



COURSE SPECIFICATION

(Radiation technology)

Faculty of Medicine- Mansoura University

(A) Administrative information

(1) Programme offering the course.	Postgraduate Master degree of Clinical Oncology and Nuclear Medicine/ CONM517
(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.	First part
(5) Date of approval by the Department's council	6/5/2020
(6) Date of last approval of programme specification by Faculty council	20/9/2020
(7) Course title.	Radiotherapy technology
(8) Course code.	CONM517RT
(9) Credit hours	1 hour lectures 1 hour clinical
(10) Total teaching hours.	16 hours lectures 30 hours clinical

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(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- Educate the concepts and terminology of radiation technology.

2 Teach the various radiotherapeutic tools used in day to day oncological practice, and be aware of indications, contraindications, normal tissue tolerances (adult and pediatrics) and the management of radiation reactions and complications.

3- Prepare radiotherapist to analyze the technique-based specialities:

2D treatment techniques, 3D treatment techniques, Conformal radiotherapy.

IMRT techniques, Brachy therapy.

4- Provide the various radiotherapeutic procedures and its side effects

5- Educate the plan of treatment for each patient according to the stage of disease.

(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: Recognize general principles of radiotherapy.

A2: Describe different Radiation modalities and individualized techniques to different body organs.

A3: Express principles of radiotherapy equipments and machines.

A4 : Discuss principles of radiotherapy planning with brachytherapy.

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

B- Intellectual skills

B1: Interpret individualized radiotherapy techniques to tumour of different sites

B2: Distinguish the indications, contraindications and potential complications of radiotherapy in order to plan and prescribe appropriate treatment for common malignancies.

B3: Use different radiotherapy machines and equipments.

C- Professional/practical skills

C1: Designs the plan of treatment to System-based site specialities:

- breast cancer
- upper and lower gastrointestinal (GI)
- sarcomas
- urological malignancy and germ cell tumours
- skin tumours
- pediatrics oncology
- thoracic malignancy
- head and neck
- gynaecological oncology
- neuro-oncology
- lymphomas

C2: Applies different techniques to different body parts

C3: experiment different machines (linear accelerator, telecobalt, kilovoltage, simulators)

(3) Course content: lectures 15 hours

Subjects	Lectures
* General principles of radiotherapy of tumors: radiotherapy objectives, side effects and complications.	2
* Radiation modalities: external beam, brachytherapy, sealed radioactive sources .	1
* Radiotherapy equipments and machines: linear accelerators, telecobalt, kilovoltage X-ray machines and Simulators.	1
* Principles and basic techniques of radiation oncology	1
* Individualized radiotherapy techniques to tumour of different sites: -Brain. -Head and neck; -Breast - Thyroid&lung - Gastrointestinal - Genitourinary system - Skin - Bone& Soft tissue tumors - haematological - Pediatric tumors	 1 2 1 1 0.5 1 1 1 0.5 1

(4) Course content: clinical 30 hours

radiotherapy side effects and complications	1
external beam	2
linear accelerators	2
telecobalt,.	1
kilovoltage X-ray machines	1
Simulators	1
techniques of radiation oncology	1
*2D	1
*3D	1
* Individualized radiotherapy techniques to tumour of different sites:	
-Brain.	2
-Head and neck;	2
-Breast	2
- Thyroid&lung	2
- Gastrointestinal	2
- Genitourinary system	2
- Skin	2
- Bone& Soft tissue tumors	2
- haematological	2
- Pediatric tumors	2

(4) Teaching Methods

4.1, lectures

4.2, Scientific meetings

4.3, interactive teaching

(5) Assessment methods.

5.1. written exam for assessment of Knowledge and understanding.

5.2. oral exam for assessment of Knowledge and understanding, intellectual skills, practical and professional skills and structured oral exam.

5.2.clinical exam for assessment of, intellectual skills, practical and professional skills and OSCE stations ..

Assessment schedule.

Assessment 1. written exam held after 6 months of registration.

Assessment 2. oral exam held after 6 months of registration and structured oral exam .

Assessment3. clinical exam held after 6 months of registration and OSCE stations.

Assessment 4. MCQ exam held at the end of the semester (15th week).

Percentage of each Assessment to the total mark.

Written exam. 144marks,

MCQ (as continuous assessment). 36 marks.

Oral exam. 60 marks,

clinical exam. 60 marks,

References of the course.

6.2. Text books.

- Perez CA, Brady LW, Halperin EC, et al., editors. *Principles and Practice of Radiation Oncology. 7th edition*. Wolters Kluwer, 2018
- Zhong, Jim. "Book Review: Handbook of Evidence-

Based Radiation Oncology." (2019).

- Chmielowski, Bartosz, and Mary Territo. *Manual of clinical oncology*. Lippincott Williams & Wilkins, 2017.
- DeVita, Hellman, and T. S. Lawrence. "Rosenberg's. Cancer Principles & Practice of Oncology [Internet]." (2019)

(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

Programme Coordinator:

Prof Dr Somaya Eteba

Prof Dr: Rasha Abdellatif

Head of Department : Prof Dr Magda Allam

Date:

6/5/2020

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

We certify that all information required to deliver this programme is contained in the above specification and will be implemented. All course specification for this programme are in place.

Programme coordinators: Prof Dr Somaya Eteba Prof Dr Rasha Abdellatif	Signature & date:
Dean: Prof Dr Nesreen Salah Omar	Signature & date:
Executive director of the quality assurance unit: Prof Dr Nesreen Shalaby	Signature & date: