Peer Revision

Reviewers	University	Date of Revision
- Prof. Dawlat Salem	Cairo	10/12/2011
- Prof. Ahmad K. Mansur	Mansura	28/11/2011

Program specification of Master degree in Radiodiagnosis

<div align="center">

Sohag University   **Faculty of medicine**
</div>

A. Basic Information

1. Program title Master degree in radio diagnosis.

2. Program type: single

3. Faculty: Faculty of Medicine

4. Department: Radio diagnosis

5. Coordinator: Dr/Nahla Mohamed Hasan

6. Assistant coordinator: Dr. Mohamad Zaky Ali.

7. External evaluator: Dr. Mahmoud Abd-Alla Sharaf

8. Last date of program specifications approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018.
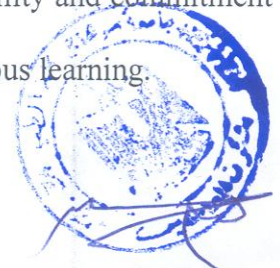
B. Professional Information

1 Program aims

The aim of this program is to provide the postgraduate student with medical knowledge and skills essential for practice of specialty and necessary to gain further training and practice in the field of radio diagnosis through providing:

1- Scientific knowledge essential for practice of radio diagnosis according to the international standards.
2- Skills necessary for proper diagnosis and management of patients in the field of radio diagnosis including diagnostic problem solving and decision making.
3- Ethical principles related to the practice in this specialty.
4- Active participation in community needs assessment and problems solving.
5- Maintenance of learning abilities necessary for continuous medical education.
6- Maintenance of research interest and abilities.

2 Attributes of the Diagnostic Radiology master degree student:

1. Mastering the basics of scientific research methodologies.
2. The application of the analytical method and used in the field of Radiology.
3. The application of specialized knowledge and integrate it with the relevant knowledge in practice.
4. Be aware of the problems and has modern visions in the field of Radiology.
5. Identify problems in the field of radiology and find solutions to them.
6. Mastery of professional skills in this specialty and use of the appropriate recent technologies supporting these skills.
7. Communicate effectively and the ability to lead work teams.
8. Decision-making in his professional contexts.
9. To employ and preserve the available resources to achieve the highest benefit.
10. Awareness of his role in the community development and preservation of the environment at the lights of both international and regional variables.
11. Reflects the commitment to act with integrity and credibility, responsibility and commitment to rules of the profession.
12. Academic and professional self development and be capable of continuous learning.

Program specification of Master degree in Radiodiagnosis

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11. Reflects the commitment to act with integrity and credibility, responsibility and commitment to rules of the profession.
12. Academic and professional self development and be capable of continuous learning.

3 Intended learning outcomes (ILOs):

a) Knowledge and understanding

By the end of the study of master program in Radiology the Graduate should be able to :

a1. Mention updated theories, fundamentals and recent knowledge in the field of Radiodiagnosis specialty and related fields.

a2. Mention theories, modalities and recent knowledge in the field of Radiodiagnosis specialty.

a3. List Principles of scientific research.

a4. Describe the methodologies and tools of scientific research.

a5. Define and mention the medicolegal and research ethics

a6. Define the principles and fundamentals of ethics and legal aspects of professional practice in the field of Radiodiagnosis

a7. Enumerate the principles and fundamentals of quality of professional practice in the field of Radiodiagnosis

a8. Trace the impact of professional practice on the environment

a9. Explain the methods of environmental development and maintenance

b) Intellectual skills

By the end of the study of master program in Radiology the Graduate should be able to :

b1. Analyze and evaluate data and information in the field of Radiodiagnosis and using it for titration and conclusion.

b2. Suggest, evaluate and criticize specialized problem-solutions based on the available data.

b3. Plan, measure and compare research studies that add to knowledge.

b4. Formulate scientific papers in the area of Radiodiagnosis

b5. Assess risk in professional practices in the field of Radiodiagnosis

b6. Plan to improve performance in the field of Radiodiagnosis

b7. Make professional decisions in different professional contexts.

b8. Create and evaluate new methods for Radiodiagnosis

b9. Integrate scientific discussion administration based on scientific evidences and proofs.

b10. Criticize researches related to Radiodiagnosis

c) Professional and practical skills

By the end of the study of master program in Radiology the Graduate should be able to :

c1. Mastery of the basic and modern professional skills in the area of Radiodiagnosis

c2. Writing and evaluation of medical reports.

c3. Evaluation and development of methods and tools existing in the area of Radiodiagnosis

c4. The use of technological methods to serve the professional practice.

c5. Planning for the development of professional practice and development of the performance of others.

c6. Orientation to develop new methods, tools and ways of professional practice

d) General and transferable skills

By the end of the study of master program in Radiology the Graduate should be able to :

d1. Doing the different types of effective communication.

d2. Using information technology to serve the development of professional practice

d3. Teaching others and evaluating their performance.

d4. Self-assessment and identification of personal learning needs.

d5. The use of different sources for information and knowledge.

d6. Working in a team and team's leadership.

d7. Scientific meetings administration according to the available time

4 Academic standards

Sohag faculty of medicine adopted the general National Academic Reference Standards (NARS) provided by the national Authority for Quality Assurance and Accreditation of Education (NAQAEE) for postgraduate program. This was approved by the faculty Council decree No. 6854, in its cession No. 177, dated 18/5/2009. Based on these NARS, Academic Reference Standards were suggested for this program. These ARS were revised by external evaluator and approved by the Faculty Council decree No. 7528. , it its cession nO. 191, dated on 15/3/2010. The adoption of NARS and the suggested ARS were approved by University council degree No 587, in its cession No.60. Dated 26-12-2011.

5   Curriculum Structure and Contents

5.a- Program duration:

5.b- Program structure

5.b.i- No. of hours per week: Lectures

Subject	Total No of hours	hours /week		
		Lectures	Practical	Clinical
First Part:				
Minors : **1-** Biostatistics	2	1	2	
2- radiological anatomy & dark room	1	1	---	
3- radiological physics	2	1	2	
4- special techniques & Positioning	2	1	2	
Radiobiology and Radioisotopes	2	1	2	
Pathology	2	1	2	
Surgery	2	1	2	
internal medicine	2	1	2	

Second part:

Subject	Total No of hours	hours /week		
		Lectures	Practical	Clinical
Majors : Diagnostic radiology	24	4.67	6.67	---

code	Item		No	%
b.i	Total credit hours	Compulsory	50	100
		Elective	٠	٠
		Optional	٠	٠
b.iii	credit hours of basic sciences courses		5	١٠
b.iv	credit hours of courses of social sciences and humanities		٠	٠
b.v	credit hours of specialized courses:		٢٤	٤٨

b.vi	credit hours of other course	5	10
b.vii	Practical/Field Training	٥	١٠
b.viii	Program Levels (in credit-hours system): Level 1: 1st part Level 2: 2nd Part Level 3: Thesis	١٥ ٢٤ ٦	٣٠ ٤٨ ١٢

6   Program courses
5 courses are compulsory + 0 optional courses.
6,1- Level/Year of Program…
1 Semester…1
First
a. Compulsory

First part:

		hours /week			Program ILOs
Subject	Total No of hours	**Lectures**	**Practical**	**Clinical**	
First Part:					
1- biostatistics	2	1	1	---	a4,a5,a6,a7,a8,a9 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7
2- radiological anatomy & dark room	1	1	---	---	a1,a2,a3 ,a7,a8,a9 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7
3- radiological physics	2	1	1	---	a3,a4,a5,a6,a7,a8,a9 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7
4-special techniques & Positioning	2	1	1	---	a1,a2, a5,a6,a7,a8,a9 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7,d8
Pathology	2	1	1	---	,a3,a4,a5,a6,a7,a8 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7
Surgery	2	1	1	---	a6,a7,a8,a9 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7
internal medicine	2	1	1	---	a4,a5,a6,a7,a8,a9 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7

Second part:

Subject	Total No of hours	hours /week			Program ILOs
		Lectures	Practical	Clinical	
Majors : Diagnostic radiology	24	4.67	6.67	---	a3,a4,a5,a6,a7,a8,a9 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7

7 Program Admission Requirements
I- General Requirements.

1. Candidate should have either:
   i. MBBch degree from any Egyptian Faculty of Medicine or
   ii. Equivalent Degree from Medical Schools abroad approved by the ministry of high Education.
2. Candidate should pass the house office training year.
3. Those who are not university hospital residents should pass a training for at least 12 months in one of the known hospitals.
4. Follow postgraduate bylaw Regulatory rules of Sohag Faculty of Medicine approved by the ministerial decree No. (44), dated 6/1/2010.

II- Specific Requirements.

Candidates graduated from Egyptian Universities should have at least "Good Rank" in their final year/ cumulative years examination, and grade "Good Rank" **Radiodiagnosis** course too.

1. Candidate should know how to speak & write English well
2. Candidate should have computer skills

8 Regulations for Progression and Program Completion

Duration of program is 50 credit hours (≥4 semesters ≥3 years), starting from registration till 2nd part exam; divided to:

First Part: (15 Credit hours ≥6 months ≥1 semester):

- Program-related basic & clinical sciences & research Methodology, Ethics & medical reports, Biostatistics and computer.
- At least six months after registration should pass before the student can ask for examination in the 1st part.
- Two sets of exams: 1st in October — 2nd in April.
- At least 50% of the written exam is needed to pass in each course.
- For the student to pass the first part exam, a score of at least 60% (Level D) in each course is needed.
- Those who fail in one course need to re-exam it only for the next time only, and if re-fail, should register for the course from the start.

Thesis/Essay(6 Credit hours ≥6 months=1 semester):

- Completion of the 1st part credit hours and passing the exams are pre requisites for documentation of the **Thesis/Essay** subject.
- Should be completed, defended and accepted after passing the 1st part examination, and at least one month before allowing to enter 2nd part final examination.

- Accepting the thesis is enough to pass this part.

Second Part: (24 Credit hours ≥18 months= 3 semesters):
- Program related specialized science of **Radiodiagnosis** courses.
- Completion of the 1st part credit hours and passing the exams are pre requisites for documentation of the 2nd part courses.
- After passing at least:
    1. University hospital residents: 36 months residency in the department of **Radiodiagnosis**.
    2. Residents in other places: Completed 36 months residency; 12 months of them training in the department of **Radiodiagnosis**.
- The students should pass the 1st part before asking for examination in the 2nd part.
- Fulfillment of the requirements in each course as described in the template and registered in the log book (5 Credit hours; with obtaining ≥75% of its mark) is a prerequisite for candidates to be assessed and undertake part 1 and part 2 examinations; the credit hours of the logbook are calculated as following:
    - Each Cr. Hr.= 60 working Hrs.
    - Logbook= 5 Cr. Hr. X 60 working Hrs = 300 Working Hrs.
    - Collection of working Hrs. is as following:

Activity		Hrs
Grand rounds	اجتماع علمى موسع	٦
Training courses	دورات تدريبية	**12/ day**
Conference attendance	حضور مؤتمرات علمية داخلى خارجة	١٢/day 18/day
Thesis discussion	حضور مناقشات رسائل	٦
Workshops	حضور ورش عمل	١٢/day
Journal club	ندوة الدوريات الحديثة	٦
Seminars	لقاء علمى موسع	٦
Morbidity and Mortality conference	ندوة تحليل المخاطر المرضية أوالوفاة	٦
Self education program	برنامج التعليم الذاتى	٦

- Two sets of exams: 1st in October - 2nd in April.
- At least 50% of the written exam is needed to pass in each course.
- For the student to pass the 2nd part exam, a score of at least 60% (Level D) in each course is needed.

9   Methods of student assessments:

Method of assessment	weight	The assessed ILOs
1-Activities		- General transferable skills, intellectual skills
2-Written Exams: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	50%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills

3-OSCE/ OSPE	50%	-Practical skills, intellectual skills, general transferable skills
4-Structured Oral Exams		- Knowledge, Intellectual skills, General transferable skills

Assessment schedule:
Part I:
- Special techniques & Positioning: Written Exam (2 hours) + OSPE + Structured oral Exam
- Radiological Anatomy & Dark room: Written Exam (2 hours) + structured oral Exam
- Radiological Physics: Written Exam (2 hours) + structured oral Exam + OSPE
- Community Médicine: Written Exam (2 hours) + Structured oral Exam
- Microbiology: Written Exam (2 hours) + Structured oral Exam
- Internal medicine & neonatology: Written Exam (2 hours) + Structured oral Exam
- General Surgery: Written Exam (٢ hours) + Structured oral Exam + OSCE
- Biostatistics & Computer and Research Methodology: Written Exam (2 hours) +   Structured oral
  Exam+ OSPE

Part II:

- Radiology: Two Written Exams (3 hours for each, one for Obstetrics and the 2nd for, Gynecology)
+ one written exam (2 hours) for family planning + one written exam containing commentary (1.5
hours) + OSCE + Structured oral Exam.

10 Evaluation of program intended learning outcomes

Evaluator	Tool	Sample
1- Senior students	Questionnaire	30
2- Alumni	Questionnaire	30
3- Stakeholders (Employers)	Questionnaire	30
4-External Evaluator(s) (External Examiners)	report	1
5- Other		

Course Specification of special techniques and Positioning in MSc degree in Radiodiagnosis

Sohag University   **Faculty of Medicine**

1. Program on which the course is given: MSc degree in Radiodiagnosis.

2. Major or minor element of program: Minor

3. Department offering the program: radiodiagnosis

4. Department offering the course: Radiodiagnosis

5. Academic year / level: 1st part.

6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Course Specification of special techniques and Positioning in MSc degree in Radiodiagnosis
Code: RAD 0528-200.
Total hours

Module	Lectures	Practical/Surgical	Tutorials/Clinical	Total hour
Special techniques	7.5	15	---	22.5
Positioning	7.5	15	---	22.5

B. Professional Information

1. Overall Aims of Course
Special techniques module :
By the end of the course the post graduate students should be able to have the professional knowledge of special techniques required for radiodiagnosis .
Positioning module :
By the end of the course the post graduate students should be able to have the professional knowledge of Positioning required for radiodiagnosis

2. Intended Learning Outcomes of Course (ILOs):
Special techniques module :
According to the intended goals of the faculty

a) Knowledge and Understanding:
By the end of the course the student should be able to:
a1. Mention, fundamentals and recent knowledge of different special techniques in Radiodiagnosis specialty and related fields.
a2. List Principles of contrast enhanced examinations of different body systems.
a3. Describe the methodologies and techniques of different contrast enhanced examinations.
a4. Define and mention the indications, contraindications, complications and patient preparations and care for different special radiological techniques.

b) Intellectual Skills:
By the end of the course the student should have the ability to:
b1. Formulate an appropriate special technique for different diseases by learning how to analyze and evaluate clinical data and information to select suitable examination for each complaint.

b2. Know the current radiological techniques for conventional radiology and imaging including patient preparation, examination technique, contrast material used, patient after care and the possible complications of each technique as well as management of these complications.

b3. Contrast media: Types (positive, negative), chemical components, indications and contraindications for use, Reactions to certain types and management of these reactions.

b4. Suggest, evaluate and criticize specialized problem-solutions related to different techniques based on the available aquired skills.

b5. Create and evaluate new methods for special technique examinations.

c) Professional and Practical Skills:
By the end of the course the student should have the ability to:

c1. Mastery of the basic and modern professional skills in the area of special techniques in Radiodiagnosis.

c2. Writ and evaluate medical reports related to special techniques.

c3. The use of technological methods to serve the professional practice.

c4. Planning for the development of professional practice and development of the performance of others.

c5. Orientation to develop new methods, tools and ways of professional practice.

d) General and Transferable Skills:
By the end of the course the student should have the ability to:

d1. Using information technology to serve the development of professional practice.

d2. Teaching others and evaluating their performance.

d3. The use of different sources for information and knowledge.

d4. Working in a team and team's leadership.

d5. Scientific meetings administration according to the available time.

Positioning Module.
Intended Learning Outcomes of Course (ILOs):
According to the intended goals of the faculty

a) Knowledge and Understanding:
By the end of the course the student should be able to:

a1- Mention fundamentals and basic knowledge of positioning in the field of Radiodiagnosis specialty.

a2- List Principles of positioning in radiodiagnosis.

a3- Describe and interpretate the methodologies of different body positions in the field of radiodiagnosis.

b) Intellectual Skills:
By the end of the course the student should have the ability to:

b1. Do different positions for different parts of the body.

b2. Suggest, evaluate and criticize specialized problem-solutions based on the available data related to positioning.

b3. Plan to improve performance of radiography by learning accurate positioning of the different anatomic parts with fair knowledge of the exposure factors.

c) Professional and Practical Skills:
By the end of the course the student should have the ability to:

c1. Mastery of the basic and modern professional skills in the area of positioning in Radiodiagnosis.

c2. The use of technological methods to serve the professional practice.

c3. Planning for the development of professional practice and development of the performance of others.

d) General and Transferable Skills:
By the end of the course the student should have the ability to:

d1. Using information technology to serve the development of professional practice.
d2. Teaching others and evaluating their performance.
d3. The use of different sources for information and knowledge.
d4. Working in a team and team's leadership.
Scientific meetings administration according to the available time

3. **Contents**

Special techniques module:

Topic	No. of hours	Lecture	Tutorial/ Practical
Techniques of contrast enhanced radiological examination of:	5	2	3
-GIT.	5	2	3
-Urological system.	4	1	3
-Vascular System.	4	1	3
-Female Genital System.	3	١	2
-Lacrimal System.	1.5	0.5	١
-Lymphatic System.			
Total	22.5	7.5	15
Credit	1	0.5	0.5

Positioning module :

Topic	No. of hours	Lecture	Tutorial/ Practical
Positions for upper limbs.	6	0.75	1.5
Positions for lower limbs.	6	0.75	1.5
Positions of the spine.	6	0.75	1.5
Positions for the joints.	6	0.75	1.5
Positions for the skull.	6	0.75	1.5
Positions for paranasal sinuses.	6	0.75	1.5
Positions for the ear.	6	0.75	1.5
Positions for the abdomen	6	0.75	1.5
Positions for urinary tract.	6	0.75	1.5
Positions for the cheat and heart.	6	0.75	1.5
Total	22.5	7.5	15
Credit	1	0.5	0.5

4. **Teaching and Learning Methods**
    4.1- Lectures
    4.2- Practical sessions

5. **Student Assessment Methods**

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills

Assessment Schedule

Assessment 1Final written exam   Week: 24

Assessment 2Final Structured Oral Exam   Week: 24

Assessment 3 Attendance and absenteeism throughout the course

Weighting of Assessments

Final-term written examination	50	%
Final Structured Oral Exam	50	%
Total	100	%

Any formative only assessments Attendance and absenteeism throughout the course

6. **List of References**

Special techniques module:

6.1- Course Notes

Department notes, lectures and handouts

6.2- Essential Books (Text Books)

1-Sutton-Text Book of radiology and imaging .

2- Gringer Text Book.

3- Fundamentals of diagnostic radiology,Williams E.brant .

6.3- Recommended Books

1- Stephen chapman –A guide to radiological procedures.

6.4- Periodicals, Web Sites, … etc

1-American Journal of radiology

2-RSNA "radiographices –Radiology:.

Positioning module:

6.1- Course Notes

Department notes, lectures and handouts

6.2- Essential Books (Text Books)

1-Sutton-Text Book of radiology and imaging.

2- Gringer Text Book.

3- Fundamentals of diagnostic radiology,Williams E.brant .

6.3- Recommended Books

1- Clarks –positioning in radiography.

6.4- Periodicals, Web Sites, … etc

1-American Journal of radiology

2-RSNA "radiographices –Radiology:.

7. **Facilities Required for Teaching and Learning:**

1. ADEQUATE INFRASTRUCTURES: including teaching places (teaching class, teaching halls,) comfortable desks, good source of aeration, bathrooms, good illumination and safety& security tools.

2. TEACHING TOOLS: including screens, computers including CD (rw), data shows, projectors, flips chats, white boards, video players, digital video cameras, scanners, copier, colour and laser printers.

3. COMPUTERS PROGRAM: for designing and evaluation MCQs**Cours**

Course Coordinator:

 Special techniques module : Dr/Mohamad Zaky Ali

 Positioning module :Dr/Mohamad Hasan Alam-Eldeen

Head of Department:

 Special techniques module :Prof. Dr. Nahla Mohamed Hasan

 Positioning module : Prof. Dr. Nahla Mohamed Hasan

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of Radiological Anatomy and dark room in MSc degree in Radiodiagnosis

Sohag University   **Faculty of Medicine**

1. Program on which the course is given: MSc degree in Radiodiagnosis.

2. Major or minor element of program: Major

3. Department offering the program: Radiodiagnosis

4. Department offering the course: Radiodiagnosis And Human Anatomy & Embryology

5. Academic year / level: 1st part.

6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title**:** Course Specification of Radiological anatomy and dark room in MSc degree in Radiodiagnosis
Code: RAD 0528-200.
Total hours

Module	Lectures	Practical/Surgical	Total hour	Credit
Radiological anatomy	7.5	---	7.5	0.5
Dark room	7.5	---	7.5	٠.٥

B. Professional Information

1. Overall Aims of Course

Radiological anatomy module:
By the end of the course the post graduate students should be able to have the professional knowledge of Radiological anatomy

Dark room module:

By the end of the course the post graduate students should be able to have the professional knowledge of dark room principles for radiodiagnosis.

2. Intended Learning Outcomes of Course (ILOs):

Radiological anatomy module:
 According to the intended goals of the faculty

a) Knowledge and Understanding:
  By the end of the course the student should be able to:
  a1. Mention the normal structure of different body systems.
  a2. Describe and clarifies the radiological anatomy of different body systems.
  a3. Define the normal variants of each body system.

b) Intellectual Skills:
  By the end of the course the student should have the ability to:
  b1. Analyze and identifies the normal anatomy and differentiate it from any abnormalities in the field of Radiodiagnosis.
  b2. Suggest, evaluate and criticize specialized problem-solutions based on the available data about radiological anatomy.

b3. Plan to improve performance in the field of Radiodiagnosis

c) Professional and Practical Skills:
By the end of the course the student should have the ability to:
c1. Mastery of the basic and modern radiological skills in the area of Radiodiagnosis.
c2. Planning for the development of professional practice and development of the performance of others.
c3. Orientation to develop new methods, tools and ways of professional practice.

d) General and Transferable Skills:
By the end of the course the student should have the ability to:
d1. Using information technology to serve the development of professional practice.
d2. Teaching others and evaluating their performance.
d3. The use of different sources for information and knowledge.
d4. Working in a team and team's leadership.
d5. Scientific meetings administration according to the available time.

Dark room module:

According to the intended goals of the faculty

a) Knowledge and Understanding:
By the end of the course the student should be able to:
a1. Mention basics, fundamentals and knowledge about dark room techniques in the field of Radiodiagnosis specialty.
a2. Mention types of cassettes and radiographic films used in radiodiagnosis.
a3. Illustrate types and steps of processing of radiographic films and Trace the impact of processing faults on the quality of radiographic films and on its diagnostic value.
a4. Explain the role of safe light in dark room.

b) Intellectual Skills:
By the end of the course the student should have the ability to:
b1. Use information about dark room techniques to make good processing of films.
b2. Assess risk in professional practices in the field of Radiodiagnosis
b3. Plan to improve performance in the field of dark room to produce high quality films.

c) Professional and Practical Skills:
By the end of the course the student should have the ability to:
c1. Mastery of the basic and modern radiographic skills in the area of dark room techniques.
c2. Evaluate and develop methods and tools existing in the area of dark room techniques.
c3. The use of technological methods to serve the professional practice.
c4. Planning for the development of professional practice and development of the performance of others.

d) General and Transferable Skills:
By the end of the course the student should have the ability to:
d1. Using information technology to serve the development of professional practice.
d2. Teaching others and evaluating their performance.
d3. The use of different sources for information and knowledge.
d4. Scientific meetings administration according to the available time.

3. 3. Course contents:
Radiological anatomy module:

Topic	No. of hours	Lecture	Tutorial/ Practical
-Head & Neck.	1	1	
-CNS.	1	1	
-Chest & Heart.	1	1	
-Abdomen & GIT.	1	1	
-Urinary Tract.	1	1	
-Male Genital System.	1	1	
-Female Genital System.	1	1	
-Musculoskeletal System.	0.5	0.5	
Total	7.5	7.5	
Credit	0.5	0.5	

Dark room module :

Topic	No. of hours	Lecture	Tutorial/ Practical
-Components & contents of dark Room.	1.5	1.5	
-Safe Light.	1.5	1.5	
-Radiological Image Production.	1.5	1.5	
-Film Processing.	1	1	
-Radiographic Film.	1	1	
-X-ray Cassette.	1	1	
	1	1	
Total	**7.5**	**7.5**	
Credit	**0.5**	**0.5**	

4. Teaching and Learning Methods
4.1. Lectures.
4.2. Gross and histopathology (Jars & slides).

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills

Assessment Schedule
Assessment 1 Final written exam   Week: 24
Assessment 2 Final Structured Oral Exam   Week: 24
Assessment 3 Attendance and absenteeism throughout the course

Weighting of Assessments

Final-term written examination	50	%
Final Structured Oral Exam	50	%
Total	100	%

Any formative only assessments Attendance and absenteeism throughout the course

6. **List of References**

   6.1- Essential Books (Text Books)

   - Fitzgerald M.J.T. (2016): The anatomical basis of medicine and surgery. By Standing s., ELIS H., Healy J. C., Johnson D. and Williams A. Gray's Anatomy. Elsevier; London, New York. Sydney. Toronto.

