



Spring Semester AY 2023 – 2024	American University of Beirut	
	Faculty of Health Sciences – Division of Health Professions	
	Medical Imaging Sciences Program	
	Course number	MIMG209
	Course name	Quality Management and Image Analysis

Course Administration

Instructor: Ms. Hanane Merhi

Office: Sub-basement, AUBMC, Room #: SB- 17

Phone Extension: 5075

Office hours: by appointment

Email : hm14@aub.edu.lb

Class Time and Venue

Day and Time: Monday and Wednesday 10:00 am – 11:15 am Van Dyck 201

Course Description

The aim of the course is to allow students to identify the structure of a radiology department, and to explore the fundamental principles of Quality management related to medical imaging with emphasis on quality Improvement initiatives to make the Healthcare environment more efficient, effective, and safer.

The course also includes introduction to change management strategies adopted in the clinical imaging environment. Students will discuss and evaluate patient safety measures in different areas in the radiology department with an introduction to patient-centered care.

Finally, students will be introduced to characteristics that affect image quality in digital imaging.

Course Learning Outcomes

At the end of this course the student will be able to develop knowledge in the below topics:

LO1. Radiology Department Organization

- Understand the providing services and activities that are characteristics of a Radiology Department
- Be able to discuss the various elements that affect efficiency of the Radiology Department

LO2. Quality of Care

- Identify patient safety areas in the Radiology Department
- Identify and evaluate Patient safety incidents in the Radiology Department
- Discuss the measures to prevent patient safety incidents in the Radiology Department
- Identify Patient Centered Care in the Radiology Department

LO3. Change Process in Professional Practice

- Develop an understanding of the process of introducing change in practice
- Critically evaluate professional response to change
- Identify strategies to successfully implement change

LO4. Quality Management in Medical Imaging

- Identify the components of quality management
- Identify the principles of quality management
- Identify the purpose, tools, and strategies for quality Improvement in health care
- Key evidence-based Quality Improvement initiatives that affect patients' outcomes

LO5. Digital Image Quality Improvement

- Dose optimization approaches in Digital Radiography
- Digital image quality descriptors

Credits Allocated: 3



Prerequisites: MIMG204 and MIMG207

Course Outline

Please note this is a tentative schedule. Any changes may be made at the instructor's discretion.

Session's date	Topic	Course Activities	Course Objectives
22 Jan	Orientation to course Explanation of the syllabus and course requirements	Reading Course Syllabus on Moodle	-
24 Jan – 28 Feb	Radiology Department Organization Quality of Care	Power-Point presentations posted on Moodle PDF teaching material posted on Moodle	1 – 2
04 Mar – 20 Mar	Change Process in Professional Practice		3
27 Mar	Exam 1		1 – 2 – 3
25 Mar – 10 Apr	Quality Management in Medical Imaging		3
15 Apr – 24 Apr	Digital Image Quality Improvement		5
TBD	Exam 2		1 – 2 – 3 – 4 – 5
25 March session (Annunciation Day) needs to be compensated on Friday 22 March, 12:30 – 13:45			
01 April (Latin Easter) needs to be compensated on Friday 05 April, 12:30 – 13:45			
10 April session (Id Al Fitr) needs to be compensated on Friday 19 April, 12:30 – 13:45			

Student Assessment

Assessment	Chapters	Percent
1. Attendance	-	5%
2. Exam 1	Radiology Department Structure Quality of Care Change Process in Professional Practice	30%
3. Exam 2	Radiology Department Organization Quality of Care Change Process in Professional Practice Quality Management in Medical Imaging Digital Image Quality Improvement	35%
4. Assignment (Electronic submission Via Moodle)	Radiology Department Organization Quality of Care Change Process in Professional Practice Quality Management in Medical Imaging	30%

Course Resources

- Giardino A., Riesenber L., Varkey P. (2021). Medical Quality Management Theory and Practice (3rd Ed.). Springer
- Seeram, E. (2019). Digital Radiography Physical Principles and Quality Control (2nd edition).
- Seeram, E. (2023). Dose Optimization in Digital Radiography and Computed Tomography an Essential Guide. Springer.
- Shah R. (2021). Patient Safety and Quality Improvement in Healthcare A Case-Based Approach. Springer.
- Useful Websites
 - <https://www.asrt.org/docs/default-source/practice-standards>
 - <https://www.camrt.ca>
 - <https://www.iaea.org/publications/14917/basics-of-quality-management-for-nuclear-medicine-practices>
 - <https://www.iso.org/standards/popular/iso-9000-family>
 - <https://www.iaea.org/sites/default/files/22/02/leadership-management-and-culture-for-safety-iaea-safety-standards-publications-and-review-services.pdf>

Course Policies and General Notes

- Attendance:**



- Students are expected to attend all classes and attendance will be taken in each lecture. A student is responsible for the work that is done and for any announcements made during student absence.
- Students who, during a term, miss more than one-fifth of the sessions of any course in the first twelve weeks of the term (six weeks in the case of the summer term) can be dropped from the course. A faculty member who drops a student from the course for this reason must have stated in the syllabus that attendance will be taken.
- Students who withdraw or are dropped for excessive absence from a course receive a grade of "W". Students who do not withdraw or cannot be dropped for excessive absence from a course will receive a grade of 40 (F).
- Students arriving late to class (>10 minutes) will be considered absent.

2. Academic integrity:

Education is demanding, and time management is essential. Do not hesitate to use the resources around you but do not cut corners. Cheating and plagiarism will not be tolerated. Please review the Student Code of Conduct in your handbook available on the following web page:

<https://www.aub.edu.lb/sao/Documents/Student%20Handbook%202016-2017.pdf> and familiarize yourself with definitions and penalties (p. 33).

If you're in doubt about what constitutes plagiarism, ask your course instructor(s) because it is your responsibility to know. The American University of Beirut has a strict anti-cheating and anti-plagiarism policy. Penalties include failing marks on the assignment in question, suspension or expulsion from university and a permanent mention of the disciplinary action in the student's records.

By signing up for this course, you confirm that you have read and accepted the terms and provisions of "AUB's Privacy Statement".

3. Examinations:

All written exams must be completed within the time period specified. Students who miss a scheduled examination or quiz must present an excuse considered valid by the instructor of the course. The only delays for the exam that will be considered by the course instructor(s) are for documented illness, death in the family, and personal/family emergency. Unless stated otherwise in the course syllabus, the course instructor should then require the student to take a make-up examination.

Only medical reports issued by an AUB Medical Center (AUBMC) doctor, or by the University Health Services will be accepted. Should there be a question about the validity of any excuse presented by the student, the matter should be referred to the appropriate faculty committee. Instructors should make sure there is no time conflict between an exam and a regularly scheduled course.

4. Students with Disabilities:

AUB strives to make learning experiences accessible for all. If you anticipate or experience academic barriers due to a disability (such as ADHD, learning difficulties, mental health conditions, chronic or temporary medical conditions), please do not hesitate to inform the Accessible Education Office. In order to ensure that you receive the support you need and to facilitate a smooth accommodations process, you must register with the Accessible Education Office (AEO) as soon as possible: accessibility@aub.edu.lb; [+961-1-350000](tel:+9611350000), x3246; West Hall, 314.

5. Non-Discrimination – Title IX – AUB :

AUB is committed to facilitating a campus free of all forms of discrimination including sex/gender-based harassment prohibited by Title IX. The University's non-discrimination policy applies to, and protects, all students, faculty, and staff. If you think you have experienced discrimination or harassment, including sexual misconduct, we encourage you to tell someone promptly. If you speak to a faculty or staff member about an issue such as harassment, sexual violence, or discrimination, the information will be kept as private as possible, however, faculty and designated staff are required to bring it to the attention of the University's Title IX Coordinator. Faculty can refer you to fully confidential resources, and you can find information and contacts at www.aub.edu.lb/titleix. **To report an incident**, contact the University's Title IX Coordinator Mitra Tauk at 01-350000 ext. 2514, or titleix@aub.edu.lb. An anonymous report may be submitted online via Ethics Point at www.aub.ethicspoint.com.