeutic radionuclide. -production of radionuclide. -drug effect and complication.	 2 2 2
	***Health physics-waste disposal and decontamination.** ***correlation with other diagnostic tests.**	2 2
	In vitro diagnostic methods. • Isotopic and non-isotopic immunoassays methods used in current laboratory practice. •The role of laboratory testing in diagnosis and treatment in up-dated medicine (neonatal testing, tumors markers)	2 2
	*** Concepts of quality control in nuclear medicine.** ***protection of staff-family.**	2 2
2nd	*** Radiation exposure of unsealed source** ***cyclotron and radionuclide generators** ***principles of localization of radiopharmaceuticals.**	2 2 2
	*** imaging and counting devices** ***significance of normal and abnormal finding.** ***radiopharmaceuticals and mechanism of action**	2 2 2
	*** Therapeutic uses of isotopes:** **-thyroid cancers,** **- thyrotoxicosis,** **-bone metastasis,** **-polycythaemia** **-radioimmunotherapy**	2 2 2 2 3

	*** Diagnostic scintigraphic studies of:** **- thyroid**	3
3rd	**-brain,** **-myocardium** **-kidney** **-parathyroid** **spleen** **- pancreas** **-gastric** **-biliary** **-salivary glands** **-endocrinology**	3 3 3 3 3 3 3 3 3 3
4th	**-lung** **-bone** **- liver** **-colorectal** **-genitourinary** **-reticuloendothelial systems**	2 2 2 3 3 2
	***Detection and measurement of nuclear radiation.** -nuclear medicine detectors -gamma camera, SPECT -whole body counter -monitoring devices -PET	 2 2 2 2 2

	-scintillation counters -dose calibrators -collimation	2 2 2

(4) Teaching methods:

4.1: Lectures

4.2: Scientific meetings

4.3: Case presentation

4.4: PANEL discussion

4.5. Club journal

(5) Assessment methods:

5.1: written exam for assessment of knowledge and intellectual skills.

5.2 MCQ exam for assessment of knowledge and intellectual skills.

5.3: oral exam for assessment of knowledge and intellectual skills, and practical skills.

Assessment schedule:

Assessment 1: written exam held after 6 semester of registration

Assessment 2: oral exam held after 6 semesters of registration and OSCE Structured oral exams.

Assessment 3: MCQ exam held at the end of 3rd, 4th, 5th &6th semester.

Marks:

Written exam: 80 marks

MCQ: 20 marks

Oral exam: 100 marks,

References of the course:

6.1: Text books:

- **Fred A. Mettler and Milton J. Guiberteau**: *Essentials of Nuclear Medicine Imaging, 5th edition 2006*

- **Shackett.,***Nuclear Medicine Technology: Procedures and Quick Reference, (2ND edition 2008)*

Peter J. Ell, Sanjiv Sam Gambhir – Nuclear Medicine in Clinical Diagnosis and treatment
Emilio Bombardieri, John Buscombe, Giovanni Lucignani, Otmar Schober – Advances in nuclear oncology

6.3: Journals:

Seminars in nuclear medicine

6.1: Websites:

www.snm.com

(6) Facilities and resources mandatory for course completion:

Candidates and their learning are supported in a number of ways:
□Candidates logbook
□ Programme Specification
□Extensive library and other learning resources
□Computer laboratories with a wide range of software
□Intranet with a wide range of learning support material
□MSc/MD Dissertation Supervisor

Course coordinator:

Professor: Mohamed Elawady.

Assistant Professor: Ghada Ezzat Eladawei

Head of the department:

Professor, Ibrahim Awad

Date:

P.S. This specification must be done for each course.