PROGRAMME SPECIFICATION

Faculty of Medicine–MansouraUniversity

(A) Administrative information

(1) Programme Title & Code	Postgraduate Master degree of **Clinical Oncology and Nuclear Medicine** CONM500
(2) Final award/degree	MSc degree of **Clinical Oncology and Nuclear Medicine**
(3) Department (s)	**Clinical Oncology and Nuclear Medicine**
(4) Coordinator(s)	**Prof Dr Somaya Eteba** **Prof Dr Rasha Abdellatif**
(5) External evaluator (s)	Prof Dr. Ahmad Elzawawy (Suez Canal university) Prof Dr. Salah Abdelmonim (Alexandria university)
(6) Date of approval by the Department's council	**6/5/2020**
(7) Date of last approval of programme specification by Faculty council.	**20/9/2020**

(B) Professional information

(1) Programme Aims:

The broad aims of the Programme are as follows:

1- provide the candidate with the general principles of radiotherapeutic tools, indications, contraindications, normal tissue tolerances, radiation protection and the management of radiation reactions and complications.

2- educate the technique-based specialities:

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

3- Educate the molecular basis of cancer, chemotherapy and radiotherapy effect , resistance and toxicity.

4- Provide opportunities to gain knowledge, practice and studying of radiobiological basis of different radiation shedules and its modifiers and how to protect.

5-provide the candidate with the ability to use different radiotherapeutic tools, and procedures according to case.

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

7-Educate candidate the plan and side effect of treatment for each patient according to the stage of disease .

8-Educate the candidate the terminology of nuclear medicine and Prepare the candidate to be able to use isotopes, machines, hot lab.

9- Provid the candidate with the different pharmaceuticals, how to prepare, and complications.

10- Educate the principles of medical statistic, and how to use differrent different methods of screening.

11-Teach the candidate how to choose treatment policy for cancer management and related disorders.

12-Prepare them to use different lines of treatment and how to deal with their side effects .

13-Teach the use of different radio-isotopes in the diagnosis and treatment of different diseases.

14-Educate the different pathologic types and the genetic basis of different malignancies.

15-Provide the candidate with pathology of cancer of different body parts.

16 - Prepare the candidate to know surgical treatment of cancer as main line of treatment and educate them the surgical problem related to tumors and their treatment**.**

17- educate the candidate to know how to diagnose and treate medical problems result from cancer and treatment of cancer.

18- Educate the candidates biological character of malignant cells and teach the candidate the different techniques used in experimental.

19- **Educate the basic principles of Molecular biology and behavior of malignant cells .**

20- give cadidate the ability to apply molecular therapy in treatment of cancer.

21- educate the candidate the principles of cancer as genetic disease and how to differentiate different cancer families.

22- Teach them gene therapy.

(2) Intended Learning Outcomes (ILOs)

On successful completion of the programme, the candidate will be able for:

A- Knowledge and Understanding

The trainee should: know and understand:

A1 : explain the basic radiotherapeutic procedures and imaging used for localization
A2: define physics knowledge to safely use ionizing radiation .

A3: Define molecular cell biology of tumor, cell cycle, cell survival curve.
A4: Describe Principles of radiation interaction with matter, radiation protection,
A5:Classify chemotherapeutic drugs and identify molecular basis of chemosensitivity.
A6: Recognize principles of radiotherapy equipments and machines.
A7: Describe different Radiation modalities and how to apply.
A8: Define laboratory techniques used, dose preparation and complications.
A9: Describe health physics, waste disposal and decontamination.

A10: Define epidemiological models and studies and principles of tests of significance.
A11: Recognize type of sampling and identify epidemiological surveillance and survey study.
A12: Define the principles of cancer management and decision making for treatment policy of different body organs and explain the toxicity profile of each line of treatment.

A13: Identify disorders related to cancer.
A14:Describe treatment of metastatic diseases.
A15: Discuss radiopharmacology, radioimmunoassay, and instrumentation,

A16:Apply nuclear medicine in diagnosis and treatment of different body parts.

