



*Faculty of Medicine
Ain Shams University*

Postgraduate Studies

*Master of Science in
Clinical Oncology and Nuclear
Medicine*

درجة الماجستير في علاج الأورام والطب النووي

Program Code: ON600

**Program Guide and
Logbook**

C a n d i d a t e C u r r i c u l u m v i t a e

[Name]

Please attach your recent photo

[telephone no]

[mobile no]

[mailing address]

[email address]

[postcode]

Experience

[organization]

[your present job title]

[start date]

[location]

[responsibilities]

[organization]

[previous job title]

[start and end date]

[location]

[responsibilities]

Education

[certificates]

[start and end date]

[school or college]

[Empty box for additional information]

Training

[any other training that will be useful in your job]

Filled by post graduate authorities

Date of Registration

First semester	_____
Second semester	_____
Third semester	_____
Fourth semester	_____

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I – WELCOME STATEMENT:

The Department of **Clinical Oncology and Nuclear Medicine** welcomes you to the Master degree in **Clinical Oncology and Nuclear Medicine**. As a department we are committed to medical student education and continuously strive to improve your educational experience.

This handbook presents information guide and logbook activity of the Master degree in **Clinical Oncology and Nuclear Medicine** administered by the **Clinical Oncology and Nuclear Medicine** department, Faculty of Medicine, Ain Shams University.

II – MISSION STATEMENT:

The mission of the Faculty of Medicine, Ain Shams University is "**The preparation of a competent graduate, who is able to compete on both national and regional levels, capable of life long learning, training and tutoring, while adhering to the codes of practice of medical health services and ethics.**

The college as well, seeks continuous development of programs and courses. It also enhances expansion of applied scientific research and health programs for community services and environmental development.

Moreover, through providing distinguished academic and research cadres of teaching staff, supporting the administrative system and sustainability of own resources, the college is able to achieve goals and objectives"

The mission of the degree of Master of science in Clinical Oncology and Nuclear Medicine is to train candidates up to the level consistent with the current scientific knowledge and to direct the related scientific research towards the benefit of the society.

III – SENIOR SUPERVISOR AND AFFILIATED DEPARTMENTS AND HOSPITALS

SENIOR SUPERVISOR

Prof.

E-mail:

AFFILIATED DEPARTMENTS AND HOSPITALS

Clinical Oncology and Nuclear Medicine department, Faculty of Medicine,
Ain Shams University -----

IV – PROGRAM SPECIFICATIONS

A- Basic Information

1. Program title:

Master of Science in Clinical Oncology and Nuclear Medicine

2. Program type: Single Double Multiple

3. Faculty

Faculty of Medicine

4. Department

Clinical Oncology and Nuclear Medicine Department

5. Coordinator

Prof Sherif Abdel Wahab

6. Last date of program approval: 2013

B- Professional Information:

1. Program aims:

The aim of this program is to ensure that the candidate will be acquainted with comprehensive management, and research methodology in the field of clinical oncology and nuclear medicine to be able to be an independent Specialist.

2. Intended learning outcomes (ILOs):

a. Knowledge and understanding:

By the end of the program the candidate will be able to:

- a1 – Identify the principles of basic sciences essential to clinical oncology and nuclear medicine.
- a2 – Describe the epidemiology, pathology, clinical manifestations, prevention, early detection and diagnosis of cancer
- a3– List and define different external beam modalities, brachytherapy, chemotherapeutic, endocrine, biologic therapy, and other forms of therapy in treatment of cancer and certain non-malignant diseases.
- a4- Identify the indications for irradiation, chemotherapy, and special therapeutic considerations and methods to evaluate response and follow-up unique to each site and stage of malignant diseases and certain non-malignant diseases.
- a5- Recognize and select diagnostic imaging and non-imaging nuclear medicine applications and therapeutic applications
- a6- Describe therapeutic uses of unsealed radiopharmaceuticals
- a7- Recall and define pain management and palliative care
- a8- Recognize and describe radiation safety rules and regulations
- a9- Demonstrate knowledge and define of importance of ethical approval and patient's consent for clinical research and treatment, and basis and principles of quality in oncology practice.

b. Intellectual capabilities:

By the end of the program the candidate will be able to:

b1- Use the scientific method of problem solving and evidence-based decision making.

b2- Select an appropriate treatment plan for patients with malignancies and special non-malignant diseases

b3- Select the most appropriate nuclear medicine studies, interpreting the information obtained, and correlating this information with other diagnostic studies and defining the need for additional images.

b4- Select best nuclear medicine therapy for selected clinical conditions.

b5- Integrate and evaluate information from a variety of sources.

c. Professional and practical skills :

By the end of the program the candidate will be able to:

c1- Incorporate scientific progress in clinical oncology and nuclear medicine effectively in clinical practice

c2- Demonstrate competency in diagnosis and management of malignant disorders and oncologic emergencies

c3- Demonstrate competency in the prescription and administration of chemotherapeutic, endocrine, biologic agents and other forms of therapeutic agents used in treatment of malignant diseases, oncologic emergencies, and other specific diseases.

c4- Demonstrate competency in planning radiotherapy and management of radiotherapy side effects.

c5- Participate in and personally perform and analyze a broad range of clinical oncology and nuclear medicine procedures.

c6- Develop and continuously improve skills in obtaining medical knowledge using new techniques as they develop in information technology.

c7- Perform technological methods of nuclear medicine therapy .

c8- Take up research projects either clinical or basic.

d. General and transferable skills:

By the end of the program the candidate will be able to:

d1- Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

d2- Communicate effectively with physicians and other health professionals.

d3- Work effectively as a member of a health care team or other professional group.

d4- Act in a consultative role to other physicians and health professionals

d5- Maintain comprehensive, timely, and legible medical records.

d6- Demonstrate skills in performing patient consent in clinical research and for treatment.

d7- Present a research assignment orally and deliver it in both written and electronic forms.

d8- Work cooperatively and show respect to other opinions.

3. Academic standards: (Benchmarks) Academic Reference Standards (ARS) of NAQAAE guided by:

- Kasr EL Aini Center of Clinical Oncology (National)
- The Royal College of Radiologists (The Faculty of Clinical Oncology)
- European Society of Medical Oncology
- American Society of Clinical Oncology
- European Society of Therapeutic Radiology and Oncology

Curriculum structure and contents:

4a- Program duration: 2 years (4 semesters)

4b- Program structure:

The following points have to be covered:

المناهج			
الساعات المعتمدة	الكود	المقررات الدراسية	
		دورة أساسيات البحث العلمي	متطلبات الكلية
1.5	ON6001	فيزياء	الجزء الأول
1.5	ON6002	بيولوجى الإشعاع	
0.5	ON6003	إحصاء طبي	
1.5	ON6004	طب نووى	
1	ON6005	باثولوجى	
6			الرسالة
4	ON6006	علاج الأورام الإكلينيكي	الجزء الثاني
4	ON6007	العلاج بالأدوية الكيماوية	
3	ON6008	طب نووى	
4	ON6009	العلاج بالإشعاع	
1	ON6010	باطنه	
1	ON6011	جراحه	
1	E6009 E6132 E6002	يختار الطالب مادة واحدة من : E6132 - طب نووى E6009-إحصاء طبي E6002-البيولوجيا الجزئية	الاختيارية المقررات
6			كراسة الأنشطة
36			المجموع

5. Program courses:

A) Compulsory

Code number	Course Title	Number of hours /week		
		Lectures (one hour)	lab	Exer
ON6001	Physics	18 hours lectures 9 hours training		
ON6002	Radiobiology	18 hours lectures 9 hours training		
ON6003	Medical statistics	4 hours lectures 7 hours training		
ON6004	Nuclear Medicine	7.5 hours lectures 30 hours practical		
ON6005	Pathology	12 hours lectures 6 hours training		

5.1- Level/Year of Program...2 Semester...2- 4

A) Compulsory- number required

Code number	Course Title	Number of hours /week	
		Lectures (one hour)	Training
ON6006	Clinical Oncology	27 hours lectures 66 hour training	
ON6007	Chemotherapy	18 hours lectures 84 hour training	
ON6008	Nuclear Medicine	15 hours lectures 60 hours training	
ON6009	Radiation Technology	27 hours lectures 66 hour training	
ON6010	Internal Medicine	5 hours lectures 20 hours training	
ON6011	Cancer Surgery	10.5 hours lectures 9 hours training	

b) Elective

Code number	Course Title	Number of hours /week	
		Lectures (one hour)	Training
E6009	Medical Statistics	7.5 hours lectures 15 hours training	
E6132	Nuclear Medicine	6 hours lectures 18 hours training	
E6002	Molecular Biology	13 hours lectures 4 hours training	

6. Program admission requirements:

المادة (6) : يشترط لقيّد الطالب للحصول على درجة الماجستير :-

1 - أن يكون حاصلًا على درجة البكالوريوس في الطب والجراحة من إحدى جامعات جمهورية مصر العربية أو على درجة معادلة 04-2 أن يكون قد أمضى سنة التدريب (الامتياز) 03- موافقة جهة العمل 04- تسديد الرسوم ومصاريف التدريب واستهلاك الأجهزة واستيفاء المستندات المطلوبة في الملحق (1) 05- التفرغ للدراسة لمدة فصلين دراسيين قبل دخول امتحان الجزء الثاني 0

ملحق (1) : يقدم طالب الإلتحاق لدرجة الماجستير الأوراق التالية :-

1- طلب الإلتحاق 2 0 - شهادة البكالوريوس 3 0 - شهادة الإمتياز 4 0 - شهادة الميلاد أو مستخرج رسمي 0
5 - الموقف من التجنيد 6 0 - موافقة جهة العمل على التسجيل والتفرغ المطلوب 7 0 - عدد 6 صور فوتوغرافية جديدة 8 0 - بالنسبة للوافدين يقدم الطالب موافقة السفارة ويحدد جهة تحمل النفقات كما يقدم شهادة صحية 0

7. Regulation for progression and program completion

مادة (8): يتم التسجيل للماجستير مرة واحدة في السنة تبدأ من أول يوليو حتى آخر أغسطس على أن تبدأ الدراسة في شهر أكتوبر من كل عام. ويجوز قبول تسجيل النواب والمعيدين والوافدين في الفترة من أول نوفمبر حتى آخر ديسمبر على ألا يسمح لهم بدخول إمتحان الجزء الأول إلا بعد إنقضاء فترة الدراسة المطلوبة .

مادة (9): توزع الدراسة في كل عام جامعي على فصلين دراسيين مدة كل منهما خمسة عشر اسبوعاً . يبدأ الأول في أول أكتوبر ويبدأ الثاني في منتصف فبراير. مع تنظيم فصل دراسي صيفي مكثف لمدة ستة أسابيع . ويتم التسجيل للفصل الدراسي قبل اسبوعين من بدايته على الأقل بعد إستيفاء الشروط حسب المقررات المسجلة. ولا ينبغي أن يزيد العبء الدراسي في الفصل الواحد عن 6 ساعات معتمدة. ويجوز للطالب تعديل المقررات خلال اسبوعين من بداية الفصل الدراسي (بالحذف أو الاضافة). كما يجوز له الانسحاب خلال ستة اسابيع من احد المقررات دون احتسابه رساباً فيه.

المادة (11) : مدة الدراسة للحصول على درجة الدبلوم أو الماجستير هي أربعة وعشرون شهراً (أربعة فصول دراسية) على جزئين يجتاز فيها الطالب برنامجاً تدريبياً متكاملاً طبقاً للساعات المعتمدة الموضحة بالباب الرابع ويستوفي خلالها المطلوب منة في كتيب متابعة الأنشطة ولا يسمح له بدخول الإمتحان قبل إستيفاء ثلاثة أرباع المطلوب منة في كل جزء من البرنامج .

المادة (12) : مدة الدراسة في الدبلوم والماجستير الجزء الأول فصل دراسي واحد يجتاز بعدها الطالب إمتحاناً ولا يشترط النجاح فيه بالكامل للإنتقال للدراسة في الجزء الثاني. والجزء الثاني يتطلب تفرغ الطالب للتدريب لمدة فصلين دراسيين بأحد المستشفيات أو المراكز المعتمدة من الكلية.

مادة (13) : يقوم الدارس لدرجة الماجستير بتسجيل موضوع الرسالة على شكل بحث نظري أو عملي بعد إستيفاء فصل دراسي واحد على الأقل ويجوز أن يناقش رسالته بعد ستة شهور من التسجيل على الأقل على أن يكون قد نجح في مقررات الجزء الأول بالكامل وقبل دخول إمتحان الجزء الثاني ولا يخصص لها درجات 0

مادة (14) : يقوم دارس الماجستير بإستيفاء متطلبات الجامعة قبل تسجيل الرسالة ومتطلبات الكلية قبل دخول إمتحان الجزء الثاني. ومتطلبات الجامعة هي الحصول على شهادة التوفيل في اللغة الإنجليزية بمجموع (450 درجة على الأقل) ومتطلبات الكلية هي حضور دورات معتمدة من لجنة الدراسات العليا بالكلية في مجال مناهج البحث العلمي والإحصاء الطبي أو بإجتياز إختبارات خاصة تحددها اللجنة.