   6.2- Recommended Books

   - Stevens A. and Lowe J. S. (2015): Human histology; 5th edition; edited by Elsevier Mosby
   - Colored Atlas of anatomy.
   - Martini F. H., Timmons M. J. and McKinley M.P. (2015): Human anatomy; 10 edition.
   - Tortora G. J. and Nielson M.T. (2016): Principles of human anatomy 14 edition; Edited by John Wiley and Sons ; United states.
   - McMinn R.M.H. (2017): Lasts anatomy regional and applied chapter 7; 14 edition, edited by Longman group UK.

   6.4- Periodicals, Web Sites, … etc

   1-American Journal of radiology
   2-RSNA "radiographics –Radiology".

7. **Facilities Required for Teaching and Learning:**
   1. ADEQUATE INFRASTRUCTURES: including teaching places (teaching class, teaching halls,) comfortable desks, good source of aeration, bathrooms, good illumination and safety& security tools.
   2. TEACHING TOOLS: including screens, computers including CD (rw), data shows, projectors, flips chats, white boards, video players, digital video cameras, scanners, copier, color and laser printers.
   3. COMPUTERS PROGRAM: for designing and evaluation MCQs.

Course Coordinator: Dr. ohamed Al Badry

                 Dr. Mohamad Hasan Alam- Eldeen

Head of Department: Dr. Mohamed Al Badry

                 Prof. Dr. Nahla Mohamed Hasan

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of Radiological Physics in MSc degree in Radiodiagnosis

Sohag University   **Faculty of Medicine**

1. Program on which the course is given: MSc degree in Radiodiagnosis.

2. Major or minor element of program: Major

3. Department offering the program: Radiodiagnosis

4. Department offering the course: science

5. Academic year / level: 1st part.

6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title**:** Course Specification of Radiological physics in MSc degree in radiodiagnosis
Code: RAD 0528-200.
Total hours:

Module	Lectures	Practical/Surgical	Tutorials/Clinical	Total hour	Credit
Radiological physics	15	٣٠	---	45	٢

B. Professional Information

1. Overall Aims of Course

By the end of the course the post graduate students should be able to have the Professional knowledge of radiological physics.

2. Intended Learning Outcomes of Course (ILOs):

According to the intended goals of the faculty

a) Knowledge and Understanding:

By the end of the course the student should be able to:

a1. Mention the structure of matter and nuclear transformation reactions.
a2. Mention the structure of x-ray tube and x-ray production mechanisms.
a3. Define types of films, cassettes, grids and special x-ray equipments and describe the radiographic quality.
a4. Define and mention the physical principles of US,CT and MRI.

b) Intellectual Skills:

By the end of the course the student should have the ability to:

b1. Analyze and evaluate data and physical information in the field of Radiodiagnosis.
b2. Suggest, evaluate and criticize specialized problem-solutions related to X-ray, US, CT and MRI based on the available data.
b3. Plan to improve performance in the field of Radiodiagnosis depending on radiological and physical background.

c) Professional and Practical Skills:

By the end of the course the student should have the ability to:

c1. Mastery of the basic and modern physical skills in the area of Radiodiagnosis.
c2. The use of physical information to serve the radiological practice.

d) General and Transferable Skills:

By the end of the course the student should have the ability to:

d1. Using information technology to serve the development of professional practice.
d2. Teaching others and evaluating their performance.
d3. The use of different sources for information and knowledge.
d4. Working in a team and team's leadership.
d5. Scientific meetings administration according to the available time.

3. Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
-Background Radiation.	3	1	2
-Structure of matter.	3	1	2
-Nuclear Transformation.	3	1	2
-X- Ray Tube & Production.	3	1	2
-Intensifying Screens.	3	1	2
-Radiographic Film.	3	1	2
-Radiographic Quality.	3	1	2
-The Grid.	3	1	2
-Special X ray equipments.	3	1	2
-Beam Restricting Devices.	3	1	2
-MRI.	3	1	2
-CT.	3	1	2
-Ultrasonography.	3	1	2
-Detection of Radiation.	3	1	2
-Radio-Production.	3	1	2
Total	**45**	**15**	**30**
Credit	**2**	**1**	**1**

4. Teaching and Learning Methods

4.1- Lectures

4.2- Practical sessions

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills

Assessment Schedule

Assessment 1Final written exam   Week: 24

Assessment 2Final Structured Oral Exam   Week: 24

Assessment 3 Attendance and absenteeism throughout the course

Weighting of Assessments

Final-term written examination	50	%
Final Structured Oral Exam	50	%
Total	100	%

Any formative only assessments Attendance and absenteeism throughout the course

6. List of References

6.1- Course Notes
Department notes, lectures and handouts

6.2- Essential Books (Text Books)
1-Sutton-Text Book of radiology and imaging .

2- Gringer Text Book.

3- Fundamentals of diagnostic radiology,Williams E.brant .

6.3- Recommended Books
1-Christensens introduction to the physics of diagnostic radiology.

6.4- Periodicals, Web Sites, … etc
1-American Journal of radiology

2-RSNA "radiographices –Radiology:.

7. Facilities Required for Teaching and Learning:

1. ADEQUATE INFRASTRUCTURES: including teaching places (teaching class, teaching halls,) comfortable desks, good source of aeration, bathrooms, good illumination and safety& security tools.

2. TEACHING TOOLS: including screens, computers including CD (rw), data shows, projectors, flips chats, white boards, video players, digital video cameras, scanners, copier, colour and laser printers.

3. COMPUTERS PROGRAM: for designing and evaluation MCQs

Course Coordinator: Dr/Mohamad Alm El-Deen

Head of Department: Dr. Nahla Mohamed Hasan

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of General surgery in MSc degree in Radiodiagnosis

Sohag University   **Faculty of Medicine**

1 Program on which the course is given: MSc degree in radiodiagnosis.

2 Major or minor element of program: Minor

3 Department offering the program: radiodiagnosis

4 Department offering the course: General surgery department

5 Academic year / level: 2nd part.

6 Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title**:** Course Specification of General surgery in MSc degree in Radiodiagnosis.
Code: SUR 0528-200.
Total hours

Module	Lectures	Practical/ Surgical	Tutorials/ Clinical	Total hour	Credit
General surgery	15	30	---	45	٢

B. Professional Information

1. Overall Aims of Course

By the end of the course the postgraduate student should be efficiently able to have basic knowledge of the general surgical conditions

2. Intended Learning Outcomes of Course (ILOs):

a) Knowledge and Understanding:
By the end of the course the student should be able to :
a1. Mention the normal structure and function of different boy system and its relation to surgical approaches

b) Intellectual Skills:
By the end of the course the student should be able to :

b1. Interpret data to differentiate between surgical and non-surgical conditions

c) Professional and Practical Skills:
By the end of the course the student should be able to
c1. Master the basic and modern professional general surgical skills

d) General and Transferable Skills:
By the end of the course the student should be able to :

d1. Use of different sources for information and knowledge in the field of general surgery

3. Contents

Lectures	Total No. of hours	lectures	clinical
General Surgery			
Breast	7.5	2.5	5
Thyroid	7.5	2.5	5

Hernia	7.5	2.5	5
Differential diagnosis of abdominal mass	7.5	2.5	5
Types of wounds and management	7.5	2.5	5
Hemorrhage	3.5	1	2.5
Shock	4	1.5	2.5
Total	45	15	30
Credit	2	1	1

4. Teaching and Learning Methods
4.1- Illustrated lectures
4.2- Clinical rounds on patients (once /week foe 8 weeks)
4.3- Attendance in outpatients clinic (once/week for 8 weeks)
4.4- Case studies in department conference (once/week for 8 weeks)
4.5- Interactive presentations (lectures with discussion)

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2- Log book	- General transferable skills
5.3-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.4-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
5.5-OSCE	-Practical skills, intellectual skills General transferable skills

Assessments schedule:

Assessment 1…. Final written exam   Week: 24
Assessment 2 … Final Structured Oral Exam   Week: 24
Assessment 3…. Final OSCE ….   Week: 24

Weighting of Assessments

- Final Written Examination.   Separate exam.
    Passing in the written exam is a condition to attend the following exams:
    - Structured Oral Exam.   50 %
    - OSCE   50 %

Total   100%

Formative only assessment: simple research assignment, log book, attendance and absenteeism.

6. List of References
6.1- Course Notes
Notes of the department and practical notebook

6.2- Essential Books (Text Books)
6.3- Recommended Books
6.4- Periodicals, Web Sites, … etc
Microbiology
Immunology
http://mic.sgmjournals.org/

7. **Facilities Required for Teaching and Learning**
- Lecture rooms
- Round rooms
- Accessibility to hospital wards, clinics and emergency department
- Audio-visual teaching equipments (computers, data show projector, video, etc.)
- Models and mannequins
- Video tapes and scientific pictures archives.
- Radiology collections and archives.
-Library for the department.

Course Coordinator: Dr/Alaa Hasan Mohamed

Head of Department: Prof. Dr/ Nabil Yuosef Abo-El Dahab

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of Internal Medicine in MSc degree in Radiodiagnosis

Sohag University   **Faculty of Medicine**

1   Program on which the course is given: MSc degree in Radiodiagnosis.

2   Major or minor element of program: Minor

3   Department offering the program: Radiodiagnosis

4   Department offering the course: Internal medicine department

5   Academic year / level: 2nd part.

6   Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information
Title**:** Course Specification of Internal medicine in MSc degree in Radiodiagnosis.
Code: INT 0528-200.
Total hours

Module	Lectures	Practical/ Surgical	Tutorials/ Clinical	Total hour	Credit
Internal medicine	15	30	---	45	2

B. Professional Information
1. Overall Aims of Course
By the end of the course of Internal Medicine, the candidate should be able to:
1- Deal with common medical conditions on the basis of adequate history taking, physical examination interpretation of relevant supportive investigations and management.
2- Deal with acute medical emergencies safely and effectively.

2. Intended Learning Outcomes of Course (ILOs):
According to the intended goals of the faculty
a) Knowledge and Understanding:
By the end of the course the student should be able to:
a1. Grasp the spectrum of clinical symptomatology related to different Internal medicine disorders.
a2. Appreciate the clinical spectrum of common medical conditions with multisystem affection.
a3. Describe the concept of emergency management of acute medical disorders.

b) Intellectual Skills:
By the end of the course the student should have the ability to:
b1. Interpret the most important symptoms and signs of disease in Internal Medicine patients.
b2. Formulate appropriate management plans for individual patients presenting with the most common medical disorders.

b3. Make decisions regarding common clinical situations using appropriate problem solving skills.

b4. Interpret X-ray and CT films, blood gas and blood picture reports covering the most important medical conditions.

c) **Professional and Practical Skills:**

By the end of the course the student should have the ability to:

c1. Conduct a proper general examination and identify normal and major abnormal physical signs.

c2. Conduct proper regional examination of the thorax and abdomen by inspection, palpation, percussion and auscultation to identify:
- Surface anatomy of internal organs.
- Normal physical signs.
- Major abnormal physical signs.

c3. Interpret the significance and relevance of abnormal physical signs.

c4. Identify the appropriate supportive investigations relevant to a particular patient and adequately interpret the results.

c5. Integrate the patient's symptomatology, historic data, abnormal physical signs and investigations into a comprehensive differential diagnosis.

c6. Identify adequate logistics for further patient assessment and management.

c7. Become acquainted with specialist approach to the diagnosis of common medical conditions related to the specialty.

c8. Get exposed to less common medical disorders within the domain of specialty.

c9. Get updated information about and demonstrations on modern diagnostic tools within the specialty.

c10. Get acquainted with special therapeutic and interventional techniques related to the specialty.

d) **General and Transferable Skills:**

By the end of the course the student should have the ability to:

d1. Presentation, analyzing and solving of clinical problems .

3. **Contents**

Internal medicine module:

1-Cardiology Teaching

The cardiology curriculum is designed so that at the end of the course the candidate will be able to:

1- Know the principles of cardiovascular anatomy and physiology which are relevant to cardiovascular diseases.

2- Know the basic patho-physiological and structural alteration that occur in cardiovascular diseases.

3- Know the important causes, presenting features (symptoms, signs and alteration in specific investigations) that may occur in each of the following conditions:
   o -Heart failure (acute, chronic, systolic, diastolic)
   o -Rheumatic fever, rheumatic heart disease including the affection of the pericardium and cardiac valves.
   o -The interaction between the lung and the heart and causes Clinical presentation and manegment of pulmonary embolism and cor pulmonale)

- o -Properties, uses, and side effects of important cardiovascular drugs used in treatment of common diseases.

4- **Skills**: The graduate should be able to:
   - Elicit normal and abnormal cardiovascular signs such as general features, attitude, facies, BP arterial and venous pulse,……………
   - Elicit normal and abnormal physical signs in chest and abdominal examination that may cause or accompany or result from cardiac disease such as hepatomegaly, splenomegaly, ascites,………
   - Can perform successfully basic life support and cardiac resuscitation (cardiac message, mouth to mouth breath) either alone or with a team.
   - He should be able to interpret normal and abnormal cardiac shadows in chest Xray.

Cardiology teaching (Methodology):
A combination of strategies are used to reach the above mentioned objects, this include lectures, clinical and self teaching.

   1-Lectures : lectures are given to accompany the clinical and the practical teaching. They are designed to cover the sailent features, difficult aspects, recent advances not usually incorporated in students text books and specific personal practices of the following subjects:

A-Lectures)

Topics	No of lectures
Cardiovascular Symptoms and signs	1
Rheumatic fever	1
Valvular diseases	1
Cardiomyopathy:. -dilated cardiomyopathy	1
Heart failure -Systolic Heart Failure -Diastolic Heart Failure -High cardiac output heart failure	1
Pulmonary embolism	1

B- Practical teaching (cardiology)

Practical Topics:.
1-Cardiovascular history taking
2-Cardiac examination (including pulse BP, and Jugular venous pressure comment)
3-Cardiac valve lesions
4-Rheumatic heart disease

5-Infective endocarditis

6-Heart failure

7-Cardiomyopathy

  3-Self teaching: This include:
  - Personal or group ward responsibilities including follow up of inpatients in the department.
  - Cardiology outpatient sessions in which the student examine the patients with the assistant lecturer to recognize the presenting

2-Endocrinology teaching

The curriculum consisits of an integrated theortical, clinical and practical training courses.

Terminal objectives are:

  1-To know the principles of the physiology of endocrinal system

  2-To know the basic pathophysiological and structural alteration changes that occur in common endocrinal diseases.

  3-To know important presenting features of endocrinal disease**s**

  Endocrinology teaching (Methodology)

  A combination of stratiegies are used to reach the above mentioned objectives. This include:

A-Lectures

Topics	No of lectures
Secondry hypertension	1
Disorders of the anterior pituitary and the hypothalamus	1
Disorders of the thyroid gland Hypothyroidism Hyperthyroidism	1
Pheochromocytoma	1
Diabetes mellitus	2

 -Nephrology teaching

Topics	No of lectures
Structure and function	1
Disturbed renal function:. Acute renal failure Chronic renal failure	1 1
Urinary tract infections:.	1
Investigations of renal disease	1

-Gastroenterology and Hepatology teaching

A-Lectures

Topics	No of

	lectures
Gastroesophageal junction disorders	1
Peptic ulcer and gastritis	1
Inflammatory bowel diseases	1
Approach to the patient with hepatic disease	1
Evaluation of liver function	1
Jaundice	1
Hepatitis	1
Hepatocellular carcinioma Lung abscess	1
Cirrhosis and Upper GI bleeding	1
Portal hypertension	1
Chronic pancreatitis, cancer pancreas	1
Hepatocellular failure	1
Ascites and peritoneal diseases	1

Rheumatology

Rheumatoid arthritis	1 hour
Gout arthritis	1 hour
Systemic sclerosis	1 hour

-Respiratory disease teaching

A-Lectures

Topics	No of lectures
Pneumonias	1
Suppurative syndrome	1
Tuberculosis	1
Lung malignancy	1
Pleural effusion	1

4. Teaching and Learning Methods

4.1- Illustrated lectures

4.2- Clinical rounds on patients (once /week foe 8 weeks)

4.3- Attendance in outpatients clinic (once/week for 8 weeks)

4.4- Case studies in department conference (once/week for 8 weeks)

4.5- Interactive presentations (lectures with discussion)

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2- Log book	- General transferable skills
5.3-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.4-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
5.5-OSCE	-Practical skills, intellectual skills General transferable skills

Assessments schedule:

        Assessment 1…. Final written exam   Week: 24

        Assessment 2 … Final Structured Oral Exam Week: 24

        Assessment 3…. Final OSCE ….   Week: 24

Weighting of Assessments

- Final Written Examination.   Separate exam.

        Passing in the written exam is a condition to attend the following exams:

  - Structured Oral Exam.   50 %
  - OSCE   50 %

Total   100%

        Formative only assessment: simple research assignment, log book, attendance and absenteeism.

6. List of References

6.1- Essential Books (Text Books)

   - Kumar and Clarke Textbook of Medicine; Parveen Kumar and Richard Clark; Blackwell Science; 9th edition, 2018

   -Hutchison's Clinical Methods; Robert Hutchison; Harry Rainy; 24st edition;2018

6.2- Recommended Books

   - Goldman-Cecil Textbook of Medicine;25th edition, 2018.

   - Harrisson'sprincipales of internalmedicine,20th edition, 2018.

6.3- Periodicals, Web Sites, … etc

7. Facilities Required for Teaching and Learning

        - Lecture rooms

        - Round rooms

        - Accessibility to hospital wards, clinics and emergency department

        - Audio-visual teaching equipments (computers, data show projector, video, etc.)

        - Models and mannequins

        - Video tapes and scientific pictures archives.

        - Radiology collections and archives.

        -Library for the department.

Course Coordinator: Dr. Mohamed Mustafa Ahmed Malak**.**

Head of Department: Prof. Usama Ahmed Arafa.

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013**, Revised: 1/12/2018**

Course Specification of Pathology in MSc degree in Radiodiagnosis

Sohag University   **Faculty of Medicine**

1 Program on which the course is given: MSc degree in Radiodiagnosis

2 Major or minor element of program: Minor

3 Department offering the program: Radiodiagnosis

4 Department offering the course: Pathology

5 Academic year / level: first part.

6 Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Course Specification of Pathology in MSc degree in Radiodiagnosis
Total hours:
Code: PAT 0528-200.
Total hours:

Module	Lectures	Practical/Surgical	Tutorials/Clinical	Total hour	Credit
Pathology	15	٣٠	---	45	2

B. Professional Information

1. Overall Aims of Course

By the end of the course the post graduate students should be able to have the professional knowledge of the pathology of medical diseases.

2. Intended Learning Outcomes of Course (ILOs):

According to the intended goals of the faculty

a) Knowledge and Understanding:

By the end of the course the student should be able to:

a1. Develop understanding basis of general and systemic pathology.

a2. Become familiar with etiology, pathogenesis and pathologic manifestation of diseases.

a3. Be able to correlate gross and histopathology with the clinical basis of diseases.

a4. Have sufficient information about the fate and complications and prognosis of different diseases.

a5. By the end of the course the student should be able to provide core knowledge of processes affecting organ system, with an emphasis on understanding mechanisms of disease.

a6. Define and discuss the main disease categories that may affect the body (general pathology) & correlates radiological & songraphic picture with histopathologic pictures.

b) Intellectual Skills:

By the end of the course the student should have the ability to:

b1. Interpret in a professional manner a pathology report.

b2. Able to solve pathological problems

b3. Data interpretation

c) Professional and Practical Skills:

By the end of the course the student should have the ability to:

c1. Identify the macroscopic and microscopic criteria of the altered structure (pathology) of the body and its major organs and systems that are seen in various diseases.

c2. Identify various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, and degenerative) and mechanisms of diseases and the way through which they operate in the body (pathogenesis).

d) General and Transferable Skills:

By the end of the course the student should have the ability to:

d1. Appreciate the importance of life long learning and show a strong commitment to it.

d2. Use the sources of biomedical information to remain current with the advances in knowledge and practice.

d3. Write a report commenting on a pathological specimen.

d4. Use data analysis and communication skills

d5. Respect, be willing to work through systems, collaborate with other members of the students.

d6. Be reliable and responsible in fulfilling obligations.

d7. Effectively utilize various computer based instruction tools and E-learning of Pathology and utilize a variety of computer-based self assessment tools.

d8. Accept the limitation in knowledge and always strive for excellence.

3. Course contents:

Topic	No. of hours	Lecture	Practical
1- General Pathology:	4.5	1.5	3
2- Heart:	4.5	1.5	3
3- Blood vessels:	4.5	1.5	3
4- Respiratory system:	4.5	1.5	3
5- Gastrointestinal tract:	4.5	1.5	3
6- Kidney:	4.5	1.5	3
7- Male & female genital systems:	4.5	1.5	3
8- The musculoskeletal system:	4.5	1.5	3
9- Nervous system:	4.5	1.5	3
10-Diseases of blood, lymph nodes, and spleen:	4.5	1.5	3
Total	45	15	30
Credit	2	1	1

4. Teaching and Learning Methods

       4.1. Lectures.

       4.2. Gross and histopathology (Jars & slides).

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2- Log book	- General transferable skills

5.3-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.4-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills

Weighting of Assessments
       Assessment 1……..Final written exam…..   Week: 24
       Assessment 2……..Final Structured Oral Exam …..Week: 24

Assessment Schedule

Final written examination	50	%
Final Structured Oral Exam	50	%
Total	100	%

Formative only assessments: attendance and absenteeism, assignment

6. **List of References**
       6.1- Essential Books (Text Books):
         • Muir's text book of pathology, 15th egition,2014
         • Robbins pathologic basis of diseases, 10th edition, 2017
       6.2- Recommended Books:
         • Rosi &Ackerman text book of pathology, 11th edition, 2017
         • Sternberg text book of pathology, 6th edition,2015
       6.3- Periodicals, websites:
         American journal of pathology
         Pathology journal
         Human pathology jounal
         Web Sites: http://www.ncbi.nlm.nih.gov/pubmed/

7. **Facilities Required for Teaching and Learning:**
     a. Library & textbooks.
     b. Computer & data show.
     c. Internet connection.

Course Coordinator: Fatma El Zhraa Salah El-Deen

Head of Department: Dr. Afaf Al Nashar

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specifications of Applied biostatistics (with computer use) and Research Methodology in Master degree of Radiodiagnosis

Sohag University   **Faculty of Medicine**

1. Program title : Master degree in Radiodiagnosis
2. Major/minor element of the program : Minor
3. Department offering the course: Community Medicine and public Health Dep.
4. Department offering the program: Radiodiagnosis
5. Academic year /level : 1st part
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Master degree in Radiodiagnosis Statistics and Computer use for health services **and Research Methodology**

Code: COM 0528-200

Total Hours:

Title	Lectures	Practical/ surgical	Total	credit
Applied biostatistics and computers & Research methodology	15	30	45	2

B. Professional Information

Applied Biostatistics Module:

1. Overall Aims of Course

a. To influence the students to adopt an analytical thinking for evidence based medicine.

b. To use precisely the research methodology in researches and computer programs SPSS, Epi Info and Excel in data analysis.

Research Methodology Module:

1. Overall Aims of Course

The aim of this course is to provide the postgraduate student with the advanced medical knowledge and skills essential for the mastery of practice of specialty and necessary to provide further training and practice in the field of Public health and Community Medicine through providing:

1. Recent scientific knowledge essential for the mastery of practice of Public Health and Community Medicine according to the international standards.
2. Skills necessary for preparing for proper diagnosis and management of community problems, skills for conducting and supervising researches on basic scientific methodology.

3. Ethical principles related to the practice in this specialty.
4. Active participation in community needs assessment and problems identification.
5. Maintenance of learning abilities necessary for continuous medical education.
6. Upgrading research interest and abilities.

2. Intended Learning Outcomes of Courses (ILOs)
Applied Biostatistics Module:
a) Knowledge and understanding:
   By the end of the course, the student is expected to be able to:
   a1. Mention different programs of analysis of data and statistical packages

   a2. Define the recent advances of sources of data and methods of collection.

   a3. Summarize data, construct tables and graphs

   a4. Calculate measures of central tendency and measures of dispersion

   a5. Describe the normal curves and its uses

   a6. Illustrate selected tests of significance and the inferences obtained from such tests

   a7. Illustrate selected tests of significance for parametric and non parametric inferences

   a8. Identify factor analysis and discrimination analysis.

b) Intellectual Skills
   By the end of the course, the student is expected to be allowed to:
   b1. Mention how to collect and verify data from different sources
   b2. Interpret data to diagnose prevalent problems Radiodiagnosis
c) Professional and Practical Skills:
   By the end of the course, the student is expected to practice the following:
   c1. Perform recent advanced technological methods in collection, analysis and interpretation of data and in management of prevalent problems in Radiodiagnosis
d) General and Transferable Skills:
   By the end of the course, the student is expected to be able to:
   d1. Use appropriate computer program packages.
   d2. Use of different sources for information and knowledge about biostatistics.

Research Methodology Module:
2. Intended Learning Outcomes of Courses (ILOs)
a) Knowledge and understanding:
   By the end of the course, the student is expected to be able to:
   a1. Define the recent advances of screening tests pertinent to selected diseases and the at-risk approach in the application of screening tests.
   a2. Explain the usefulness of screening tests, and calculate sensitivity, specificity, and predictive values.

   a3. Describe the study design, uses, and limitations.

   a4. Mention the recent advances of principles, methodologies, tools and ethics of scientific research.

a5. Explain the strategies and design of researches.

a6. Describe bias and confounding.

a7. Describe sampling techniques and list advantages of sampling

a8. Identify principles of evidence based medicine.

b) Intellectual Skills

By the end of the course, the student is expected to be able to:

b1. Conduct research studies that adds to knowledge.

b2. Formulate scientific papers in the area of public health and community medicine

b3. Innovate and create researches to find solutions to prevalent community health problems

b4. Criticize researches related to public health and community medicine

c) Professional and Practical Skills:

By the end of the course, the student is expected to be able to:

c1. Enumerate the basic and modern professional skills in conducting researches in the area of public health and community medicine.

c2. Design new methods, tools and ways of conducting researches. .

d) General and Transferable Skills:

By the end of the course, the student is expected to be able to:

d1. Use of different sources for information and knowledge to serve research.

d2. Work coherently and successfully as a part of a team and team's leadership in conducting researches and field studies.

3. Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Applied Biostatistics Module:			
Recent advances in collection, analysis and interpretation of data	3	1	2
-Details of Tests of significance: Proportion test	3	1	2
-Chi-square test	1.5	.5	1
-Student T test	1.5	.5	1
-Paired T test	1.5	.5	1
-Correlation	1.5	.5	1
-Regression	2	1	1
-ANOVA test	3	1	2
-Discrimination analysis	3	1	2
-Factor analysis	3	1	2
-Parametric and non parametric tests	4.5	.5	4
Research Methodology Module:			
Details of epidemiological studies (case control, cohort and cross sectional)	3	1	2
Clinical trials, Quasi experimental study	3	1	2
Bias and errors	2	1	1
Setting a hypothesis	1.5	.5	1
Recent advances in screening	1.5	.5	1

	3	1	2
- Evidence – based Medicine: Concept and examples Applicability Scientific writing: A protocol A curriculum	3	1	2
Setting an objective - Critical thinking	2	1	1
Formulation of papers	1.5	.5	1
Total hours	**45**	**15**	**30**
Total Credit hours	**2**	**1**	**1**

4. Teaching and Learning Methods
   4.1- Lectures
   4.2- Practical sessions
   4.3- Computer search assignments
   4.4- Computer application

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exams: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills, - Practical skills, intellectual skills
5.3-Structured Oral Exams	- Knowledge
5.4Computer search assignment	- general transferable skills, intellectual skills

Assessment Schedule
   Assessment 1….Final written exam   Week: 24
   Assessment 2…..Final oral exam   Week: 24
   Assessment 3   Attendance and absenteeism throughout the course
   Assessment 4   Computer search assignment performance throughout the course

Weighting of Assessments

Final-term written examination	50%
Final oral Examination	50%
Total	100%

Formative only assessments: attendance and absenteeism and Computer search assignments performance.

6. List of References
Applied Biostatistics Module:
6.1- Essential Books (Text Books)
1-Maxy-Rosenau Public health and preventive medicine, 2008.,Robert Wallace, publisher McGraw-Hill Medical; 15 edition.
6.2- Recommended Books

1- Dimensions of Community Based projects in Health Care, 2018. Arxer, Steven L., Murphy, John W.; 1st edition.
2- Parks Text Book of Preventive & Social Medicine. 2017., K. Park.
 BanarsidasBhanot Publishers; 23 edition.
3- Clinical Epidemiology: The Essentials, 2013, Robert F., Suzanne W. Fletcher, Grant S., publisher Lippincott Williams & Wilkins; 5 edition.

6.3- Periodicals, Web Sites, …etc
1-American Journal of Epidemiology
        2-British Journal of Epidemiology and Community Health
         3- WWW. CDC and WHO sites

Research Methodology Module:
1-Maxy-Rosenau Public health and preventive medicine, 2008.,Robert Wallace, publisher McGraw-Hill Medical; 15 edition.

6.2- Recommended Books
1- Dimensions of Community Based projects in Health Care, 2018. Arxer, Steven L., Murphy, John W.; 1st edition.
2- Parks Text Book of Preventive & Social Medicine. 2017., K. Park.
 BanarsidasBhanot Publishers; 23 edition.
3- Clinical Epidemiology: The Essentials, 2013, Robert F., Suzanne W. Fletcher, Grant S., publisher Lippincott Williams & Wilkins; 5 edition.

6.3- Periodicals, Web Sites, …etc
1-American Journal of Epidemiology
2-British Journal of Epidemiology and Community Health
 3- WWW. CDC and WHO sites

7. Facilities Required for Teaching and Learning:
Applied Biostatistics Module:
- Adequate conditioned space for staff and assistants.
- Adequate conditioned teaching facilities.
- Audiovisual Aids: Data show, overhead and slide projectors and their requirements.

Research Methodology Module:
- 1-ADEQUATE INFRASTRUCTURE: including teaching places (teaching class, teaching halls, teaching laboratory), comfortable desks, good source of aeration, bathrooms, good illumination, and safety & security tools.

- 2- TEACHING TOOLS: including screens, computers including cd (rw), data shows, projectors, flip charts, white boards, video player, digital video camera, scanner, copier, color and laser printers.

Course Coordinator: Dr/ Rasha Abd El Hameed

Head of Department: Prof/ Ahmed Fathy Hamed

Date: Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of Diagnostic Radiology in MSc degree in Radiodiagnosis

Sohag University   **Faculty of Medicine**

1. Program on which the course is given: MSc degree in Radiodiagnosis.

2. Major or minor element of program: Major

3. Department offering the program: Radiodiagnosis

4. Department offering the course: Radiodiagnosis

5. Academic year / level: 2nd part.

6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Course Specification of diagnostic radiology in MSc degree in Radiodiagnosis
Code: RAD 0528-200.
Total hours:

Module	Lectures	Practical/ Surgical	Tutorials/ Clinical	Total hour	Credit
Diagnostic radiology	210	٣٠٠	---	510	24

B. Professional Information

1. Overall Aims of Course

By the end of the course the post graduate students should be able to have the professional knowledge of radiology.

2. Intended Learning Outcomes of Course (ILOs):

According to the intended goals of the faculty

a) Knowledge and Understanding:

By the end of the course the student should be able to:

a1. Mention the basics, normal anatomy and normal radiological signs of diagnostic radiology.

a2. Mention different congenital anomalies in the body.

a3. Describe the radiological findings, abnormalities and differential diagnosis for different body diseases.

a4. Learn different radiological interventional procedures.

b) Intellectual Skills:

By the end of the course the student should have the ability to:

b1. Interpret data acquired through clinical data and imaging findings to reach for diagnosis or a differential diagnosis for each problem.

b2. Select from different imaging modalities the ones that help reaching a final diagnosis for different problems..

b3. Formulate scientific papers in the area of diagnostic radiology

b4. Plan to improve performance in the field of diagnostic radiology.

c) Professional and Practical Skills:

By the end of the course the student should have the ability to:

c1. Mastery of the basic and modern professional skills in the area of Radiodiagnosis.

c2. Evaluate and develop methods and tools existing in the area of Radiodiagnosis.

c3. The use of technological methods to serve the professional practice.

d) General and Transferable Skills:

By the end of the course the student should have the ability to:

d1. Present reports in seminars effectively.

d2. Teach others and evaluating their performance.

d3. Mange scientific meetings administration according to the available time .

3. Course contents:

Topic	No. of hours	Lecture	Practical
1- Cardiac system: 1.1. Normal cardiac radiology. 1.2. Congenital heart diseases. 1.3. Rheumatic heart diseases. 1.4. Ischemic heart diseases. 1.5. Cardiomyopathy. 1.6. Cardiac tumors. 1.7. Pericardial diseases and pericardial tumors. 1.8. Cardiac & pericardial trauma.	60	20	40
2- Vascular system: 2.1. Arterial imaging. 2.2. Venous imaging. 2.3. Interventional procedures.	30	10	20
3- Respiratory system: 3.1. Normal chest radiology & varients. 3.2. Bronchitis and bronchial athma. 3.3. Bronhiectasis. 3.4. Pulmonary infections. 3.5. Diffuse lung diseases. 3.6. Occupational lung diseases. 3.7. Emphysema. 3.8. Lung collapse and consolidation. 3.9. Lung tumors. 3.10. Pulmonary edema. 3.11. Pleural diseases. 3.12. Mediastinal masses. 3.13. Pediatric chest diseases. 3.14. Diaphragmatic lesions. 3.15 Chest wall disorders. 3.16. Chest trauma.	60	20	40
4- Gastrointestinal tract: 4.1. Normal oro and hypopharyngeal radiology. 4.2. Oro and hypopharyngeal diseases. 4.3. Normal oesophageal radiology. 4.4. Inflammatory oesophageal diseases. 4.5. Oesophageal tumors. 4.6. Oesophageal strictures. 4.7. Oesophageal motility disorders. 4.8. Miscellenous oesophageal lesions.	60	20	40

4.9. Normal gastric radiology. 4.10. Gastritis & duodenitis. 4.11. Peptic ulcers. 4.12. Gastric & duodenal tumors. 4.13. Congenital gastric & duodenal disorders. 4.14. Miscellenous gastric & duodenal disorders. 4.15. Radiology of post operative stomach. 4.16. Imaging in acute abdomen. 4.17. Normal small intestinal radiology. 4.18. Normal colonic radiology. 4.19. Congenital anomalies of the intestine. 4.20. Inflammatory bowel diseases. 4.21. Obstructive bowel diseases. 4.22. Ischemic bowel diseases. 4.23. Small and large intestinal tumors. 4.24. Intestinal polyposis. 4.25. Miscellenous intestinal disorders. 4.26. Normal hepatic radiology. 4.27. Liver cirrhosis and portal hypertension 4.28. Hepatic tumors. 4.29. Diffuse liver diseases. 4.30. Infective liver diseases. 4.31. Liver trauma. 4.32. Miscellenous hepatic disorders. 4.33. Normal biliary radiology. 4.34. Congenital biliary anomalies. 4.35. Cholecystitis. 4.36. Cholelisthesis. 4.37. Imaging of jaundice. 4.38. Interventional biliary procedures. 4.39. Miscellenous biliary disorders. 4.40. Normal pancreatic radiology. 4.41. Congenital pancreatic disorders. 4.42. Pancreatitis. 4.43. Pancreatic tumors. 4.44. Pancreatic cysts. 4.45. Pancreatic trauma. 4.46. Miscellenous pancreatic disorders. 4.47. Normal splenic radiology. 4.48. Congenital splenic disorders. 4.49. Splenic trauma. 4.50. Imaging of splenomegaly. 4.51. Splenic infections. 4.52. Splenomegaly & portal hypertension. 4.53. Miscellenous splenic disorders. 4.54. Peritonitis. 4.55. Peritoneal tumors. 4.56. Imaging in ascites. 4.57. Retroperitoneal disorders. 4.58. Abdominal and subphrenic abscesses.			

4.59. Leaking abdominal aortic aneurysm. 4.60. Normal radiology of salivary glands. 4.61. Inflammatory salivary disorders. 4.62. Salivary glands tumors. 4.63. Miscellenous salivary glands disorders. 4.64. Normal adrenal radiology. 4.65. Adrenal masses. 4.66. Adrenal cysts.			
5- Urinary tract: 5.1. Normal UT radiology. 5.2. Urolithiasis. 5.3. Hydronephrosis & pyonepherosis. 5.4. UT tumors. 5.5. Pyelonephritis and cystitis. 5.6. UT infective lesions. 5.7. UT tumors. 5.8. Renal & UB trauma. 5.9. Renovascular hypertension. 5.10. Imaging in haematuria. 5.11. UB outflow obstruction. 5.12. Urethral strictures. 5.13. Urethral tumors. 5.14. Urethral trauma. 5.15. UT interventional procedures.	40	20	20
6- Male genital system: 6.1. Normal radiology of male genital system. 6.2. Testicular trauma. 6.3. Testicular tumors. 6.4. Testicular infections. 6.5. Varicocele & torsion. 6.6. Hydrocele. 6.7. Imaging in male infertility. 6.8. Prostatic tumors. 6.9. Prostatic infections. 6.10. Miscellenous prostatic disorders. 6.11. Imaging in impotence.	30	10	20
7- Female genital system: 7.1. Normal radiology of female genital system. 7.2. Ovarian tumors and cysts. 7.3. Ovarian torsion. 7.4. Ovulatory disorders. 7.5. Abnormal uterine bleeding. 7.6. Uterine tumors. 7.7. Congenital uterine anomalies. 7.8. Miscellenous uterine disorders. 7.9. Pregnancy and its complications. 7.10. Imaging in female infertility. 7.11. Tubo-ovarian abscess. 7.12. Fetal anomalies. 7.13. Interventional procedures.	30	10	20

8- Musculoskeletal system: 8.1. Normal muscloskeletal radiology. 8.2. Osteomyelitis & spondylitis. 8.3. Arthritis. 8.4. Metabolic bone disorders. 8.5. Congenital bone and spinal disorders. 8.6. Endocrinal bone disorders. 8.7. Bone & spinal trauma. 8.8. Fractures and dislocations. 8.9. Bone tumors & tumors like disorders. 8.10. Bone infarctions. 8.11. Miscellenous bone disorders. 8.12. Scoliosis and khyphosis. 8.13. Spinal cord tumors. 8.14. Spinal cord vascular disorders. 8.15. Spinal cord degenerative disorders. 8.16. Spinal cord inflammatory disorders.	30	10	20
9- Central nervous system: 9.1. Normal CNS radiology. 9.2. Imaging in trauma 9.3. CNS Infections. 9.4. CNS vascular disorders & stroke. 9.5. CNS congenital anomalies. 9.6. CNS tumors. 9.7. CNS degenerative disorders. 9.8. Miscellenous CNS disorders. 9.10. Imaging in hydrocephalus.	**40**	**20**	**20**
10- Lymphatic disorders: 10.1. Imaging in lymphoma. 10.2. Imaging in lymphodema.	15	10	5
11- Paranasal sinuses: 11.1. Normal PNS radiology. 11.2. Sinusitis. 11.3. Mucoceles. 11.4. PNS tumors. 11.5. Polyposis. 11.6. PNS trauma. 11.7. Miscellenous PNS disorders. 11.8. Nasopharyngeal disorders.	30	10	20
12- Orbit: 12.1. Normal orbital radiology. 12.2. Imaging in proptosis. 12.3. Orbital trauma. 12.4. Orbital tumors. 12.5. Orbital vascular disorders. 12.6. Inflammatory orbital disorders. 12.7. Congenital orbital anomalies. 12.8. Miscellenous orbital disorders.	20	10	10

13- Ear: 13.1. Normal radiology of the ear. 13.2. Congenital anomalies of ear. 13.3. Imaging in trauma. 13.4. Imaging in tennitus 13.5. Imaging in hearing loss. 13.6. Otitis media and complications. 13.7. Ear tumors. 13.8. Miscellenous ear disorders.	**20**	**10**	**10**
14- Neck and larynx: 14.1. Normal neck and laryngeal radiology. 14.2. Imaging of neck swellings. 14.3. Laryngeal trauma. 14.4. Laryngeal tumors. 14.5. Cord lesions and paralysis.	25	**20**	5
15- Breast: 15.1. Normal breast radiology. 15.2. Breast masses. 15.3. Imaging in breast discharge.	20	10	10
Total	510	210	300
Credit	24	14	10

4. Teaching and Learning Methods

4.1. Lectures.

4.2. Gross and histopathology (Jars & slides).

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2- Log book	- General transferable skills
5.3-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.4-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
5.5-OSCE	-Practical skills, intellectual skills General transferable skills

Assessments schedule:

Assessment 1…. log book (formative exam)　Week: 80

Assessment 2…. Final OSCE ….　　　　　　Week: 96

Assessment 3…..Final written exam ……..　Week: 96

Assessment 4 … Final Structured Oral Exam　Week: 96

Weighting of Assessments

- Final Written Examination.　　　Separate exam.

　　Passing in the written exam is a condition to attend the following exams:

- Structured Oral Exam.　　　　50 %
- OSCE　　　　　　　　　　　50 %

Total   100%

 Formative only assessment: simple research assignment, log book, attendance and absenteeism.

6. **List of References**

    6.1- Course Notes

    Department notes, lectures and handouts

    6.2- Essential Books (Text Books)

    1-Sutton-Text Book of radiology and imaging .

    2- Gringer Text Book.

    3- Fundamentals of diagnostic radiology,Williams E.brant .

    6.3- Recommended Books

    1-introduction to vascular imaging –Zwiebel.

    2- primer of diagnostic imaging –Ralph weissleder.

    6.4- Periodicals, Web Sites, … etc

    1-American Journal of radiology

    2-RSNA "radiographices –Radiology:.

7. **Facilities Required for Teaching and Learning:**

  a. Library & textbooks.

  b. Computer & data show.

  c. Internet connection.

Course Coordinator: Dr. Mohamad Hasan Alam-Eldeen

Head of Department: Prof. Dr. Nahla Mohamed Hasan

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018