A17: Explain pathologic behaviour of different malignancies.
A18: recognize pathologic parameters of tumors specific to body systems.
A19- Explain basics of surgery related to oncology.
A20: Distinguish of medical problems related to cancer and its management.

A21: Recognize prevention methods.

A22:describe treatment of medical disorders of cancer of different organ

A23: **Describe radiobiological items.**

A24:discuss spheroids, predictive assay.

A25: Discus behavior of tumor cells and its molecular basis

A26:Descripe molecular therapy use in treatment of cancer .

A27.define cancer as genetic disease.

A28:recognize types of gene therapy and how to use in treatment.

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Intellectual skills

B1: Interpret different treatment approaches and optimize solutions to clinical problems based on physical concepts and advanced radiotherapy techniques.
B2: Analyze interaction of radiation with matter and methods of radiation protection.
B3: Interprete radiation shedules and factors affecting.

B4:estimate different systemic treatment (effect, interaction, and toxicity).
B5: Interpret individualized radiotherapy techniques to tumour of different sites
B6: Distinguish the indications, contraindications and potential complications of radiotherapy in order to plan and prescribe appropriate treatment for common malignancies.
B7: interprete preparation, indication, waste disposal of different pharmaceuticals.
B8: recognize patient selection, different instrumentation and precautions.

B9: Apply different tests of significance.
B10: Interpret different methods of statistical screening and sampling medically.
B11: discus the different lines of treatment of cancer (all aspects) aiming to prescribe specific treatment to specific site and type.
B12: Evaluate the management of complications of disease processes and of different treatment modalities.
B13: Interpret diagnostic and therapeutic use of isotopes in different body systems.
B14: Demonstrate radiation exposure of unsealed isotopes.

B15: Differentiate between benign and malignant tumor..

B16: Distinguish the behaviour of tumor growth.
B17: differentiate masses in any part of body.
B18: recognize prevention and medical aspects of tumors of different body organs.

B19: Interpret medical disorders related to oncology and how to treate.
B20::Predict effects of radiation on cells, and factors affecting including hyperthermia.

B21: **Interprete different techniques to define radiosensitivity.**

B22: Demonstrate the growth of malignant cells and its control.

B23: apply molecular therapy in the treatment

B24 : differentiate nonsyndromic and syndromic cancer,

B25:apply gene therapy in the treatment of cancer.

C- Professional/practical skills

C1: Applies different techniques and plan according to site treated.

C2: Evaluate response, acute and late effect of radiation and chemotherapy on different tissues and body organs.

C3: Designs the plan of treatment to System-based site specialities and recognize how to deal with side effect.

C4:Evaluate prescription and administration of cytotoxic chemotherapy

C5: Apply issues of supportive care of cancer patients be able to deal with psychological aspects and rehabilitation of cancer patients.

C6: Apply differential diagnosis of masses of different body parts.

C7: Differentiate between medical problems interfere with cancer.

D- Communication & Transferable skills

D1: Trainees must be able to.
Explain the procedure of diagnosis and treatment details honestly in language appropriate to patients and their families.

D2: instruct the patients and family with the possible side effect and how to deal

D3: Trainees must be able to take an accurate and reliable history, and e**xplain disease processes and treatment details honestly in language appropriate to patients and their families.**
D4: Trainees must Take part in discussions in multi-disciplinary meetings and literature.

D5 Trainees should Assess and advise patients attending for follow-up after completion of treatment and advise on appropriate investigations during and after follow-up.

(3) Academic standards:

Academic standards for the programme (ARS) are attached in AppendixI.
A comparison between ARS, NARS, Program ILOs is attached in Appendix I I.

