Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

T5. COURSE REPORT
(CR)
Course title: Medical Radiation Physics (2)
Course code: (4-403492)

First Semester

Academic Year 1438-1439H -2017-2018

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A separate Course Report (CR) should be submitted for every course and for each section or campus location where the course is taught, even if the course is taught by the same person. Each CR is to be completed by the course instructor at the end of each course and given to the program coordinator

A combined, comprehensive CR should be prepared by the course coordinator and the separate location reports are to be attached.

Course Report

For guidance on the completion of this template refer to the NCAAA handbooks.

Institution Umm Al-Qura University	Date of CR 4/1/2018
College/ Department: Applied Sciences College- Physics department	

A Course Identification and General Information

1. Course title **Medical Radiation Physics (2)** Code # **4-403492** Section #						
2. Name of course instructor Dr.Taha Al-Fawwal Location: Main campus- Al-Abdia						
3. Year and semester to which this report applies. 1438-1439 H- 1st Semester						
4. Number of students starting the course? 3 Students completing the course? 3						
5. Course components (actual total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	45		30			75
Credit	3		1			4

B- Course Delivery

1. Coverage of Planned Program			
Topics Covered	**Planned Contact Hours**	**Contact Actual Hours**	**Reason for Variations if there is a difference of more than 25% of the hours planned**
Naturally Occurring Radioactivity 1- Cosmic Radiation 2- Cosmogenic Radiation 3- Premordial Radiation –three series Types of exposure : External exposures and Internal exposure	6	6	
External dosimetry operational radiation quantities ICRU sphere phantom Ambient dose equivalent Directional dose equivalent Personals dose equivalent ISO phantom Calibration of thermo luminscence dosimeters protection radiation quantity Equivalent and effective doses Relation ship between operational radiation quantities and protection radiation quality	10	10	
Patient dosimetry in diagnostic X-ray Dosimetric quantities used in diagnostic radiology Air kerma (IAK)C-ray tube out put Air kerma product (KAP) Computed tomography (CT) air kerma indices (Fluroscopy) KAP Air Kerma length product (CT) Quantities for CT dosimetry and procedures for dose measurements	10	10	

Models and phantoms of the human body Idealized geometries representing occupational exposures calculating protection quantities in using software and dose conversion factor. Biokinetics of radionuclides in the body, Inhalation, Ingestion , **Internal dosimetry of radionuclides** Absorption through intact skin , ingestion, inhalation and intravenous	10	10	
MIRD Method for internal dosimetry Methods of medical internal dosimetry Accumulated activity Equllibrium dose constant Radiation energy calculation Source and target dose calculation S-Factor Whole body counter **Decontamination** **Defination and types of contamination** **Decontamination reduction factor** **Skin equivalent dose calculation** **Methods of measurement of contamination**	9	9	

2. Consequences of Non Coverage of Topics

For any topics where the topic was not taught or practically delivered, comment on how significant you believe the lack of coverage is for the course learning outcomes or for later courses in the program. Suggest possible compensating action.

Topics (if any) not Fully Covered	Effected Learning Outcomes	Possible Compensating Action

3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment for each LO	Summary analysis of assessment results for each LO
1	1. Learning fundamentals of Naturally Occurring Radioactivity and Types of exposure. 2.Learning operational radiation quantities 3. Learning protection radiation quantities 3. Understand Calibration of thermo luminscence dosimeters 4. Understand students different methods of medical internal dosimetry 7. Learning fundamentals of Decontamination concept and reduction factor 8- understanding the importance of Skin equivalent dose calculation	1. Home work 2. Interactive discussion 3. Short exam1 4. Short exam2 5. Final exam	All pass in short exam 1, short exam2 and final exam
2	1. Analysis and explain natural variations of radiation background 2.Develop ability to think creatively to find a relationship between operational radiation quantities and protection radiation quantities 3. Develop ability to think creatively in the different methods of medical internal dosimetry. 4. Develop decontamination	1.Oral questions 2.Presentations 3.Quizzes 4. Problem solving	Poster presentation

	procedures 8- learning understanding the importance of Skin equivalent dose calculation 5- Develop ability to think creatively in penetration of different types of radiations.		
3	.1. Develop ability to work independently 2. Develop ability to work productively with others 3. Improve self study 4. Develop leader ship skills	1. Marking the home works 2. Working closely with the different groups 3. Evaluate the efforts of each student in preparing the report 4. Evaluate the scientific values of reports 5. Evaluate the work in team 6.	Poster presentation
4	- 1. Enhancement the ability of students to use computers and internet 2. Know how to write a report 3. Perform effective communication with colleagues and faculty members 4. Ability to use programs designed for medical internal radiation dose software 5- Problem solving and ability to interpret the results.	1. Give the students research assignments 2. Ask the student to search the internet for the solution of a specific problem 3. Evaluate of presentations and reports	

Summarize any actions you recommend for improving teaching strategies as a result of evaluations in table 3 above.

Encouraging students to prepare the next lecturer and introduce power point presentation

Initiating reactive learning

4. Effectiveness of Planned Teaching Strategies for Intended Learning Outcomes set out in the Course Specification. (Refer to planned teaching strategies in Course Specification and description of Domains of Learning Outcomes in the National Qualifications Framework)			
List Teaching Methods set out in Course Specification	Were They Effective?		Difficulties Experienced (if any) in Using the Strategy and Suggested Action to Deal with Those Difficulties.
	No	Yes	
seminar presentation by the students and web-interactions.		Yes	The students need to gain more experience via sharing in national and international conference .
Students will be divided into groups for seminar presentation on important areas of the course to assess their understanding and comprehension of the course		Yes	
All students will be involved in on-line learning process and each student is required to create an E-mail address to facilitate student web interactions		Yes	
Encouraging students to collect the new information about what the new procedures in radiation measurements.		Yes	
Enable the reference books and scientific sites concerning radiology in internet		Yes	

Lectures **Brain storming** **Discussion**		Yes	
Lab work Case Study Active learning Small group discussion Data presentation Learning methods: ,. Power point, . E-learning		Yes	

Note: In order to analyze the assessment of student achievement for each course learning outcome, student performance results can be measured and assessed using a KPI, a rubric, or some grading system that aligns student work, exam scores, or other demonstration of successful learning.

C. Results

Result Summary:

Passed: No 3 Percent 100 % Failed No Percent 50%

Did not complete No Percent

. Distribution of Grades

Letter Grade	Number of Students	Student Percentage	Analysis of Distribution of Grades
A			
A			
B			
B			
C			
C			
D	3		Success percentage = 100% Because a few number of students
D			
F			
F			
Denied Entry			
In Progress			
Incomplete			
Pass	3		
Fail			
Withdrawn	1		

2. Analyze special factors (if any) affecting the results

none

3. Variations from planned student assessment processes (if any) (see Course Specifications).	
a. Variations (if any) from planned assessment schedule (see Course Specifications)	
Variation	Reason
b. Variations (if any) from planned assessment processes in Domains of Learning (see Course Specifications)	
Variation	Reason

4. Student Grade Achievement Verification (eg. cross-check of grade validity by independent evaluator).	
Method(s) of Verification	Conclusion
The instructors of the course are checking together and put a unique process of evaluation	True
Check marking of a sample of papers by others in the department	Equal with the level of student in written tests
Feedback evaluation of teaching from independent organization	True

D Resources and Facilities

1. Difficulties in access to resources or facilities (if any)	2. Consequences of any difficulties experienced for student learning in the course.
Shortage WEB rooms available for student to be useful at any time between lectures	All students must take all of the requirements before start in this course

E. Administrative Issues

1 Organizational or administrative difficulties encountered (if any)	2. Consequences of any difficulties experienced for student learning in the course.

F Course Evaluation

1 Student evaluation of the course (Attach summary of survey results)
a. List the most important recommendations for improvement and strengths
b. Response of instructor or course team to this evaluation
2. Other Evaluation (eg. by head of department, peer observations, accreditation review, other stakeholders)
a. List the most important recommendations for improvement and strengths
b. Response of instructor or course team to this evaluation

G Planning for Improvement

1. Progress on actions proposed for improving the course in previous course reports (if any).			
Actions recommended from the most recent course report(s)	Actions Taken	Action Results	Action Analysis
a. New lecture was added to cover the new of the direct and indirect doses assessment.		Was applied successfully	

3. Action Plan for Next Semester/Year				
Actions Recommended for Further Improvement	Intended Action Points (should be measurable)	Start Date	Completion Date	Person Responsible
a. Updating the course according to the recent publications ▪ Visit to Researches Lab.				

Name of Course Instructor: _ Dr. Taha Al-Fawwal Signature : _
Date Report Completed: 4-1-2018
Program Coordinator:
Signature …… …Date Received: