



COURSE SPECIFICATION

(Nuclear Medicine)

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering 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	14/5/2016
(6) Date of last approval of programme specification by Faculty council	
(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.**
- A5: Define general aspects and concepts of functional diagnostic and radionuclide therapy in oncology, endocrinology, neurology, orthopedic and internal medicine.**

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.	2
	* correlation with other diagnostic tests.	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.	2

	*protection of staff-family.	2
2nd	* Radiation exposure of unsealed source	2
	*cyclotron and radionuclide generators	2
	*principles of localization of radiopharmaceuticals.	2
	* imaging and counting devices	2
	*significance of normal and abnormal finding.	2
	*radiopharmaceuticals and mechanism of action	2
	* Therapeutic uses of isotopes:	2
	-thyroid cancers,	2
	- thyrotoxicosis,	2
	-bone metastasis,	2
	-polycythaemia	2
	-radioimmunotherapy	3
	* Diagnostic scintigraphic studies of:	3
	- thyroid	
3rd	-brain,	3
	-myocardium	3
	-kidney	3
	-parathyroid	3
	spleen	3
	- pancreas	3
	-gastric	3
	-biliary	3
	-salivary glands	3
	-endocrinology	3

4th	-lung	2
	-bone	2
	- liver	2
	-colorectal	3
	-genitourinary	3
	-reticuloendothelial systems	2
	*Detection and measurement of nuclear radiation.	
	-nuclear medicine detectors	2
	-gamma camera, SPECT	2
	-whole body counter	2
	-monitoring devices	2
	-PET	2
	-scintillation counters	2
	-dose calibrators	2
	-collimation	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.