3.a- External reference points/benchmarks are selected to confirm the appropriateness of the objectives, ILOs and structure of assessment of the programme:

Accreditation council for graduate medical education

Website: www.rcr.ac.uk Royal college of radiotherapists

www-gmc-uk.org graduate medical council in UK

3.b- Comparison of the specification to the selected external reference/ benchmark:

The aims of the Benchmark are covered by the current program.

There are differences in the credit hours and the time table of the program

And there are subsidiaries in our program .

About 85% of the topics of the benchmark are covered in our program.

(4) Curriculum structure and contents:

4.a- Duration of the programme : 4semesters.

4.b- programme structure:

Candidates should fulfill a total of **45** credit hours

●4.b.1: Number of credit hours:

First part:5 credit hours.

- Medical radiation physics:1 credit hour
- Tumor biology& radiobiology & radiation protection: 1 credit hour
- Radiation technology: 1credit hour
- Nuclear medicine level 1: 1 credit hour
- Medical statistic: 1 credit hour

Second part: 18 credit hours

- Pathology of tumors: 3credithour
- Nuclear medicine level 2: 4credit hour
- Medicine and surgery related to oncology:2 credit hour
- Clinical oncology: 7 credit hours
- Elective course: 1credit hour

Clinical training: 14 credit hours

- Medical radiation physics:1 credit hour
- Tumor biology& radiobiology & radiation protection: 1 credit hour
- Radiation technology: 1credit hour
- Medicine and surgery related to oncology:1 credit hour
- Clinical oncology: 10 credit hours

Scientific activities: 2hours

Dissertation:6 credit hours

(5) Programme courses:

First part: a-Compulsory courses (6 months)

Course Title	Course Code	NO. of hours per week					Total teaching hours
		Theoretical		Clinical /practica		Total	
		ectures	seminars				15weeks
Medical Radiation Physics	CONM517MRP	1		1		2	15lectures 30practical
Tumor biology,Radiobiology& Radiation protectio	CONM517RBP	1		1		2	15lectures 30practical
Medical Statistics	CONM518MS	1				1	15lectures
Nuclear Medicine (level 1)	CONM517NM1	1				1	15lectures
Radiation Technology	CONM517RTec	1		1		2	15lectures 30practical
Total							75lectures 90practical

Second part:

Compulsory courses

Course Title	Course Code	NO. of hours per week					Total teaching hours
		Theoretical		Clinical /practial		Total	
		Lectures	seminars				(4 5 credit hours)
Clinical Oncology	CONM517CO	**7**		**10**		17	**105lectures 300practical**
Nuclear Medicine (level 2)	CONM517NM2	**4**				4lectures	**60lectures**
Pathology of tumours	CONM505 Path.T	3				3lectures	**45lectures**
Medicine & Surgery relate to Oncoloy	CONM517MSO	**2**		**1**		3	**30lectures 30practical**
Scientific activities	Work shops, conferences			**2**		2	**2**
Log book activities Including procedural skills	CONM517COC						
Dissertation (Thesis)							6 credit hours

b-Elective courses:

Course Title	Course Code	NO. of hours per week					Total teaching hours
		Theoretical		Clinical /practical		Total	
		ectures	seminars				(15weeks)
Experimental radiobiology	CONM517ExRB	2				2lectures	30lectures
Molecular biology related to oncology	CONM517MBC	2				2lectures	30lectures
Genetics related to oncology	CONM517GO	2				2lectures	30lectures
Total							

Programme-objectives ILOs matrix:

objectives	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17
1	×	×															
2																	
3			×		×												
4				×													
5						×											
6							×										
7							×										
8								×	×								
9								×									
10										×	×						
11												×	×	×			
12												×					
13															×	×	
14																	×
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	

objectives	A18	A19	A20	A21	22	23	24	A25	A26	A27	A28	B1	B2	B3	B4	B5	B6
1													×				
2												×		×			
3															×		
4																	
5																	
6																×	×
7																	×
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15	×																
16		×															
17			×	×	×												
18						×	×										
19								×									
20									×								
21										×							
22											×						