مادة (15): يجوز للحاصلين على درجة الدبلوم إستكمال درجة الماجستير بتسجيل رسالة الماجستير خلال أربع سنوات من الحصول على درجة الدبلوم ويحصل على الدرجة بعد إستيفاء متطلبات الجامعة والكلية ومناقشة الرسالة بنجاح.

مادة (16): الساعات المعتمدة لدراسة الدبلوم والماجستير ثلاثون ساعة معتمدة على الأقل يخصص منها ست ساعات لكتيب متابعة الأنشطة وتشمل ست ساعات على الأقل للجزء الأول وثمانية عشرة ساعة على الأقل للجزء الثاني ويضاف إليها ست ساعات للرسالة في الماجستير.

مادة (22): مدة القيد لدرجة الدبلوم العالي أربع سنوات ودبلوم الزمالة سبع سنوات وللماجستير أربع سنوات.

مادة (24): مجموع درجات الامتحان النهائي للدبلوم العالي والماجستير 1200 درجة منها 300 درجة للجزء الأول. ويضاف اليها المعدل الفصلي التراكمي بما يوازي 300 درجة للدبلوم العالي والماجستير.

مادة (25): يعقد إمتحان الدور الأول في أكتوبر ونوفمبر من كل عام ويعقد إمتحان الدور الثاني في أبريل ومايو من كل عام.

مادة (26): يكون النجاح في كل مادة من الدبلوم العالي والماجستير بعد الحصول على 60% من الدرجة الكلية لكل لجان المادة مجتمعة على ان لا تقل درجة التحريري عن 50 % .

مادة (29): في حالة إستنفاد مدة القيد يمكن لطالب الدراسات العليا إعادة التسجيل مرة أخرى ولا يعتد بالنجاح في الجزء الأول أو الرسالة ويجب إعادتها.

Assessment Schedule and Weighing of Assessments

Item	Mark			Points	GPA score	حالة الطالب Student state
	During semester	End of semester	Total			
First semester (If present)	100	300	400			
Second semester	100		100			
Third semester	100		100			
Fourth semester Final exam	Written	900	900			
	Oral					
	Practical /Clinical					
Total	300*	1200	1500			

All course specifications should be included as appendices

*During semester marks on lectures attendance and presentations.

Preliminary examination will be held one month before final examination.

ملحوظة: تعادل درجات الطالب طبقاً للنقاط على الوجه التالي:

A	نقاط	4	:	90 % فأكثر	1 -
A ⁻	نقاط	3.67	:	من 85% حتى أقل من 90 %	2 -
B ⁺	نقاط	3.33	:	من 80% حتى أقل من 85 %	3 -
B	نقاط	3.00	:	من 75% حتى أقل من 80 %	4 -
B ⁻	نقاط	2.67	:	من 70% حتى أقل من 75 %	5 -
C ⁺	نقاط	2.33	:	من 65% حتى أقل من 70 %	6 -
C	نقاط	2.00	:	من 62% حتى أقل من 65 %	7 -
C ⁻	نقاط	1.67	:	من 60% حتى أقل من 62 %	8 -
F	نقاط	صفر	:	أقل من 60%	9 -

مجموع درجات الامتحان النهائي للدبلوم العالي والماجستير 1200 درجة منها 300 درجة للجزء الأول ومجموع درجات الامتحان النهائي للدكتوراه 1500 درجة منها 300 درجة للجزء الأول إن وجد. ويضاف إليها المعدل الفصلي التراكمي بما يوازي 300 درجة للدبلوم العالي والماجستير و400 درجة للدكتوراه . ويتم حساب المعدل الفصلي (GPA) على أساس مجموع حاصل ضرب نقاط كل مقرر مضروباً في عدد ساعاته المعتمدة مقسوماً على الساعات المعتمدة للمقررات التي درسها الطالب في الفصل الدراسي. كما يتم حساب المعدل التراكمي للطالب (CGPA) على أساس مجموع حاصل ضرب النقاط التي حصل عليها الطالب في كل مقرر مضروباً في عدد ساعاته المعتمدة مقسوماً على مجموع الساعات المعتمدة الكلية. في حالة الرسوب في مادة أو مجموعة من المقررات في الدبلوم أو الماجستير أو الدكتوراه يتم إعادة في المادة أو المجموعة فقط. ويتم حساب التقدير الفعلي الذي يحصل عليه في أول إعادة فقط أما إذا تكرر رسوبه فيحسب له عند النجاح تقدير 60% فقط (أي 1.67 نقاط أي C⁻).

Physics course specification

University Ain Shams

Faculty Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Major element

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course :

Clinical Oncology and Nuclear Medicine Department

Academic year / Level:

Master- 1st semester

Date of specification approval:

A-Basic Information

Title: Physics course

Code: ON6001

Credit Hours: 1.5

Lecture: 2/week

Total: 18 hours

Practical: 1/week

Total: 9 hours

Coordinator: Assist. Prof Amin Elsayed

B – Professional Information

1- Course Aims:

The overall aim of this course is to provide the candidate with:

- a) knowledge and training in radiation oncology physics and radiation protection .
- b) Competency associated with the practice of medical physics essential for radiation oncologist .

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to recognize and identify basic knowledge:

a1- In basic science of radiation physics including:

- Atomic and nuclear structure
- Radioactive decay
- Properties of particle and electromagnetic radiation
- Radioisotopes

a2- Radiation physics applied in radiation therapy(RT)

- X-ray tube
- Linear accelerator
- Specialized collimating systems
- Cobalt and kilovoltage units
- Brachytherapy systems
- Cyclotron
- Microtron

a3- Identify principles of radioprotection

- General philosophy, ALARA
- Stochastic and deterministic effects
- Risk of induction of secondary tumors
- Radiation weighting factor
- Equivalent dose-tissue weighting factor
- Dose limits for occupational and public exposure
- What is evidence based in radioprotection in radiation protection

a4- Select methods of measurement of ionizing radiation.

- a5- Define interactions of ionizing radiation with matter.
- a6- Identify quality of x-ray beams.
- a7- Recognize and define measurement of absorbed dose.
- a8- Identify dose distribution and scatter analysis.
- a9- Describe physics of electron beam therapy.
- a10- Identify treatment planning fundamentals.

b- Intellectual skills

By the end of the course the candidate will be able to:

- b1 – Make appropriate decisions as regard radiation protection.
- b2 – Select best radiotherapy machine and appropriate energy for patients’ planning and identify rationale for this selection.
- b3- Compare absorbed dose distributions.

c- Professional skills

By the end of the course the candidate will be able to:

- c1 – Incorporate dosimetry, radiation safety , quality assurance into daily clinical practice.
- c2 – Demonstrate competency in selection of appropriate radiotherapy machine for treatment.
- c3 – Select best absorbed dose distributions.

d- General and transferable skills

By the end of the course the candidate will be able to:

- d1 – Demonstrate interpersonal and communication skills that result in effective information exchange and teaming professional associates.
- d2- Use effective listening skills, elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- d3- Work effectively with others as a member or leader of a health care team or other professional group.
- d4 – Use computer effectively

3- Course content:

Topics	No of hours		
	L	C/P	SDL
STRUCTURE OF MATTER	1.5		
The Atom			
The Nucleus			
Distribution of Orbital			

Electrons			
Atomic Energy Levels			
Nuclear Forces			
Particle Radiation			
Electromagnetic Radiation			
NUCLEAR TRANSFORMATIONS	1.5		
Radioactivity			
Radioactive Series			
Radioactive Equilibrium			
Modes of Radioactive Decay			
Activation of Nuclides			
Nuclear Reactors			
PRODUCTION OF X-RAYS	1.5		
The X-Ray Tube			
Basic X-Ray Circuit			
Voltage Rectification			
Physics of X-Ray Production			
X-Ray Energy Spectra			
Operating Characteristics			
CLINICAL RADIATION GENERATORS	2		
Kilovoltage Units			
Linear Accelerator			
Betatron			
Microtron			
Cyclotron			
Machines Using Radionuclides			
Heavy Particle Beams			
INTERACTIONS OF	1.5		

IONIZING RADIATION with matter			
Ionization			
Interactions of Photons with Matter			
Coherent Scattering			
Relative Importance of Various Types of Interactions			
MEASUREMENT OF IONIZING RADIATION	1.5		
Introduction			
The Roentgen			
Free-Air Ionization Chamber			
Thimble Chambers			
Practical Thimble Chambers			
QUALITY OF X-RAY BEAMS	0.5		
Half Value Layer			
Filters			
Measurement of Beam Quality Parameters			
Measurement of Megavoltage Beam Energy			
Measurement of Energy Spectrum			
MEASUREMENT OF ABSORBED DOSE	2		
Radiation Absorbed Dose			
Absorbed Dose			
Calculation of Absorbed Dose from Exposure			
The Bragg-Gray Cavity Theory			

Calibration Protocol for Megavoltage Beams			
Chamber as a Bragg-Gray Cavity			
Transfer of Absorbed Dose from One Medium to Another			
Exposure from Radioactive Sources			
Measurement of Absorbed Dose			
DOSE DISTRIBUTION AND SCATTER ANALYSIS	1.5		
Phantoms			
Depth Dose Distribution			
Percentage Depth Dose			
Tissue-Air Ratio			
Scatter-Air Ratio			
TREATMENT PLANNING: FUNDAMENTALS	1	9	
Dose Calculation Parameters			
Physics of ELECTRON BEAM THERAPY	0.5		
Electron Interactions			
Energy Specification and Measurement			
Determination of Absorbed Dose			
Characteristics of Clinical Electron Beams			
Physics of BRACHYTHERAPY	0.5		
Radioactive Sources			
RADIATION PROTECTION	2.5		

Principles of radiation protections			
Dose Equivalent			
Effective Dose Equivalent			
Background Radiation			
Low-Level Radiation Effects			
Effective Dose Equivalent Limits			
Structural Shielding Design			
Protection against Radiation from Brachytherapy Sources			
Radiation Protection Surveys			
Personnel Monitoring			

L: Lecture, P: Practical, SDL: Self directed learning

4 – Student Assessment Methods

- 4.1 written examination to assess depth of knowledge (all MCQ)
- 4.2 Practical exam to assess practical and professional skills
- 4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 written exam	45
4.2 Practical exam	22
4.3 Oral exam	8
Total	75

5 – List of References

- 5.1- Course Notes (paper and / or electronic)
 - Notes Electronic Ass.Prof Amin El Sayed
- 5.2- Essential Books (Text Books)
 - The Physics of Radiation Therapy, 3rd edition, F.Khan
- 5.3- Recommended Books
 - Radiation Oncology Physics: A handbook for teachers and students. E.B. Podgorfak. 2005
- 5.4- Periodicals, Web Sites, etc

- <http://rtphys.net>
- RT_Phys.page

Radiobiology course specification

University Ain Shams **Faculty** Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Major element

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course:

Clinical Oncology and Nuclear Medicine Department

Academic year / Level:

Master- 1st semester

Date of specification approval:

A-Basic Information

Title: Radiobiology course

Code:ON6002

Credit Hours: 1.5

Lectures: 1.5/week

Total: 18 hours

Practical: 1/week

Total: 9 hours

Coordinator: Prof. Atef Youssef

B – Professional Information

1- Course Aims :

The overall aim of this course is to provide candidates with in depth knowledge in classical and molecular effects of ionizing radiation, radiation effects on normal and neoplastic tissues.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

- a1 – Identify interaction of radiation on molecular level.
- a2 – Describe the principles of cellular effects, mechanisms of cell death
- a3 – Recognize and define the mechanism of repair of radiation damage.
- a4 – Recognize and define cell survival curves.
- a5 – Describe response of different normal tissue systems, different tumors, and embryo to radiation.
- a6 – Recognize and describe effects of oxygen, sensitizers and protectors
- a7 – Identify the principles of time-dose-fractionation, LET, radiation modalities

- a8 – Describe acute and late normal tissue reactions.
- a9 – Identify dose response curve.
- a10 – Recognize and define the cell population kinetics.
- a11 – Recognize and discuss the radiobiological basis of brachytherapy.
- a12 - Identify radiobiological bases of radiation hazards.
- a13- Define different mathematical methods in radiobiology and their application.

b- Intellectual skills

By the end of the course the candidate will be able to:

- b1 – Assess the effect of radiation on different body organs
- b2 –Select the appropriate time-dose-fractionation, LET, radiation modalities
- b3 –Differentiate between acute and late normal tissue reactions
- b4 –Differentiate between different tumor responses
- b5 –Use mathematical models in daily practice

c- Professional skills

By the end of the course the candidate will be able to:

- c1- Integrate radiobiology principles in clinical practice.
- c2- Be competent in use of mathematical models in radiobiology and their applications
- c2- Utilize the difference between acute and late normal tissue reactions in order to plan the best approach for the management of different malignancies

d- General and transferable skills

By the end of the course the candidate will be able to:

- d1 – Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates.
- d2 – Create and sustain a therapeutic and ethically sound relationship with patients
- d3- Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- d4- Work effectively with others as a member or leader of a health care team or other professional group.

