



Fall Semester AY 2023 – 2024	American University of Beirut	
	Faculty of Health Sciences – Division of Health Professions	
	Medical Imaging Sciences Program	
	Course number	MIMG207
	Course name	<i>Principle of Imaging II</i>

Course Administration

Instructor: Ms. Hanane Merhi
Office: Sub-basement, AUBMC, Room #: SB- 17
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Office hours: by appointment
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Class Time and Venue

Day and Time: Tuesday and Thursday 11:00 am – 12:15 pm
Location: Diagnostic Radiology Department – American University of Beirut-Medical Center

Course Description

The MIMG207 course is designed to develop competency in diagnostic procedures of the gastrointestinal system, biliary tract, and genitourinary systems, and breast imaging. Vascular and non-vascular interventional procedures are covered to provide students with knowledge about the techniques used for management of patients with these radiological procedures.

The course content will focus on the patient and equipment preparation, projections and positions followed for each study, use of contrast media, after care of patients and radiographic appearances of different anatomical structures. Students acquire clinical experience in these radiographic procedures in the actual clinical setting under the guidance of an assigned radiographer.

Course Learning Outcomes

At the end of this course the student will be able to:

Contrast Media:

- LO1. Identify the pharmacology and type of radiopaque contrast media and discuss the classifications and route of administration of contrast media employed in imaging procedures.
- LO2. Identify the applications of radiographic contrast media.
- LO3. Describe the adverse side effects and reactions of radiopaque contrast media and identify the screening methods to evaluate patients prior to introduction of radiopaque contrast media.

Gastrointestinal system, biliary tract, and genitourinary system procedures:

- LO4. Identify the anatomy of the gastrointestinal system, biliary tract, and genitourinary system.
- LO5. List and define the indications and the contraindications for the procedures involving the gastrointestinal, biliary tract and genitourinary system.
- LO6. Identify the type of contrast media used for the procedures.
- LO7. Describe the patient preparation for the procedures.
- LO8. List and identify the specialized equipment necessary for the procedures.
- LO9. Describe the patient positioning and projections taken for the procedures.
- LO10. Identify the other imaging modalities used to evaluate the different body systems.
- LO11. Identify the radiographic anatomy of the projections taken and perform image critique.
- LO12. Identify the complications associated with the procedures.

Breast Imaging:

- LO13. Describe the anatomy of the breast



- LO14. Discuss the advantages and disadvantages of the following breast imaging modalities, digital mammography, breast ultrasound, breast magnetic resonance imaging
- LO15. Identify the characteristics of benign and malignant breast lesions
- LO16. Identify the common types of breast cancer.
- LO17. Identify the reasons for breast compression, spot compression and magnification techniques.
- LO18. Describe the proper positioning for the routine and supplementary projections in digital mammography
- LO19. Identify the breast radiographic anatomy of the projections taken and perform image critique.
- LO20. Identify the purpose of breast needle localization
- LO21. Identify and discuss the advantages and disadvantages of the various core biopsy methods.

Vascular and Non-Vascular Interventional Procedures

- LO22. Describe and identify the use, the shape and specifications of catheters, guide wires and accessory items found in interventional suite.
- LO23. List and describe the various vascular and nonvascular interventional procedures that can be performed.
- LO24. List the indications and contraindications for interventional procedures.
- LO25. Discuss vessel access for the interventional procedures.
- LO26. Identify common complications for the interventional procedures.

Credits Allocated: 3

Prerequisites: MIMG206 - MIMG206L - DGRG220

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
Aug-Sep	Orientation to course Explanation of the syllabus and course requirements	Reading Course Syllabus on Moodle	None
	Contrast Media	Power-point presentations posted on Moodle Viewing sessions Labelling exercises	1-3
21/09/2023	Test 1		1-3
Sep-Oct	Gastrointestinal and Biliary System Procedures		4-12
	Genitourinary System Procedures		4-12
09/11/2023	Test 2		4-12
Nov-Dec	Breast Imaging Procedures		13-21
	Vascular and Non-Vascular Interventional Procedures		22-26
28/11/2023	Test 3		13-26

Student Assessment

Assessment	Chapters	Percent
1. Attendance	All	5%
2. Test 1	Contrast Media	20%
3. Test 2	Gastrointestinal and Biliary System Procedures Genitourinary System Procedures	40%
4. Test 3	Vascular and Non-Vascular Interventional Breast Imaging	35%

Course Resources



1. Andolina, V.F. & Lille, S. (2011). *Mammographic Imaging: A Practical Guide*. 3rd Edition. Philadelphia, PA, Lippincott Williams & Wilkins.
2. Bontrager, K.L. and Lampignano, J. P. (2013). *Textbook of Radiographic Positioning and Related Anatomy*. 8th Edition. St. Louis, Missouri, Elsevier Mosby.
3. Levine, M.S., Ramchandani P. & Rubesin S.E. (2012). *Practical Fluoroscopy of the GI and GU Tracts*. United Kingdom, University Press, Cambridge.
4. Long, B.W., Rollins J. H. & Smith, B. J. (2016). *Merrill's Atlas of Radiographic Positioning and Procedures (Volumes 1, 2 and 3)*. 13th Edition. St. Louis, Missouri, Elsevier Mosby.
5. Munoz J.J. & Ribes R. (2010). *Learning Vascular and Interventional Radiology*. New York, Springer
6. Peart, O. (2005). *Mammography & Breast Imaging*. McGraw-Hill.
7. Valgi, K. (2012). *The Practice of Interventional Radiology with Online Cases and Videos*. Philadelphia, PA, Elsevier Saunders.
8. Watson, N. & Jones H. (2018). *Chapman & Nakielny's Guide To Radiological Procedures*. 7th Edition. Elsevier.

Course Policies and General Notes

1. 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).

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 Taouk 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.