objectives	B7	B8	B9	B10	11	12	13	B14	B15	B16	B17	B18	B19	B20	B2	B22	B23
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8	×																
9	×	×															
10			×	×													
11						×											
12					×	×											
13							×	×									
14										×							
15									×								
16											×						
17												×	×				
18														×	×		
19																×	
20																	×
21																	
22																	

objectives	B24	B25	C1	C2	c3	c4	c5	C6	C7	D1	D2	D3	D4	D5
1														
2			×											
3				×										
4				×										
5														
6					×									
7					×									
8										×	×			
9										×	×			
10														
11							×					×		
12						×							×	×
13														
14														
15														
16								×				×	×	
17									×			×	×	
18														
19														
20														
21	×													
22		×												

Programme–Courses ILOs Matrix

P.S. All courses` specifications are attached in Appendix III.

Course Title / Code	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12	a13	a14	a15	a16	a17
Medical Radiation Physics	×	×															
Tumor biology Radiobiology&Radiation protection			×	×	×												
Radiation Technology						×	×										
Nuclear Medicine(level 1)								×	×								
Medical Statisticss										×	×						
Clinical Oncology												×	×	×			
Nuclear Medicine(level 2)															×	×	
Pathology of tumours																	×
Medicine & Surgery related to Oncoloy																	
Experimental radiobiology																	
Molecular biology related to oncology																	
Genetics related to oncology																	
Log book activities including Practical procedures																	
Dissertation (Thesis)																	

Course Title / Code	a18	a19	a20	a21	a22	a23	a24	a25	a26	a27	a28	B1	B2	B3
Medical Radiation Physics												×	×	×
Tumor biology Radiobiology&Radiation protection														
Radiation Technology														
Nuclear Medicine(level 1)														
Medical Statisticss														
Clinical Oncology														
Nuclear Medicine(level 2)														
Pathology of tumours	×													
Medicine & Surgery related to Oncoloy		×	×	×	×									
Experimental radiobiology						×	×							
Molecular biology related to oncology								×	×					
Genetics related to oncology										×	×			
Log book activities including Practical procedures														
Dissertation (Thesis)														

Course Title / Code	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	b14	B15	B16	B17
Medical Radiation Physics														
Tumor biology Radiobiology&Radiation protection	×													
Radiation Technology		×	×											
Nuclear Medicine(level 1)				×	×									
Medical Statisticss						×	×							
Clinical Oncology								×	×					
Nuclear Medicine(level 2)										×	×			
Pathology of tumours												×	×	
Medicine & Surgery related to Oncoloy														×
Experimental radiobiology														
Molecular biology related to oncology														
Genetics related to oncology														
Log book activities including Practical procedures														
Dissertation (Thesis)														

Course Title / Code	B18	B19	B2	B21	B22	B23	B24	B25	C1	C2	C3	C4	C5	C6
Medical Radiation Physics									×					
Tumor biology Radiobiology&Radiation protection										×				
Radiation Technology											×			
Nuclear Medicine(level 1)														
Medical Statisticss														
Clinical Oncology												×	×	
Nuclear Medicine(level 2)														
Pathology of tumours														
Medicine & Surgery related to Oncoloy	×	×												×
Eperimental radiobiology			×	×										
Molecular biology related t oncology					×	×								
Genetics related to oncology							×	×						
Log book activities including Practical procedures														
Dissertation (Thesis)														

Course Title / Code	C7	D1	D2	D3	D4	D5
Medical Radiation Physics						
Tumor biology Radiobiology&Radiation protection						
Radiation Technology						
Nuclear Medicine(level 1)		×	×			
Medical Statisticss						
Clinical Oncology				×	×	×
Nuclear Medicine(level 2)						
Pathology of tumours						
Medicine & Surgery related to Oncoloy	×			×	×	×
Experimental radiobiology						
Molecular biology related to oncology						
Genetics related to oncology						
Log book activities including Practical procedures						
Dissertation (Thesis)						

(6) Programme admission requirements:

- **General requirements:**

According to the faculty postgraduate bylaws Appendix IV.

- **Specific requirements (if applicable):**

None

(7) Regulations for progression and programme completion:

- Student must complete minimum of **45** credit hours in order to obtain the MSc degree, which include the courses of first and second parts, thesis , activities of the log book and other activities in the department.
- Courses description are included in Appendix III.

During 36 months , residents will have clinical rotation in the clinical oncology and nuclear medicine (out patient's clinic, nuclear medicine unit, chemotherapy, in patients, and radiotherapy planning).

The dissertation:

The postgraduate student has to prepare an essay on a chosen subject in clinical oncology or nuclear medicine . It is registered 6 months after starting the M Sc program. An open discussion of the essay presented by the student must be accomplished before earning the degree.

The second part includes:

(covered through 3semesters)

A course in clinical oncology and nuclear medicine .
A clinical and practical training in clinical oncology and nuclear medicine (log book activities).
The course topics are covered through:

Lectures
Clinical seminars
Journal clubs
Conferences

- Lectures and seminars of the previously described courses must be documented in the log book and signed by the lecturer.
- Works related to thesis must be documented in the log book and signed by the supervisors.

Final exam:

اجلزء األول

املقرر	االختبار	حتريري	MCQ	شفهي	عملي	إمجايل
		الـــدرجة				
الفيزيااااشع ايةاااا ش يت الطبيت	إخباشت ريريواارت راله ثاا سااش شث + اخنبشت ةفهي + اخنبشت ملي	411	63	36	36	666
بيلحجيااااش ايةاااا ش والنقشيت نهش	إخنبشت ريريرت ره ث سش شث + اخنبشت ةفهي + اخنبشت ملي	411	66	36	36	666
ركنىلىجيااااااش ااااااا ألوتام بنية ش	إخباشت ريريواارت رااله ثاا سااش شث + اخنبشت ةنهي + اخنبشت حلي	411	63	36	36	666
ايحصشع الطبي	إخنبشت ريريرت ره ث سش شث + اخنبشت ةنهي	411	63	426		666
النظشئر المش ت	اخنبشت ريريرت ره ث سش شث + اخنبشت ةنهي	411	63	426		666
إجمشلي ال تجت						4066

اجلزء الثاني

املقرر	االختبار	الـــدرجة				إمجايل
		حتريري	MCQ	شفهي	إكلينيكي	
اا ألوتام بشيةاا ش وال قشقير الكيمشويت	إختبشتان ريريريشن ة كل نمش ث سش شث + اخنبشت ةنهي + اخنبشت إكلينيكي	426 + 426	66 + 66	406	406	366
التشاااااالي وال ااااا بلنظشر المش ت	اخنبشت ريريرت ره ث سش شث + اخنبشت ةنهي	426	66	406		666
بشنلجيش ألوتام	اخنبشت ريريارت راه ئا سااش شث + اخنباشت ةنهي	426	66	406		666
البشطنت والجراحت نيمش له قت بشألوتام	اخنبشت ريريرت)وتقنشن(ره ث سش شث + اخنبشت ةنهي + اخنبشت إكلينيكي	00 + 00	40 + 40	50	50	666
المؤرت االخنيشتت	اخنبشت ريريرت ره سش نشن + اخنبشت ةنهي	06	26	06		406
إجمشلي ال تجت						4306

(8) Evaluation of Programme's intended learning outcomes (ILOs):

Evaluator	Tools*	Sample size
Internal evaluator (s)	**INTERVIEW** **COMMUNICATION**	
External Evaluator (s) **Prof Dr. Ahmad Elzawawy** **(Suez CanalUniversity)** **Prof Dr. Salah Abdelmonim** **(Alexandria University).**	**QUESTIONNAIRE**	
Senior student (s)	**None**	
Alumni	**None**	
Stakeholder (s)	**None**	
Others	**None**	

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