3- Course content:

Topics	No. of hours		
	L	C/P	SDL
General Radiobiology			
1. Physics & chemistry of radiation absorption	1		
2. Evolution of radiation damage & stochastic and non-stochastic effects	1		
3. Cell survival curve	1	1	
4. Recovery from radiation damage	1		
5. Fractionation	1.5	1	
6. Brachytherapy	0.5		
7. Response of tissues to radiation (normal and malignant)		5	
8. Total body irradiation	1		
9. Cell population kinetics, Tumor growth, dose response curve & tumor control	2		
10. Radiation modifiers & Radiation hazards	1		
II- Systemic Radiobiology			
1. Skin & Mucous membrane and bone	2		
2. GIT, Heart, and Kidneys	2		
3. Nervous system and Genital system	2		
4. Immune system and Bone marrow	1		
III- Mathematical models in radiobiology and their applications	1	2	
IV- Effect of radiation on embryo	1		

L: Lecture, P: Practical, SDL: Self directed learning

4 – Student Assessment Methods

- 4.1 written examination to assess depth of knowledge (50% MCQ and 50% short essay or problem solving)
- 4.2 Practical examination to assess practical skills
- 4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 Written examination	45
4.2 Practical examination	22
4.3 Oral examination	8
Total	75

5 – List of References

- 5.1- Course Notes (paper and / or electronic)
 - Handouts (paper) by Prof Atef Yousef
- 5.2- Essential Books (Text Books)
 - Radiobiology for the Radiologist, E.Hall
- 5.3- Recommended Books
 - Basic clinical radiobiology. Michael Joiner and Albert van der Kogel. 4th edition. 2009
- 5.4- Periodicals, Web Sites, etc
 - International journal of Radiation Oncology.Biology. Physics
 - International journal of Radiation Biology

Medical Statistics course specification

University Ain Shams **Faculty** Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Minor element

Medical Statistics

Department offering the program

Clinical Oncology and Nuclear Medicine Department

Department offering the course

Community, Environmental and Occupational Medicine Department

Academic year / Level

Master- 1st semester

Date of specification approval

A-Basic Information

Title: Medical statistics course

Code:ON6003

Credit Hours: 0.5

Lecture: 1/week

Total: 4 hours

Practical: 2/week Total: 7 hours

Coordinator: Community, Environmental and Occupational Medicine Department.

B – Professional Information

1- Course Aims :

To enable the candidate to plan, conduct, analyze and interpret the results of a research in the field of oncology. This course provides knowledge in the application of statistical ideas and methodology to medical research.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 – Define medical statistics and identify uses and importance of medical statistics in medical research

a2 – Define:

Types of samples .

Descriptive measures.

Basic rules of probability

Types of studies.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1 – Interpret correctly the results of statistical analyses and critically evaluate the use of statistics in the medical literature.

b2 – Integrate and evaluate information from a variety of sources.

c- Professional skills

By the end of the course the candidate will be able to:

c1- Select appropriate study designs to address questions of medical relevance

c2 – Select and apply appropriate statistical methods for analyzing data typically encountered in medical applications.

d- General and transferable skills

By the end of the course the candidate will be able to:

d1 – Work effectively in a group from different backgrounds.

d2 – Respect the role of staff and co-staff members regardless of degree or occupation.

3- Course content:

Topics	No. of hours			
	L	T	P	SDL
1.Types of samples	1		7	
2.Descriptive measures	1			

3. Basic rules of probability	1		
4. Types of studies	1		

L: Lecture, P: Practical , SDL: self directed learning

4 – Student Assessment Methods

4.1 written examination to assess depth of knowledge (whether MCQ, short essay questions, or problem solving)

4.2 Practical examination to assess practical and professional skills

4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 Written examination 15

4.2 Practical examination 8

4.3 Oral examination 2

Total 25

5 – List of References

5.1- Course Notes (paper and / or electronic)

- Student Notes on Medical Statistics and Research Methods. Prof. Mohsen Abdel Hamid and Dr Moustafa El Houssinie. Department of Community, Environmental and Occupational Medicine.

5.2- Essential Books (Text Books)

-Statistics in Clinical Practice. avid Coggon. BMJ Books. 2nd edition 2003

5.3- Recommended Books

Handbook of Epidemiology. Springer 2005

5.4- Periodicals, Web Sites, etc

- www.brettscaife.net/statistics/introstat/
- onlinestatbook.com/rvls/
- [www. Epidemiolog.net](http://www.Epidemiolog.net)
- <http://www.shef.ac.uk/scharr/spss/>

Nuclear Medicine course specifications

University Ain Shams

Faculty Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs

Major element

Department offering the program

Clinical Oncology and Nuclear Medicine Department

Department offering the course

Clinical Oncology and Nuclear Medicine Department & Diagnostic Radiology Department

Academic year / Level

Master- 1st semester

Date of specification approval

A-Basic Information

Course: Nuclear Medicine course

Code:ON6004

Credit Hours: 1.5

Lecture:1/week

Total: 7.5 hours

Practical: 2/week

Total: 30 hours

Coordinator : Clinical Oncology and Nuclear Medicine Department: Prof . Manal Meawad and Diagnostic Radiology Department: Prof Hala Abou Senna

B – Professional Information

1- Course Aims :

- a) Educate and train candidates to be proficient in certain areas of clinical nuclear medicine and perform appropriate nuclear medicine procedures.
- b) Train candidates to be able to interpret the normal scan and be capable of assuming responsibility for patient care.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

- a1- Identify patient information relevant to the requested test.
- a2- Understand and define principles of relevant basic sciences and radiopharmaceuticals used in nuclear imaging.
- a3- Identify the indications, contraindications, complications and limitations of specific nuclear medicine imaging procedures and identify normal scans.
- a4- Identify radiation safety rules and regulations.
- a5- Demonstrate knowledge and define importance of ethical approval and patient's consent for clinical research and treatment.
- a6- Describe radiation detection and instrumentation.

b- Intellectual skills

By the end of the course the candidate will be able to:

- b1- Select appropriate nuclear medicine procedures based on the referring physician's request and the patient's history. This involves selection of the appropriate radiopharmaceutical, dose, imaging technique and image presentation.
- b2-Review of image quality of normal scans.
- b3- Interpret the results of these procedures.
- b4-Correlate this information with other diagnostic studies.
- b5- Dictate reports and communicate results promptly and appropriately

c- Professional skills

By the end of the course the candidate will be able to:

c1-Participate in and personally perform a broad range of common clinical nuclear medicine procedures

c2- Use information technology to optimize learning.

c3- Follow scientific progress in nuclear medicine, and learn to incorporate it effectively for modifying and improving diagnostic procedures

d- General and transferable skills

By the end of the course the candidate will be able to:

d1 –Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families.

d2-Communicate effectively with physicians and other health professionals,

d3- Work effectively as a member of a health care team or other professional group.

d4-Demonstrate skills in performing patient consent in clinical research and for treatment.

3- Course content:

Topics	No. of hours		
	L	C/P	SDL
Basic physics in Nuclear Medicine and safety	1		
Radiation detection/instrumentation/ Radiopharmaceuticals	1		Journal club
Production of nuclides/ Radionuclide generator	1		
Basic principles in nuclear medicine imaging			
Genitourinary system/ Hepatosplenic Imaging	1		
Endocrine system/ Pulmonary system	1		
Central nervous system/ Gastrointestinal imaging	1		
Skeletal / Cardiovascular system	1.5		
		30 hours	

L: Lecture , C/P: Clinical or Practical and SDL: Self directed learning

4 – Student Assessment Methods

4.1 written examination to assess depth of knowledge (50% MCQ and 50% problem solving or short essay)

4.2 Practical examination to assess practical and professional skills

4.3 oral examination to assess General and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 written exam	45
4.2 Clinical exam	23
4.3 Oral exam	7
Total	75

5 – List of References

5.1- Course Notes (paper and / or electronic)

-Handouts

5.2- Essential Books (Text Books)

-Essentials of Nuclear Medicine imaging. 5th Ed. Saunders ((W.B.) Co Ltd, Mettler F A, Guiberteau M J, 2005

5.3- Recommended Books

-Physics and Radiobiology of Nuclear Medicine. 3rd Ed. Springer Verlag, NY, Saha G, 2006

-Practical Nuclear Medicine. 3rd Ed. Springer, Sharp PF, Gemmell HG, Murray AD, 2005

-Nuclear Medicine, Leslie and Greenberg, Landes Bioscience, 2003

5.4- Periodicals, Web Sites, etc

- The Journal of Nuclear Medicine.

- European Journal of Nuclear Medicine and Molecular Imaging.

- Clinical Nuclear Medicine Journal.

Pathology course specifications

University Ain Shams

Faculty Medicine.

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Minor element

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course:

Pathology Department

Academic year / Level

Master-1st semester

Date of specification approval

A- Basic Information

Course: Pathology course

Code: ON6005

Credit Hours: 1

Lectures: 1/week **Total:** 12 hours

Practical: 1/week **Total:** 6 hours

Coordinator: Pathology Department, Prof Ali Sharaby, Prof. Mousa Shahin, Prof. Manal Mahdy and A.Prof. Manal Salman

B - Professional Information

1- Course Aims:

Pathology is the bridge between the basic science and clinical medicine including radio-therapy. The main aim of Pathology course is to provide the candidate with adequate, recognizable and applicable knowledge and skills for malignant and specific non malignant diseases affecting body organs and system. It helps the candidate to understand the causes (aetiology), the mechanisms of its development (pathogenesis) and the associated alterations of structure (morphologic changes) and function (clinical manifestations and complications) to be able to determine the most likely diagnosis of the disease and management of the patient when provided with the clinical history, the anatomical lesions, and the laboratory data.

2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

By the end of the course the candidate will be able to:

- a.1- Recognize and define the basic pathologic processes that disturb the structure and function of the body including cell injury, tissue response to injury (inflammation, healing and repair), haemodynamic disturbances, neoplasia, infections and parasitic diseases.
- a.2- List the causes of common diseases affecting organs or systems.
- a.3- Explain the pathogenesis of common diseases affecting organs or systems
- a.4- Recognize and describe the basic pathologic features (morphologic alterations) including the gross and microscopic pictures of various common diseases affecting organs and systems.
- a.5- Describe how the pathological processes affect the structure and function of the organ systems of the human body
- a.6. Identify the functional consequences and clinical manifestations of common diseases affecting specific organs or systems.
- a.7-Explain the signs and symptoms of disease based on its pathogenesis, thereby demonstrate clinical reasoning.
- a.8- Interpret and identify the complications of common diseases.
- a.9- Describe the effect of environmental factors on causation and geographical variation of disease.

a.10- Recognize and be fully familiar with the terminology used in the classification, investigation and description of disease, enabling effective communication with professional colleagues and patients.

b-Intellectual Skills

By the end of the course the candidate will be able to:

- b.1- Correlate the pathologic features of the disease with its clinical presentation, laboratory investigations, radiological findings and complications.
- b.2- Develop skills of observation, interpretation, and integration needed to analyze basic clinical and pathologic data and to diagnose human disease.

c- Professional and Practical Skills

By the end of the course the candidate will be able to:

- c.1- Recognize and interpret the important pathologic lesions in a pathology report that can provide reliable basis (sound foundation) for rational clinical care and therapy.
- c.2- Select appropriate method of investigation for examination needed to reach a correct diagnosis.

d- General and Transferable Skills

By the end of the course the candidate will be able to:

- d.1-Use database to collect material needed for research.
- d.2-Gather and organize material from various sources (including library, electronic and online resources).
- d.3- Present a research assignment orally and deliver it in both written and electronic forms.
- d.4- Ensure that request form and specimen identification is accurate and identify and resolve any errors or discordance.
- d.5- Communicate with pathologists promptly and accurately.
- d.6- Understand the importance of continuing professional development.
- d.7- Demonstrate knowledge of the importance of ethical approval and patient consent for clinical research.
- d.8- Work cooperatively and show respect for others opinions.

3- Course content:

Topics	No. of hours		
	L	C/P	SDL
I- General Pathology			
- Cell Injury (necrosis and apoptosis)	1	6	

<ul style="list-style-type: none"> - Pathological Calcification - Tissue Repair and Healing - Disorders of Cellular Growth (hyperplasia, metaplasia and dysplasia) 		hours	
2. Neoplasia: Tumor nomenclature and classification, histopathologic criteria of malignancy, methods of spread of malignant tumors, biology of neoplasia (carcinogenesis, cytogenetic abnormalities in human neoplasms, chemical carcinogenesis, virus implication in human neoplasm, role of irradiation), tumor host interaction (neoplastic and paraneoplastic syndrome, tumor immunology), and diagnosis of neoplasia.	1		
II- Pathology of cancer of different neoplastic diseases in:			
1- Tumors of Kidneys and Urinary Bladder <ul style="list-style-type: none"> - Tumors of kidney - Tumors of urinary bladder 	1		
2- Tumors of Respiratory System <ul style="list-style-type: none"> - Lung and Pleural Tumors - Laryngeal Tumors 	1		
3- Tumors of Female Genital System	0.5		
4- Tumors of Male Genital System	0.5		
5- Tumors of the Breast	1		
6- Tumors of Gastrointestinal Tract <ul style="list-style-type: none"> - Oral Tumors - Oesophagus and Pharyngeal Tumors - Stomach Tumors - Small Intestine Tumors - Large Intestine Tumors - Appendix Tumors 	1		
7- Tumors of Liver, Gall Bladder & Pancreas <ul style="list-style-type: none"> - Tumors of Liver - Tumors of Gall Bladder - Tumors of Pancreas 	0.5		
8- Tumors of Endocrine System <ul style="list-style-type: none"> - Tumors of Thyroid Gland - Tumors of Parathyroid Gland - Tumors of Adrenal gland (cortex and 	0.5		

medulla)			
9- Tumors of bones and joints	0.5		
10- Soft tissue Tumor	0.5		
11- Tumors of the skin	0.5		
12- Tumors of head and neck	0.5		
13- Ocular and orbital tumors	0.5		
14- Tumors of Lymphatic System, Spleen and Bone marrow - Tumours of Lymphoid Tissue Lymphomas and Thymoma Metastases	0.5		
15- Tumors of Blood - Leukemias	0.5		
16- Tumors of Nervous System - Central - Peripheral	0.5		

L: Lecture, P/C: Clinical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 **Written Exam:** whether short questions , essay questions , multiple choice questions or problem solving cases to assess the knowledge, understanding and intellectual skills.

4.2 Practical examination to assess practical and professional skills

4.3 Oral examination to assess knowledge and understanding, intellectual and communication skills.

Assessment Schedule and Weighing of Assessments

4.1 Written examination	30
4.2 Practical examination	15
4.3 Oral examination	5
Total	50

5 -- List of References

5.1- Course notes

- General and Systemic Pathology Notes written by staff members of Pathology Department

5.2- Essential books (text books):

- Basic Pathology: by Vinay Kumar, Ramzi S. Cotran and Stanley L. Robbins (2007), 8th edition
- Pathology Illustrated: by Peter S. MacFarlane, Robin Reid, and Robin Callander

- Colour Atlas of Histopathology: by R.C. Curran
- Gross pathology-A Colour Atlas: by R.C. Curran and E.L. Jones
- General and Systemic Pathology: by J.C.E.Underwood
- Lecture Notes on Pathology: by R.E.Cotton

5.3- Periodicals, Web sites, etc

<http://www.webpath>,

<http://www.pathguy>

<http://www.pathmax.com>,

<http://www.uwo.ca/pathol/resources.html>

Clinical Oncology Course specifications

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs

Major element

Department offering the program

Clinical Oncology and Nuclear Medicine Department

Department offering the course

Clinical Oncology and Nuclear Medicine department

Academic year / Level

Master – 2nd semester

Date of specification approval

A- Basic Information

Title: Clinical oncology course

Code: ON6006

Credit Hours: 4

Lecture: 2/week

Total: 27 hours

Clinical: 5/week

Total: 66 hours

Coordinator: Department of Clinical Oncology and Nuclear Medicine:

Dr Engy Elkholy

B – Professional Information

1- Course Aims :

- a) Provide an appropriate background covering the malignant process.
- b) Educate and train candidate to be skillful in practice of clinical oncology with comprehensive skills with use of radiation, chemotherapy and biologic therapy in treatment of cancer.
- c) Prepare candidate for independent and life long learning by encouraging self-directed study.
- d) Enable the development and application of appropriate professional attitudes, communications and problem solving skills.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

- a1- Recognize the principles of basic sciences essential to clinical oncology.
- a2- Identify the epidemiology, pathology, preventive and early detection and diagnosis of cancer.
- a3- Define patient information relevant to clinical oncology.
- a4- State the clinical manifestations and differential diagnosis of common oncology disorders with an emphasis on incidence of different manifestations and their relative importance in establishing diagnosis.
- a5- Recognize and describe indications for treatment with radiotherapy, chemotherapy, endocrine and biologic therapy and other forms of treatment of cancer in different sites.
- a6- Identify the indications, contraindications, complications and limitations of specific clinical oncology procedures.
- a7- Recognize and describe oncologic emergencies and their management.
- a8- Identify criteria for evaluation if response.
- a9- Describe supportive and palliative care.
- a10- Demonstrate knowledge and identify importance of ethical approval and patient's consent for clinical research and treatment, and basis and principles of quality in oncology practice.

b- Intellectual skills

By the end of the course the candidate will be able to:

- b1- Use the scientific method of problem solving, evidence – based decision making.
- b2- Analyze symptoms, signs and differential diagnosis for clinical problems related to clinical oncology.
- b3- Accurately order and interpret the results of the commonly diagnostic procedures.
- b4. Accurately stage the patient.
- b5. Construct and select an appropriate treatment plan in management of patients with malignancy and certain non malignant diseases

c- Professional skills

By the end of the course the candidate will be able to:

- c1- Demonstrate competency in history taking, physical examination and diagnostic and therapeutic procedures and communicate results promptly and appropriately.
- c2- Demonstrate competency in prescription of appropriate chemotherapy, and radiotherapy in malignant disorders.
- c3- Initiate appropriate initial management for oncologic emergencies.

- c4- Incorporate scientific programs in clinical oncology in clinical practice for modifying and improving diagnostic and therapeutic procedures in daily patient care.
- c5- Take up research projects in clinical or basic science.

d- General and transferable skills.

By the end of the course the candidate will be able to:

- d1- Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families.
- d2- Be able to work in clinical teams.
- d3- Communicate effectively with physicians and other health professionals
- d4- Maintain comprehensive, timely and legible medical records.
- d5- Act in a consultative role to other physicians and health professionals.
- d6- Demonstrate skills in performing patient consent in clinical research and for treatment.

3- Course content:

Topics	No. of hours		
	L	C/P	SDL
Molecular biology of cancer	2		
Principles of cancer prevention & cancer screening	1		
Management of different diseases		66 hours	Conferences, journal club CME
Breast/Lung/pleural/mediastinum	3		
GIT	3		
Genitourinary	3		
Gynecology	2		
Head and neck	2		
Nervous system	2		
Endocrine	1		
Pediatric	2		
Hematologic	2		
Sarcomas	1.5		
Metastatic/ Miscellaneous	0.5		
Paraneoplastic syndromes/	1		

supportive and palliative care			
Oncologic emergencies	0.5		
Medical records, informed consent and quality	0.5		

L: Lecture, T: Tutorial, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

- 4.1 written examination to assess depth of knowledge (40% MCQ, 60% short essay or problem solving)
- 4.2 Clinical examination to assess practical and professional skills
- 4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 written exam	120
4.2 Clinical exam	60
4.3 Oral exam	20
Total	200

5 -- List of References

- 5.1- Course Notes (paper and / or electronic)
 - Handouts of all staff (Paper and/or electronic)
- 5.2- Essential Books (Text Books)
 - Devita, Hellman & Rosenberg's Cancer: Principles & Practice of Oncology, 8th Edition
- 5.3- Recommended Books
 - Manual of clinical oncology. Cascito DA&Territo MC (editors), sixth edition
- 5.4- Periodicals, Web Sites, etc
 - <http://www.nccn.org>
 - <http://www.esmo.org>
 - <http://www.asco.org>
 - <http://www.cochrane.org>
 - <http://cme.alphaedpress.org>
 - <http://www.cmelist.com/oncology.htm>
 - <http://www.medscape.com/oncology>
 - <http://www.cancernetwork.com>
 - <http://www.cancercare.on.ca>
 - Journal of clinical oncology:<http://jco.ascopubs.org>
 - Annals of oncology:<http://annonc.oxfordjournals.org>
 - The cancer journal:<http://journal.lww.com/journalppo/pages/default.aspx>

Chemotherapy course specifications

University: Ain Shams **Faculty:** Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Major element

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course:

Clinical Oncology and Nuclear Medicine department

Academic year / Level:

Master 2nd and 3rd semesters

Date of specification approval: 2013

A- Basic Information

Title: Chemotherapy course

Code: ON6007

Credit Hours: 4

Lecture: 1/week

Total: 18 hours

Practical: 6/week

Total: 84 hours

Coordinator :Department of Clinical Oncology and Nuclear Medicine:

Dr Ramy Ghaly

B - Professional Information

1- Course Aims:

The overall aim of this course is to educate and train candidates to acquire the knowledge, skills, clinical judgment and attitude essential for the independent practice of chemotherapy, hormonal therapy, immunotherapy and biologic therapy use in neoplastic disorders.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 - Identify chemotherapeutic drugs, biologic products, hormones, and growth factors and their mechanisms of action, pharmacokinetics, clinical indications and limitations, including their effects, toxicity, interactions, and limitations

a2 – Describe various chemotherapy protocols and combined modality therapy for neoplastic disorders.

a3- Recognize and describe the use of cytotoxic agents in heavily pre-treated patients and patients with significant co-morbidities.

a4- Identify basic principles of tumor immunology and the role of biologic response modifiers in the primary management and supportive care of cancer patients.

- a5- State the use of supportive therapy in cancer patients including anti-emetics , Granulocyte colony stimulating factors, and pain management.
- a6- Define the basis of high dose chemotherapy and principles of BMT.
- a7- Demonstrate knowledge of importance of ethical approval and patient's consent for clinical research and treatment.
- a8-Describe methods of assessing tumor response , describe methods of regional chemotherapy.

b- Intellectual skills

By the end of the course the candidate will be able to:

- b1- Select and prescribe common cytotoxic regimens and modify schedules for patients based on individual needs and judge when to continue or stop chemotherapy.
- b2- Select and prescribe growth factors and other supportive drugs
- b3- Select and prescribe different hormonal and biologic therapies
- b4- Predict different toxicities of chemotherapy, hormonal therapy, and biologic therapy and select best management.
- b5-Assess toxicity of chemotherapy according to CTC grading system

c- Professional skills

By the end of the course the candidate will be able to:

- c1- Appraise scientific evidence and incorporate scientific progress in chemotherapy and biologic therapy effectively in clinical practice
- c2 – Demonstrate competency in the prescription and administration of chemotherapeutic, endocrine, biologic agents and other forms of therapeutic agents used in treatment of malignant diseases and other specific diseases
- c3- Participate in and personally perform and analyze a broad range of chemotherapy and biologic therapy procedures
- c4-Take up research projects either clinical or basic.

d- General and transferable skills

By the end of the course the candidate will be able to:

- d1 –Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and the public, across a broad range of socioeconomic and cultural backgrounds.
- d2- Communicate effectively with physicians, other health professionals, and health related agencies.
- d3- Work effectively as a member of a health care team or other professional groups.
- d4- Act in a consultative role to other physicians and health professionals
- d5- Maintain comprehensive, timely, and legible medical records.

d6- Demonstrate skills in performing patient's consent in clinical research and for treatment.

3- Course content:

Topics	No of hours		
	L	C/P	SDL
I-Cancer Chemotherapy:	9 hours	50 hours	Conferences Journal Club CME
1. Principles of cancer chemotherapy	1		
2. Classes of chemotherapeutic agents	1		
3. Pharmacokinetics & Pharmacodynamics	2		
4. Drug toxicity	1		
5. Drug resistance	1		
6. Drug (chemotherapy) interaction	1		
7. Basic principles of high dose therapy and BMT.	1		
8. Hormonal Therapy	1		
II-Cancer Biologic & Targeted Therapy	5 hours	20 hours	
1. Immune system and immune response	1		
2. Cellular immunotherapy	1		
3. Unspecific immunotherapy and immunomodulation	1		
4. Monoclonal Antibodies	1		
5. Anti-angiogenic Agents	1		
III- Supportive Therapy	4 hours	14	
1. Anti-emetics	1		
2. Granulocyte colony stimulating factors and management of NF	1		
3. Pain management in cancer	2		

patients			
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L: Lecture, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

- 4.1 written examination to assess depth of knowledge, whether MCQ, short essay or problem solving.
- 4.2 Clinical examination to assess practical and professional skills
- 4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 Written examination	120
4.2 Clinical examination	60
4.3 Oral examination	20
Total	200

5 - List of References

- 5.1- Course Notes (paper and / or electronic)
- 5.2- Essential Books (Text Books)
 - Devita, Hellman & Rosenberg's Cancer: Principles & Practice of Oncology, 9th Edition
 - Physician's cancer chemotherapy drug manual, Chu E and DeVita VT, 2012
- 5.3- Recommended Books
 - Cancer chemotherapy and biotherapy: Principles and practice, Chabner BA and Longo DL, 5th edition. 2011
 - Manual of clinical oncology: Casciato DA, 7th Edition, 2012
 - Handbook of cancer chemotherapy: Roland Skeel 8th eds. 2011
- 5.4- Periodicals, Web Sites, etc
 - <http://jco.ascopubs.org>
 - <http://www.jco.ascopubs.org>
 - <http://www.annonc.oxfordjournals.org>
 - <http://www.nccn.org>
 - <http://www.esmo.org>
 - <http://www.asco.org>
 - <http://www.drugs.com>
 - <http://cme.alphaamedpress.org>
 - <http://www.cmelist.com/oncology.htm>
 - <http://www.medscape.com/oncology>
 - <http://www.cancernetwork.com>
 - <http://www.cancercare.on.ca>

Nuclear Medicine course specifications

University: Ain Shams

Faculty: Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Major element

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course

Clinical Oncology and Nuclear Medicine Department & Diagnostic Radiology Department

Academic year / Level

Master 3rd semester

Date of specification approval:

A- Basic Information

Title: Nuclear Medicine course (second level)

Code: ON6008

Credit Hours: 3

Lecture: 1/week

Total: 15hours

Practical: 2/week

Total: 60hours

Coordinator: Clinical Oncology and Nuclear Medicine Department: Prof

Manal Meawad, Diagnostic Radiology Department: Prof. Hala Abou Senna

B - Professional Information

1- Course Aims:

The overall aim of this course is to:

- a) Educate and train candidates to be proficient in specific areas of clinical nuclear medicine in relation to disease status, plan and perform appropriate nuclear medicine procedures, interpret the test results, formulate a diagnosis and an appropriate differential diagnosis.
- b) Train candidates to be able to recommend radionuclide therapy, be capable of assuming responsibility for patient care, and follow up.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

- a1- Identify the indications, contraindications, complications and limitations of specific imaging and therapeutic nuclear medicine procedures in different diseases.
- a2- Select both diagnostic imaging and non-imaging nuclear medicine applications including therapeutic applications including the principles of immunology, preparation of radiolabeled antibodies and therapeutic uses of unsealed radiopharmaceuticals

- a3- Identify the fundamentals of PET imaging
- a4- Identify the of importance of ethical approval and patient's consent for clinical research and treatment.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Select appropriate nuclear medicine procedures or therapy based on the referring physician's request and the patient's history and clinical data. This involves selection of the appropriate radiopharmaceutical, dose, imaging technique, and image presentation.

b2-Review the image quality, defining the need for additional images and correlation with other imaging studies such as x-rays, CT, MRI, or ultrasound;

b3- Interpret the results of these procedures.

b4-Correlate this information with other diagnostic studies.

b5- Dictate reports and communicate results promptly and appropriately.

b6- Select the proper follow-up schedule for patients treated with radiopharmaceuticals.

c- Professional skills

By the end of the course the candidate will be able to:

c1- Participate in, personally perform and analyze a broad range of common clinical nuclear medicine procedures including dose calculation, patient identity verification, explanation of informed consent, counseling of patients and their families on radiation safety issues, and scheduling follow-up after therapy

c2- Develop technical proficiency in performing imaging studies

c3- Perform therapeutic administration of radiopharmaceuticals, to include patient selection and understanding and calculation of the administered dose.

c4- Follow scientific progress in nuclear medicine, and learn to incorporate it effectively for modifying and improving diagnostic and therapeutic procedures

c5 - Take up research projects in nuclear medicine

d- General and transferable skills

By the end of the course the candidate will be able to:

d1 –Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families.

d2-Communicate effectively with physicians and other health professionals and physisits.

d3- Work effectively as a member or leader of a health care team or other professional group.

d4- Act in a consultative role to other physicians and health professionals

d5- Maintain comprehensive, timely, and legible medical records.

d6- Demonstrate skills in performing patient's consent in clinical research and for treatment.

3- Course content:

Topics	No. of hours		
	L	C/P	SDL
Fundamental basics of PET scan	2	60 hours	
Genitourinary system Imaging	1		
Endocrine system	1		
Pulmonary system	1		
Central nervous system	1		
Gastrointestinal imaging	1		
Skeletal imaging	1		
Hepatosplenic imaging	1		
Cardiovascular system Imaging	1		
Lymphomas	1		
Therapy	3		
Imaging of Tumors	1		

L: Lecture, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written examination to assess depth of knowledge (50% MCQ and 50% short essay or problem solving questions)

4.2 Practical examination to assess practical and professional skills

4.3 oral examination to assess General and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 written exam	90
4.2 Clinical exam	45
4.3 Oral exam	15
Total	150

5 -- List of References

5.1- Course Notes (paper and / or electronic)

-Handouts

5.2- Essential Books (Text Books)

-Nuclear Medicine, Leslie and Greenberg, Landes Bioscience, 2003

-Nuclear Medicine Therapy, J. Eary, W. Brenner (Informa, 2007)

5.3- Recommended Books

- Physics and Radiobiology of Nuclear Medicine. 3rd Ed. Springer Verlag, NY, Saha G, 2006
- Essentials of Nuclear Medicine imaging. 5th Ed. Saunders ((W.B.) Co Ltd, Mettler F A, Guiberteau M J, 2005
- Practical Nuclear Medicine. 3rd Ed. Springer, Sharp PF, Gemmell HG, Murray AD, 2005
- Nuclear Medicine, Leslie and Greenberg, Landes Bioscience, 2003
- 5.4- Periodicals, Web Sites, etc
 - The Journal of Nuclear Medicine.
 - European Journal of Nuclear Medicine and Molecular Imaging.
 - Clinical Nuclear Medicine Journal.

Radiation technology course specifications

University Ain Shams **Faculty** Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Major element

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course:

Clinical Oncology and Nuclear Medicine department

Academic year / Level:

Master 3rd and 4th semesters

Date of specification approval:

A- Basic Information

Title: Radiation technology course

Code: ON6009

Credit Hours: 4

Lecture: 1/week

Total: 27hours

Practical: 2/week

Total: 66hours

Coordinator: Clinical Oncology and Nuclear Medicine department:

Assist. Prof Mohamed Sabry

B - Professional Information

1- Course Aims:

The overall aim of this course is to:

- a) Provide an appropriate background covering the fundamentals of treatment planning for external beam modalities and brachytherapy.

- b) Educate and train candidates to be skillful in practice of different modalities of radiation therapy to treat malignant disease and some non malignant disease .
- c) Prepares candidate for independent and life-long learning by encouraging self-directed study.
- d) Enable development and application of appropriate professional attitudes, communication and problem solving skills.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

- a1- Recognize and define the basic sciences of radiation technology.
- a2- Describe the use of external beam radiotherapy and brachytherapy in treatment of cancer and certain non malignant diseases.
- a3- Identify the indications for radiation and special therapeutic considerations unique to each site and stage of malignant diseases and certain non malignant diseases.
- a4- Identify standard radiation techniques, as well as the use of treatment aids and treatment planning to optimize the distribution of the radiation dose.
- a5- Describe the use of altered fractionation schemes.
- a6-. Recognize and describe the signs, symptoms, pathogenesis of radiotherapy complications and its management.
- a7-. Identify the new radiotherapeutic techniques and follow the scientific progress in radiotherapy.
- a8- Demonstrate knowledge and define importance of ethical approval and patient's consent for clinical research and treatment.

b- Intellectual skills

By the end of the course the candidate will be able to:

- b1-. Integrate radiation technology with other basic and clinical sciences concerning management of cancer.
- b2- Design an appropriate radiation treatment plan for patients with malignancies and special non malignant disease.
- b3-. Analyze clinical problems related to treatment planning.
- b4- Develop skills of follow up patient during radiotherapy.
- b5- Develop skills of management of radiation side effects with appropriate diagnostic, preventive and therapeutic interventions.

c- Professional skills

By the end of the course the candidate will be able to:

- c1- Participate in, personally perform and analyze different radiotherapeutic techniques in treatment of cancer.

- c2- Incorporate formative evaluation feedback into daily practice.
- c3- Develop technical proficiency in implementing radiotherapy with competency in use of simulator, target volume delineation for various organs, evaluation of treatment plans
- c4- Treat radiotherapy complications..
- c5- Take up research projects either clinical or basic.

d- General and transferable skills

By the end of the course the candidate will be able to:

- d1-. Develop the skill of working in a team.
- d2- Develop appropriate relationships with patient and family.
- d3- Act in a consultative role to other physicians and health professionals.
- d4- Communicate effectively with physicians, other health professionals.
- d5- Maintain comprehensive, timely and legible medical records.
- d6- Demonstrate skills in performing patient's consent in clinical research and for treatment.

3- Course content:

Topics	No. of hours		
	L	C/P	SDL
1.Dose distribution and scatter analysis	1	12 hours	Conferences, journal club
2.Treatment planning fundamentals	1		
3. Electron beam therapy	1		
4. Brachytherapy	1		
5. Radiotherapy simulation & Patient positioning and immobilization	1		
6. Basics of Three dimensional conformal radiotherapy & Basics of Intensity modulated radiotherapy	1		
7. Linac radiosurgery & Treatment plan evaluation	1	54 hours	Conferences Journal club
8. Imaging in oncology	1		
9. Cancers of the GIT	2		
10. Gynecological malignancies	2		

11. Cancers of the genitourinary tract	2		CME
12. Hematologic malignancies	1		
13. Cancers of the head&neck	3		
15. Skin cancer	1		
16. Breast cancer	1		
16. Cancers of the CNS	2		
17. Pediatric malignancies	2		
18. Cancers of the lung and mediastinum	1		
19. Sarcomas	1		
20- Benign tumors	1		

L: Lecture, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written examination to assess depth of knowledge (50% MCQ and 50% short essay or problem solving questions)

4.2 Clinical examination to assess practical and professional skills

4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 Written examination 120

4.2 Clinical examination 60

4.3 Oral examination 20

Total 200

5 -- List of References

5.1- Course Notes (paper and / or electronic)

-Handouts and electronic presentations

5.2- Essential Books (Text Books)

-Perez and Brady's, Principle and Practice of Radiation Oncology,5th edition

-Gunderson & Tepper Clinical radiation oncology,2nd edition

-Radiotherapy for Head and Neck Cancers: Indications and Techniques,3rd edition.

5.3- Recommended Books

-Leibel&Phillips Textbook of radiation oncology,2nd edition

-Clinical Target Volumes in Conformal and Intensity Modulated Radiation Therapy: A clinical guide to cancer therapy. 2004

5.4- Periodicals, Web Sites, etc

- International journal of radiation Oncology Biology Physics

-Journal of clinical oncology
-<http://www.estro.org>
-<http://www.astro.org>
-<http://www.rtog.org>
-<http://cme.alphamedpress.org>
-<http://www.cmelist.com/oncology.htm>
-<http://www.medscape.com/oncology>
-<http://www.cancernetwork.com>
- <http://www.cancercare.on.ca>

Internal Medicine Course specifications

University Ain Shams **Faculty** Medicine

Program on which the course is given:

Master of science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Minor element .

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course :

General Internal Medicine Department

Academic year / Level :

Master 4th semester

Date of specification approval :

A- Basic Information

Title: Internal Medicine

Code:ON6010

Credit Hours: 1

Lectures: 1/week

Total: 5 hours

Clinical: 2/week

Total: 20 hours

Coordinator: Department of General Internal Medicine, Prof Hoda Gadallah

B - Professional Information

1- Course Aims:

- a) Identify the scientific principles underlying health and disease.
- b) Provide an appropriate background covering the common and important emergencies and diseases related to clinical oncology.
- c) Prepare candidate for independent and life-long learning by encouraging self-directed study.
- e) Enable the development and application of appropriate professional attitudes, communication and problem solving skills

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

- a1- Describe the etiology and mechanisms of specific diseases.
- a2- Recognize causes of specific diseases and their associated risk factors
- a3- Describe the clinical symptoms and signs of the common and most important diseases related to clinical oncology.
- a4- Define problems related to clinical oncology and reach a differential diagnosis.
- a5- Describe different forms of appropriate therapy for specific diseases.
- a6- Demonstrate an understanding of mode of action of frequently prescribed drugs and their known side effects.

b- Intellectual skills

By the end of the course the candidate will be able to:

- b1- Interpret the most important symptoms and signs of specific diseases.
- b2- Select appropriate investigations and interpret the results for specific diseases.
- b3- Formulate appropriate management plan for individual patients presenting with specific diseases.
- b4- Make decisions regarding the common clinical situations using appropriate problem solving skills.

c- Professional skills

By the end of the course the candidate will be able to:

- c1- Construct a proper history
- c2- Perform an adequate clinical examination for the patient and identify any abnormalities.
- c3- Interpret the patient data (history and examination) in an organized and informative manner

d- General and transferable skills

By the end of the course the candidate will be able to:

- d1 - Develop the skill of working in teams
- d2 - Develop appropriate relationships with patient and family
- d3- Communicate effectively with physicans, other health professionals

3- Course content:

Topics	No. of hours
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	L	C/P
Immunology	0.5	20 hours
Infection & Nutrition	0.5	
Cardiovascular System	0.5	
Respiratory System	0.5	
GIT & Hepatobiliary System	0.5	
Nephrology and acid base balance	0.5	
Endocrinology	0.5	
Neurology	0.5	
Rheumatology	0.5	
Geriatric & Skin	0.5	

L: Lecture, C/P: Clinical or Practical

4 - Student Assessment Methods

4.1 written examination to assess depth of knowledge (Whether MCQ, short essay , or problem solving questions)

4.2 Practical examination to assess practical and professional skills

4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 written exam	30
4.2 Clinical exam	15
4.3 Oral exam	5
Total	50

5 -- List of References

5.1- Course Notes (paper and / or electronic)

Clinical learning guide (electronic)

5.2- Essential Books (Text Books)

Davidson's textbook of medicine

Current textbook of medicine

Kumar textbook of medicine

5.3- Recommended Books

Cecil textbook of medicine

Harrison textbook of medicine

5.4- Periodicals, Web Sites, etc

<http://emedicine.medscape.com/>

<http://casesblog.blogspot.com/2006/08/whats-new-in-general-internal-medicine.html>

<http://www.e-meducation.org/links/internal-medicine/>

Surgery Course specifications

University Ain Shams

Faculty Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Minor element

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course:

General Surgery Department

Academic year / Level

Master 4th semester

Date of specification approval :

A- Basic Information

Title: Surgery course

Code: ON6011

Credit Hours: 1

Lecture: 1/week

Total: 10.5 hours

Practical: 1/week

Total: 9 hours

Coordinator : Surgery Department: Prof. Fateen Anouss

B - Professional Information

1- Course Aims:

The overall aim of this course is to provide candidates with education and training in basic and clinical sciences fundamental to surgery, including technological advances that relate to surgery and the care of patients with surgical diseases.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 – Describe indications and contraindications of different surgical modalities in oncology

a2 – Describe the role of surgery in the staging, cure, and palliation

a3 – Identify indications for organ preservation surgery

a4- Identify indications for sequencing of surgery with other treatment modalities and risks and benefits of surgery as a definitive treatment and as an adjunct to radiotherapy and/or anticancer agents

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Select an appropriate treatment plan for patients with malignancies

- b2 – Analyse clinical problems related to surgical oncology
- b3 – Determine or confirm the diagnosis
- b4 - Select best organ preservation surgery
- b5 - Select best sequencing of surgery with other treatment modalities and direction of the postoperative care;

c- Professional skills

By the end of the course the candidate will be able to:

- c1 - Incorporate practice based learning into daily patient care
- c2 - Demonstrate competency in the selecting sequencing of surgery with other treatment modalities

d- General and transferable skills

By the end of the course the candidate will be able to:

- d1 – Develop the skill of working in teams
- d2 – Develop appropriate relationships with patient and family
- d3- Communicate effectively with physicans, other health professionals

3- Course content:

Topics	No. of hours		
	L	C/P	SDL
Evaluation / D.D of swellings at different areas	1.5	9 hours	
Principles of cancer surgery	1		
Surgery in cancer prevention & in diagnosis	1		
Surgical treatment of primary tumors			
Breast	1		
Head and neck	1		
Thoracic	1		
GIT	1		
Genitourinary	1		
Musculoskeletal	1		
Neurosurgery	1		
Surgery for residual& metastatic diseases			
Surgery for palliation/ reconstruction& oncologic		1	

emergencies			
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L: Lecture, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written examination to assess depth of knowledge(Whether MCQ, short essay , or problem solving questions).

4.2 Clinical examination to assess practical and professional skills

4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 written exam 30

4.2 Clinical exam 15

4.3 Oral exam 5

Total 50

5 -- List of References

5.1- Course Notes (paper and / or electronic)

5.2- Essential Books (Text Books)

5.3- Recommended Books

-Textbook of Surgical Oncology,1st edition

-The M.D.Anderson Surgical Oncology Handbook, 4th edition

-Cancer: Principles & Practice of Oncology, 8th Edition Editors: DeVita, Vincent T.; Lawrence, Theodore S.; Rosenberg, Steven A.

5.4- Periodicals, Web Sites, etc

-International seminars in surgical oncology:<http://www.issoonline.com/>

Medical statistics course specifications

University Ain Shams **Faculty** Medicine

Programme on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

minor element of programs:

Medical Statistics (elective)

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course:

Community, Environmental and Occupational Medicine

Academic year / Level:

Master 4th semester

Date of specification approval

A- Basic Information

Title: Medical Statistics course (elective)

Code:E6009

Credit Hours: 1 (elective) **Lecture:** 1/week **Total:** 7.5 hours

Practical:1/week **Total:** 15 hours

Coordinator: Community, Environmental and Occupational Medicine Department,

B - Professional Information

1- Course Aims:

To enable the candidate to plan, conduct, analyze and interpret the results of a research in the field of oncology. This course introduces the application of statistical ideas and methodology to medical research.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 - Define medical statistics and identify uses and importance of medical statistics in medical research

a2 – Define:

Types of variables.

Descriptive statistics.

Presentation and summarization of data.

Measures of central tendency and scatter.

Principles of probability and probability distributions.

Concepts of inferential statistics: confidence interval and hypothesis testing.

Different tests of statistical significance.

Combining evidence from different studies and meta-analysis

Importance and methods of sampling

Different types of research methodology

Levels of evidence and quality of life tools

b- Intellectual skills

By the end of the course the candidate will be able to:

b1 - Interpret correctly the results of statistical analyses and critically evaluate the use of statistics in the medical literature.

b2 - Integrate and evaluate information from a variety of sources.

c- Professional skills

By the end of the course the candidate will be able to:

c1- Select appropriate study designs to address questions of medical relevance

c2 - Select and apply appropriate statistical methods for analyzing data typically encountered in medical applications.

d- General and transferable skills

- By the end of the course the candidate will be able to:
- d1 - Work effectively in a group from different backgrounds.
 - d2 - Respect the role of staff and co-staff members regardless of degree or occupation.
 - d3 - Learn independently with open-mindedness and critical enquiry.

3- Course content:

Topics	No. of hours		
	L	P	SDL
Types of samples	1 hour	15 hours	
Descriptive measures	1 hour		
Basic rule of probability	1 hour		
Survival Analysis	1 hour		
Interpretation of epidemiologic findings	1 hour		
Types of Studies	1 hour		
Levels of evidence and quality of life tools	1.5 hours		

L: Lecture, P: Practical and SDL: Self directed learning

4 - Student Assessment Methods

- 4.1 written examination to assess depth of knowledge
- 4.2 Practical examination to assess practical and professional skills
- 4.3 Oral examination to assess general and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 Written examination	30
4.2 Practical examination	15
4.3 Oral examination	5
Total	50

5 -- List of References

- 5.1- Course Notes (paper and / or electronic)
 - Student Notes on Medical Statistics and Research Methods. Prof. Mohsen Abdel Hamid and Dr Moustafa El Houssinie. Department of Community, Environmental and Occupational Medicine.
- 5.2- Essential Books (Text Books)

-Statistics in Clinical Practice. avid Coggon. BMJ Books. 2nd edition
2003

5.3- Recommended Books

Handbook of Epidemiology. Springer 2005

5.4- Periodicals, Web Sites, etc

- www.brettscaife.net/statistics/introstat/
- onlinestatbook.com/rvls/
- [www. Epidemiolog.net](http://www.Epidemiolog.net)
- <http://www.shef.ac.uk/scharr/spss/>

Nuclear Medicine Course specifications

University Ain Shams

Faculty Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Minor element

Nuclear Medicine (elective)

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course:

Clinical Oncology and Nuclear Medicine Department and Diagnostic Radiology
Department

Academic year / Level:

Master 4th semester

Date of specification approval:

A- Basic Information

Title: Nuclear Medicine course (elective)

Code:E6132

Credit Hours: 1

Lecture: 1/week

Total: 6 hours

Practical: 1/week

Total: 18 hours

**Coordinator: Clinical Oncology and Nuclear Medicine Department: Prof
Manal Meawad, Diagnostic Radiology Department: Prof. Hala Abou Senna**

B - Professional Information

1- Course Aims:

The overall aim of this course is to

Educate and train candidates to be proficient in PET scanning,
plan and perform appropriate PET scanning procedures, interpret the test results,
and formulate a diagnosis and an appropriate differential diagnosis.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

- a1- Identify the fundamentals of PET imaging.
- a2- Identify the indications, contraindications, complications and limitations of PET scanning.
- a3- Select diagnostic imaging of PET scanning.
- a4- Identify radiation safety rules and regulations.

b- Intellectual skills

By the end of the course the candidate will be able to:

- b1- Select appropriate PET procedures based on the referring physician's request and the patient's history. This involves selection of the appropriate radiopharmaceutical, dose, imaging technique and image presentation.
- b2-Review of image quality, defining the need for additional images and correlation with other imaging studies such as x-rays, CT, MRI, or ultrasound;
- b3- Interpret the results of these procedures
- b4-Correlate this information with other diagnostic studies
- b5- Dictate reports and communicate results promptly and appropriately

c- Professional skills

By the end of the course the candidate will be able to:

- c1-Participate in, personally perform and analyze PET scan procedures.
- c2- Use information technology to optimize learning.
- c3- Participate in the education of patients, families,students, residents and other health professionals.
- c4- Follow scientific progress in nuclear medicine, and learn to incorporate it effectively for modifying and improving diagnostic and therapeutic procedures

d- General and transferable skills

By the end of the course the candidate will be able to:

- d1 –Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families.
- d2-Communicate effectively with physicians and other health professionals,
- d3- Work effectively as a member or leader of a health care team or other professional group.
- d4- Act in a consultative role to other physicians and health professionals
- d5- Maintain comprehensive, timely, and legible medical records.

3- Course content:

Topics	No. of hours		
	L	C/P	SDL

Basics and fundamentals of PET scanning	1	18 hours	
PET in Genitourinary / Central nervous system imaging	1		
PET in Endocrine/ Pulmonary system imaging	1		
PET in Gastrointestinal/ Hepatosplenic imaging	1		
PET in Head and Neck / Lymphomas	1		
PET in Breast and other cancers	1		

L: Lecture, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

- 4.1 written examination to assess depth of knowledge
- 4.2 Practical examination to assess practical and professional skills
- 4.3 oral examination to assess General and transferable skills

Assessment Schedule and Weighing of Assessments

4.1 written exam	30
4.2 Clinical exam	15
4.3 Oral exam	5
Total	50

5 -- List of References

- 5.1- Course Notes (paper and / or electronic)
 - Handouts
- 5.2- Essential Books (Text Books)
- 5.3- Recommended Books
 - Nuclear Medicine, Leslie and Greenberg, Landes Bioscience, 2003
 - Nuclear Medicine Therapy, J. Eary, W. Brenner (Informa, 2007)
 - Physics and Radiobiology of Nuclear Medicine. 3rd Ed. Springer Verlag, NY, Saha G, 2006
 - Essentials of Nuclear Medicine imaging. 5th Ed. Saunders ((W.B.) Co Ltd, Mettler F A, Guiberteau M J, 2005
 - Practical Nuclear Medicine. 3rd Ed. Springer, Sharp PF, Gemmell HG, Murray AD, 2005
 - Nuclear Medicine, Leslie and Greenberg, Landes Bioscience, 2003
 - Positron emission tomography ; basic science and clinical practice. Valk PF, Bailey DL, Townsend DW, Maisey MN, Spring,2005.
 - PET and PET /CT (second edition). Wahl RL, Beanlands R S.B.Lippincott Williams& Wilkins,2008.
- 5.4- Periodicals, Web Sites, etc
 - Journal of nuclear medicine

Molecular Biology course specifications

University Ain Shams

Faculty Medicine

Program on which the course is given:

Master of Science in Clinical Oncology and Nuclear Medicine

Major or minor element of programs:

Minor element (elective)

Department offering the program:

Clinical Oncology and Nuclear Medicine Department

Department offering the course:

Biochemistry and Molecular Biology Department

Academic year / Level:

Master 4th semester

Date of specification approval

A- Basic Information

Course: Molecular Biology (elective)

Code:E6002

Credit Hours: 1 (elective)

Lecture: 1/week **Total:** 13 hours

Practical: 1/week **Total:** 4 hours

Coordinator: Department of Biochemistry and Molecular Biology: Prof Nora El Kholy

B - Professional Information

1- Course Aims:

The overall aim of this course is to provide candidates with knowledge in cancer biology, terminology, techniques of molecular biology and basic processes of carcinogenesis as it relates to neoplastic diseases and their treatment

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1- Recognize the principles of cell cycle, tumor cell kinetics, programmed cell death

a2- Recognize different terminology and techniques of molecular biology

a3- Describe proliferation, cell cycle and cell death in cancer

a4- Identify the microenvironment of the tumor-host interface

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Integrate basic molecular biology facts with clinical practice.

b2- Select the appropriate molecular biology technique.

b3- Analyze and interpret the results molecular biology techniques

b4- Identify tumor-associated genetic defects and relate them to patient prognosis.

b5- Use the computer to retrieve and compare molecular biology data

c- Professional skills

By the end of the course the candidate will be able to:

c1- Integrate molecular biology techniques with clinical practice.

c2- Utilize the literature and integrate the results of molecular biologic data in order to plan the best approach for the management malignancies

d- General and transferable skills

By the end of the course the candidate will be able to:

d1 – Use basic computing skills and internet to follow electronic lectures

d2 - Communicate relevant information with staff and colleagues

3- Course content:

Topics	No. of hours		
	L	C/P	SDL
Basic principles in molecular biology:			
1- Nucleic acid structure and organization	2		
2- Cell cycle, DNA replication and repair	2		
3- RNA transcription and processing	2		
4-The Genetic code, mutation and protein synthesis	2		
5- Recombinant DNA technology	2		
6- Techniques of genetic analysis		4	
7- Molecular biology of cancer (Oncogenes, tumor suppressor genes, apoptosis and telomerase)	2		
8- Gene Therapy and transgenic animals	1		

L: Lecture, and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written examination to assess depth of knowledge

Assessment Schedule and Weighing of Assessments

4.1 Written examination	30
4.2 Practical examination	15
4.3 Oral examination	5
Total	50

5 -- List of References

- 5.1- Course Notes (paper and / or electronic)
 - Lecture notes provided by the staff of Medical Biochemistry and Molecular Biology
- 5.2- Essential Books (Text Books)
 - USMLE Step 1 Biochemistry (Kaplan)
- 5.3- Recommended Books
 - Lippincott Biochemistry
- 5.4- Periodicals, Web Sites, etc

1st semester

Title: Module 1

Credit Hours: 6

Code number	Course Title	Total number of hours
ON6001	Physics (1.5 credit hours)	18 hours lectures 9 hours practical
ON6002	Radiobiology (1.5 credit hours)	18 hours lectures 9hours practical
ON6003	Medical statistics (0.5 credit hour)	4 hours lectures 7 hours practical
ON6004	Nuclear Medicine (1.5 credit hours)	7.5 hours lectures 30 hours practical
ON6005	Pathology (1 credit hour)	12 hours lectures 6 hours practical

2nd semester

Title: Module 2

Credit Hours: 6

Code number	Course Title	Total number of hours
ON6006	Clinical oncology (4 credit hours)	27 hours lectures 66 hours clinical
ON6007a	Chemotherapy (2 credit hours)	9 hours lectures I (1-8) 42 hours clinical

3rd semester

Title: Module 3

Credit Hours: 6

Code number	Course Title	Total number of hours
ON6007 b	Chemotherapy (2 credit hours)	9 hours lectures II(1-5) &III (1-3) 42 hours training
ON6008	Nuclear medicine (3 credit hours)	15 hours lectures 60 hours practical and clinical
ON6009a	Radiation technology(1 credit hour)	6 hours lectures (1-6) 12 hours practical and clinical

4th semester

Title: Module 4

Credit Hours: 6

Code number	Course Title	Total number of hours
ON6009 b	Radiation technology (3	21 hours lectures (7-18)

	credit hours)	54 hours practical and clinical
ON6010	Internal medicine (1 credit hour)	5 hours lectures 20 hours clinical
ON6011	Surgery(1 credit hour)	10.5 hours lectures 9 hours clinical
E6009	Medical statistics (elective) (1 credit hour)	7.5 hours lectures 15 hours practical
E6132	Nuclear medicine(elective) (1 credit hour)	6 hours lectures 18 hours practical and clinical
E6002	Molecular biology(elective) (1 credit hour)	13 hours lectures 4 hours practical

V- GENERAL INFORMATION

1 - MONITORING OF TRAINING AND SUBMISSION OF TRAINING REPORTS

You must keep proper and updated records in your logbook to reflect the activities encountered in your training. Your logbook must be fully endorsed by an authorized signatory at the end of each semester.

You will be continuously assessed by your supervisors, in consultation with head of department. An assessment will be submitted within 2 weeks of completion of each semester.

2 - MISCELLANEOUS INFORMATION:

INJURY AND/OR BLOOD OR BODY FLUID EXPOSURE:

During regular working hours, you should immediately report an exposure incident to infection control, emergency department, radiation officer, Prof Soheir Ismail and Assist Prof Amin El-Sayed according to type of exposure. If exposure occurs after regular working hours or during a weekend or holiday; please call Prof Soheir Ismail. For injury, please report to Prof Soheir Ismail.

Please also be sure to inform the supervisors of an exposure incident and/or injury.

3 - ACTION ON COMPLETION OF CLINICAL TRAINING

Once all training sessions are completed the log book should be signed by the senior supervisor and the head of the department and then should be submitted to post graduate Secretariat.

4- REFERENCE

The Training Guide is available at the post graduate Secretariat and could be downloaded from the following website is

VI – YOUR LOG BOOK

1- Introduction

The aim of this book is to give you a guide to the expectations for each item. It will be a guide for both you and your teachers to what you should be seeing and doing.

It will give you a list of the important topics that you should think about and should be covered in:

1. Clinical or practical sessions or
 2. Tutorials
- or
3. Self-directed learning (SDL)

For each item there is also a list of

1. Clinical conditions or Practical sessions to be seen or attended (According to each degree)
2. Practical procedures to be seen and done

Remember

This document is only a guide. It is not an exhaustive list. It is not just a checklist to score points. It is a guide to encourage you to read and learn more. This book is for your benefit. It will form a record of your clinical training and experience.

2 - Supervisors

Senior Supervisor (all professors in rotation)

Delegated to Event Organizer (e.g. Senior Staff in clinic day, Senior staff in planning day, etc)

3-Tables for Training Records

Candidates are required to fulfill 75% of the listed activities in order to be eligible for the exam entry. The minimum number required for each activity = 75%. You are free to attend more and record your extra attendance.

WEEKLY department PLAN

Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Breast Unit						
Clinic day (new cases)					*	
Clinic day (follow up cases)	*	*	*			*
Planning day				*		
Bedside education			*			

Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
CNS and Lymphoma unit						
Clinic day (new cases)				*		
Clinic day (follow up cases)	*	*			*	*
Planning day			*			
Bedside education					*	

Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Head and Neck and Sarcoma Unit						
Clinic day (new cases)	*	*	*			*
Clinic day (follow up cases)	*	*	*	*		*
Planning day					*	
Bedside education	*	*	*	*	*	*

Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
Lung and Genitourinary Unit						
Clinic day (new cases)	*		*	*	*	*
Clinic day (follow up cases)	*		*	*	*	*
Planning day		*				
Bedside education	*	*	*	*	*	*

Day	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
GIT and Gynecology Unit						
Clinic day (new cases)	*					
Clinic day (follow up cases)		*	*	*		*
Planning day					*	
Bedside education			*			

Scientific meeting: weekly activity: Monday

Every other week activity: Planning seminar

Monthly activity: Journal Club, Problematic cases Conference

Yearly activity: Department conference

Scientific meeting attendance

NB. Minimum number required is 32 (75%)

No	Date	Topics	Supervisor signature
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Conferences attendance
(NB. Minimum number required is 2 (75%))

No	Date	Topics	Supervisor signature
1			
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Planning Seminars attendance
NB. Minimum number required is 16 (75%)

No	Date	Topics	Supervisor signature
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Thesis attendance

NB. Minimum number required is ten (75%)

No	Date	Place	Name of the thesis	Supervisor signature
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Clinics attendance at Clinical Oncology Department

NB. Minimum number required is 100 new cases (75%)

No	Date	Patient	Diagnosis	Supervisor
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		medical record number		signature
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Radiotherapy planning activities Attended
NB. Minimum number required is 80 patients (75%)

No	Date	Patient medical record number	Topic	Supervisor signature
Breast:				
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Head & Neck				
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GIT:				
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Genitourinary:				
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Gynecology:				
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8				
Bronchogenic carcinoma				
1				
2				
3				
4				
5				
Paediatric oncology				
1				
2				
3				
4				
Blood disease				
1				
2				
3				
4				
Sarcoma				
1				
Skin Cancer				
1				
Non malignant disease				
1				
Palliation/ Metastatic				
1				
2				

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8				

Chemotherapy Activities Attended
NB. Minimum number required is 60 (75%)

No	Date	Patient medical record number	Name of activity	Supervisor signature
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Nuclear Medicine Activities attendance

NB. Minimum number required is 35 study in patients (75%)

No	Date	Patient medical record Number	Topic	Supervisor signature
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Case presentations (new and complicated cases)
NB. Minimum number required is 65 cases (75%)

<u>No</u>	<u>Date</u>	<u>Patient medical record number</u>	<u>Diagnosis</u>	<u>Supervisor signature</u>
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Patients seen / with different oncologic emergencies

NB. Minimum number required for each diagnosis is 8 patients (75%)

<u>No</u>	<u>Date</u>	<u>Primary diagnosis</u>	<u>Supervisor signature</u>
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Cases of internal medicine

Number required 33 cases

<u>No</u>	<u>Date</u>	<u>Patient Medical Record no</u>	<u>Diagnosis</u>	<u>Supervisor Signature</u>
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Cases to be attended (Internal Medicine)

Cardiovascular system	Endocrine	nephrology	Autoimmune disease
1-Heart failure(1) 2-Acute chest pain(1) 3-Arrhythmia(1) 4-Shock(1)	1-Thyrotoxicosis (1) 2-Myxoedema (1) 3-Diabetes mellitus (2)	1-acute renal failure(1) 2-urinary tract infection (1) 3-chronic renal failure(1) 4-electrolyte imbalance (1)	Rheumatoid arthritis (1)
Respiratory system	hematology	neurology	GIT

1-status asthmatics (1) 2-Acute Respiratory failure (1) 3-Pulmonary embolism (1) 4-Hemoptysis(1) 5-COPD (1) 6-Chest infection (1) 7- pleural effusion(1) 8-mediastinal syndrome (1)	1-bleeding (1) 2-DIC (1) 3-Tumor lysis syndrome(1) 4-thromboembolism (1)	1-stroke (1) 2-paraplegia (1) 3-peripheral neuropathy (1)	Bleeding (1) Hepatic encephalopathy & LCF (1) Chronic hepatitis (1) Liver cirrhosis (2)
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Rounds attended in internal medicine(5 rounds)

No	Date	Topic	Supervisor signature
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15			

Clinical attendance in internal medicine weekly conference(5):

No	date	Topic	Supervisor signature
1			
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9			

10			
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Case presentation in internal medicine(2)

No	Date	Topic	Supervisor
1			
2			

Cases of Surgery(15 cases)

No	Date	Patient Medical Record no	Diagnosis	Supervisor Signature
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Practical skills

Requirements

Candidates are required to fulfill 75% of the listed activities in order to be eligible for the exam entry. The minimum number required for each activity = 75%. You are free to attend more and record your extra attendance.

Clinical oncology activities in each system	Competent	Not competent
Patient identity verification		
Construct an informed consent		
Perform appropriate history taking		
Perform appropriate physical examination		
Selection of appropriate diagnostic studies		
Perform accurate staging		
Perform appropriate treatment planning		
Assesment of the response to treatment		
Describes side effects of treatment		
Use of supportive treatment		
Treatment of complications		
Use of palliative treatment		
Selection of adequate follow up		
Describing prognosis and patterns of failure		
Communication with the patient		

Anticancer agents	Competence	
	<i>Yes</i>	<i>No</i>
Independent prescription of chemotherapeutic regimens in the adjuvant setting		
Independent prescription of chemotherapeutic regimens in the metastatic setting		
Independent prescription of chemotherapeutic regimens in the neo- adjuvant setting		
Independent prescription of chemotherapy as radiosensitizer		

Monitoring of patients during chemotherapy (dose modifications, treatment delay...etc		
Prescription of chemotherapy in patients with co-morbidities		
Recording of chemotherapy toxicities using toxicity criteria grading		
Proper intake of patient's consent for participation in clinical trials		
Supportive and palliative measurements		
Independent prescription of CSF		
Management Side-effects of supportive treatments		
Anticancer Agent Administration		
Care of and access to indwelling venous catheters		

Radiation Technology	Competence	
	Yes	No
Assessing the patient (radiological studies)		
Appropriate positioning & centralization immobilization		
2 D planning: <ul style="list-style-type: none"> a. Marks and/or contrast b. accessories c. Field borders d. Centers e. Matching of fields g. blocks 		
3 D planning: <ul style="list-style-type: none"> a. target volume determination, GTV,CTV and PTV and relevant ICRU recommendation. 		
Verification films		
Absorbed dose distribution		
Dose volume histograms		
Measurements of tumor control		
Measurements of treatment toxicity		
Indications for sequencing of radiation therapy with surgery and/or anticancer agents		

Acute and late effects of radiation therapy		
Radiotherapy treatment monitoring		

Nuclear Medicine Activities		
Activity	Competent	Not competent
Select appropriate nuclear medicine imaging procedure or therapy: a) selection of the appropriate radiopharmaceutical, b) dose, c) imaging technique including: - Patient's position - Patient's injection - Nature of study (Dynamic, static or both) - Data processing - Protection issues - Study interpretation - Instructions on post examination period		
a) Review image quality, b) Define the need for additional images b) correlation with other imaging studies such as x-rays, US, CT, MRI,		
Identify procedures of musculoskeletal studies		
Identify procedures of endocrinologic studies		
Identify procedures of cardiovascular studies		
Identify procedures of neurologic studies		
Identify procedures of genitourinary tract imaging		
Interpretation of images		
Therapeutic administration of Radiopharmaceuticals: a) patient selection		

b) patient identity verification, c) explanation of informed consent, d) documentation of pregnancy status, e) counseling of patients and their families on radiation safety issues, f) calculation of the administered dose g) scheduling follow-up after therapy		
Safely prepare and measure patient or human subject dosages		
Processing the eluate with reagent kits to prepare labeled radioactive drugs		

Procedure cases
Number required 30 cases

Procedure	Date	Patient Record No	Supervisor Signature
Bone marrow aspiration Observation			
1			
Aseptic Venopuncture access			
1			
2			
3			
Infusion pump observation			
1			
2			
Canula insertion			
1			
2			
3			
4			
5			
Arterial blood gases			

interpretation			
1			
2			
3			
Lumbar puncture observation			
1			
Ascitic fluid aspiration			
1			
2			
Central venous line observation			
1			
Urethral catheter			
1			
2			
3			
Observation of intercostals tube			
1			
Nasogastric tube insertion			
1			
2			
ECG			
1			
2			
3			
4			
Observation of GIT endoscopy			
1			
Observation of abd U/S			
1			

5 - Log book preview

The candidate logbook will be reviewed and patients seen/ skills performed summarized by diagnosis groups during the semester evaluation and at the end of the course in the table below. **This reflects the number of activity done by category.** The results of this review will be totaled in the summary chart below.

Summary

Semester	1 st	2 nd	3 rd	4 th	Total
Activity	No	No	No	No	
1. Scientific meeting attendance(32 meetings)					
2.Conferences attendance(2 conferences)					
3.Planning seminars attendance(16 seminars)					
4.Thesis attendance(10 thesis)					
5.Clinics attendance at Demerdash hospital (100 patients)					
6.Radiotherapy planning activities attended (80 patients)					
Breast: 18 patients CNS: 9 patients Head &Neck: 9 patients GIT: 7 patients Genitourinary: 7 patients Gynecology: 7 patients Bronchogenic carcinoma: 5 patients Paediatric oncology: 4 patients Blood disease: 4 patients Sarcoma: 1 patient Non malignant disease:1 patient Skin Cancer: 1 patient Palliation/ Metastatic: 7 patients					
7.Chemotherapy activities					

attended(60 patients)					
8.Nuclear medicine activities attendece(35)					
9.Case presentations(65 cases)					
10.Patients seen with oncologic emergencies(8 patients)					
11- procedures (30 cases)					
12-internal medicine activities a- cases attended (33) b-weekly attendance (5) c-rounds attended (5) d-cases presented (2 cases)					
13- Surgery cases (15)					
Supervisor's Signature					

VII - HEAD OF DEPARTMENT APPROVAL FOR THE EXAM ENTRY

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
عن الطالب /
القيّد لدرجة (ماجستير / الدكتوراة)
يقسم /

تقرير السادة الاساتذة المشرفون

- | | | |
|--------------------------|-------------------|-----------------------------|
| <input type="checkbox"/> | بدأ | جمع المادة العلمية |
| <input type="checkbox"/> | أوشك على الإنتهاء | و كتابة المقدمة |
| <input type="checkbox"/> | بدأ | الجزء العملى |
| <input type="checkbox"/> | أوشك على الإنتهاء | |
| <input type="checkbox"/> | بدأ | مناقشة النتائج |
| <input type="checkbox"/> | أوشك على الإنتهاء | |
| <input type="checkbox"/> | بدأ | المراجعة النهائية مع المشرف |
| <input type="checkbox"/> | أوشك على الإنتهاء | |
- قطع شوطا محدودا / انتهى من الجمع
- قطع شوطا محددًا / انتهى من التحليل
- قطع شوطا محدودا / انتهى من التحرير
- قطع شوطا محددًا / إنتهت تماما

رأى السادة المشرفون

- | | |
|--------------------------|---------------------|
| <input type="checkbox"/> | إستمرار قيّد الطالب |
| <input type="checkbox"/> | شطب قيّد الطالب |
- مد القيّد

تاريخ التشكيل / /

نعم
لا

تم تشكيل لجنة المناقشة

مد / شطب القيّد

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
عن الطالب /
القيّد لدرجة (ماجستير / الدكتوراة)
يقسم /

تقرير السادة الاساتذة المشرفون

- | | | |
|---|--|-----------------------------|
| <input type="checkbox"/> قطع شوطا محدودا | <input type="checkbox"/> بدأ | جمع المادة العلمية |
| <input type="checkbox"/> إنتهى من الجمع | <input type="checkbox"/> أوشك على الإنتهاء | و كتابة المقدمة |
| <input type="checkbox"/> قطع شوطا محددًا | <input type="checkbox"/> بدأ | الجزء العملى |
| <input type="checkbox"/> إنتهى من التحليل | <input type="checkbox"/> أوشك على الإنتهاء | |
| <input type="checkbox"/> قطع شوطا محدودا | <input type="checkbox"/> بدأ | مناقشة النتائج |
| <input type="checkbox"/> إنتهى من التحرير | <input type="checkbox"/> أوشك على الإنتهاء | |
| <input type="checkbox"/> قطع شوطا محددًا | <input type="checkbox"/> بدأ | المراجعة النهائية مع المشرف |
| <input type="checkbox"/> إنتهت تماما | <input type="checkbox"/> أوشك على الإنتهاء | |

رأى السادة المشرفون

- | | |
|-----------------------------------|---|
| <input type="checkbox"/> مد القيد | <input type="checkbox"/> إستمرار قيد الطالب |
| | <input type="checkbox"/> شطب قيد الطالب |

تاريخ التشكيل / /

نعم
لا

تم تشكيل لجنة المناقشة

مد / شطب القيد

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
عن الطالب /
القيده لدرجة (ماجستير / الدكتوراة)
يقسم /

تقرير السادة الاساتذة المشرفون

- | | | | |
|--------------------------|-------------------|--------------------------|--------------------------------------|
| <input type="checkbox"/> | بدأ | <input type="checkbox"/> | جمع المادة العلمية
وكتابة المقدمة |
| <input type="checkbox"/> | أوشك على الإنتهاء | <input type="checkbox"/> | |
| <input type="checkbox"/> | قطع شوطا محدودا | <input type="checkbox"/> | الجزء العملى |
| <input type="checkbox"/> | أوشك على الإنتهاء | <input type="checkbox"/> | |
| <input type="checkbox"/> | أوشك على الإنتهاء | <input type="checkbox"/> | مناقشة النتائج |
| <input type="checkbox"/> | أوشك على الإنتهاء | <input type="checkbox"/> | |
| <input type="checkbox"/> | أوشك على الإنتهاء | <input type="checkbox"/> | المراجعة النهائية مع المشرف |
| <input type="checkbox"/> | أوشك على الإنتهاء | <input type="checkbox"/> | |
| <input type="checkbox"/> | أوشك على الإنتهاء | <input type="checkbox"/> | |
| <input type="checkbox"/> | أوشك على الإنتهاء | <input type="checkbox"/> | |

رأى السادة المشرفون

- | | |
|--------------------------|--------------------|
| <input type="checkbox"/> | استمرار قيد الطالب |
| <input type="checkbox"/> | شطب قيد الطالب |
| <input type="checkbox"/> | مد القيد |

تاريخ التشكيل / /

نعم
لا

تم تشكيل لجنة المناقشة

مد / شطب القيد

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
عن الطالب /
القيّد لدرجة (ماجستير / الدكتوراة)
يقسم /

تقرير السادة الاساتذة المشرفون

- | | | |
|---|--|---------------------------------------|
| <input type="checkbox"/> قطع شوطا محدودا | <input type="checkbox"/> بدأ | جمع المادة العلمية
و كتابة المقدمة |
| <input type="checkbox"/> إنتهى من الجمع | <input type="checkbox"/> أوشك على الإنتهاء | |
| <input type="checkbox"/> قطع شوطا محددًا | <input type="checkbox"/> بدأ | الجزء العملى |
| <input type="checkbox"/> إنتهى من التحليل | <input type="checkbox"/> أوشك على الإنتهاء | |
| <input type="checkbox"/> قطع شوطا محدودا | <input type="checkbox"/> بدأ | مناقشة النتائج |
| <input type="checkbox"/> إنتهى من التحرير | <input type="checkbox"/> أوشك على الإنتهاء | |
| <input type="checkbox"/> قطع شوطا محددًا | <input type="checkbox"/> بدأ | المراجعة النهائية مع المشرف |
| <input type="checkbox"/> إنتهت تماما | <input type="checkbox"/> أوشك على الإنتهاء | |

رأى السادة المشرفون

- | | |
|-----------------------------------|---|
| <input type="checkbox"/> مد القيد | <input type="checkbox"/> إستمرار قيد الطالب |
| | <input type="checkbox"/> شطب قيد الطالب |

تاريخ التشكيل / /

نعم
لا

تم تشكيل لجنة المناقشة

مد / شطب القيد

VIII – EVALUATION FORMS

Evaluation Form (at the end of each semester)

To be completed at -----

Candidate

Supervisor

Location

Aim of training

Agreed educational objectives and timescale in which objectives should be achieved.

Comments by Candidate

Comments by Supervisor

Date of next meeting

Signed by candidate

Signed by Supervisor

Date

Degree Program Evaluation Form By The Candidate

To be completed at the end of your degree.

VIII – EVALUATION FORMS

Evaluation Form (at the end of each semester)

To be completed at -----

Candidate
Supervisor
Location

Aim of training

Agreed educational objectives and timescale in which objectives should be achieved.

Comments by Candidate

Comments by Supervisor

Date of next meeting

Signed by candidate
Signed by Supervisor
Date

Degree Program Evaluation Form By The Candidate
To be completed at the end of your degree.

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Evaluation Form (at the end of each semester)

To be completed at -----

Candidate
Supervisor
Location

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Date of next meeting

Signed by candidate
Signed by Supervisor
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Degree Program Evaluation Form By The Candidate
To be completed at the end of your degree.

VIII – EVALUATION FORMS

Evaluation Form (at the end of each semester)

To be completed at -----

Candidate

Supervisor

Location

Aim of training

Agreed educational objectives and timescale in which objectives should be achieved.

Comments by Candidate

Comments by Supervisor

Date of next meeting

Signed by candidate

Signed by Supervisor

Date

Degree Program Evaluation Form By The Candidate

To be completed at the end of your degree.

ease consider each pair of statements and decide which most clearly reflects your view and **tick one box or answer the question.**

I. Individual Information

1. Are you a graduate of ASU?
 yes no to some degree
2. Year and semester when studies began:

II. General Questions

1. What are the advantages/disadvantages of the general study environment at the University ASU?
2. What were your expectations when you applied to the degree?
3. Do you feel that the degree program prepares you well for your future studies or employment according to the demands and expectations of those institutions?
 yes no to some degree
4. Has the time limit of the program (two or three academic years) caused you any difficulties _____ or _____ inconveniences?
 yes no to some degree

III. Structure of Degree Program

1. Did you receive enough guidance in planning your study schedule in the beginning _____ of _____ the _____ program?
 yes no to some degree
2. What were the main difficulties in the planning of your study schedule?
3. What is your general opinion on the structure of the degree program?

4. In your opinion, does the degree program offer a good balance of lectures, seminars, conferences, and book exams?

yes no to some degree

a) General Studies

i) Do you feel that you have received enough guidance on academic writing?

yes no to some degree

ii) Do you feel that you have acquired sufficient knowledge on research skills (e.g. quantitative and qualitative research methods)?

yes no to some degree

b) Courses

i) Have you had some special difficulties in completing some of the courses? Please specify.

ii) Has there been a sufficient variety of courses offered for your optional studies?

yes no to some degree

iii) Have you received enough guidance for the preparation of your thesis?

yes no to some degree

IV. Concluding Points

1. Did the degree program meet your expectations?

yes no to some degree

2. What aspects of the degree program do you particularly like?

3. What aspects of the degree program do you particularly dislike?

4. What are your suggestions on how to improve the program?

Thank you!