

American University of Beirut
Faculty of Health Sciences
Medical Imaging Sciences
MIMG 201
(Introduction to Medical Imaging)
Fall Semester

Name: Marlen S. Keushgerian
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Office Hours: 7:30-16:00

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Meeting Location: Classroom Room #: SB21

Meeting Time: T-TH 9:30-10:20

COURSE DESCRIPTION:

An overview of the field of radiologic technology and its role in health care delivery. Students are oriented to academic and administrative structure, and the profession. Basic principles of radiation protection are introduced. The ethical and legal responsibilities of the profession are discussed.

Course Objectives:

By the end of the course, students will:

- Demonstrate knowledge in basic word structure using common combining forms, suffixes, and prefixes
- Identify body planes, anatomic relationship and radiographic positioning terminologies and apply this to describe patient positioning techniques
- Describe the events surrounding the discovery of x-rays
- State the characteristics of electromagnetic radiation
- List the properties of x-rays
- Develop a basic knowledge about the role and function of different imaging modalities
- To consider the factors which have an influence on the quantity and/or quality of the x-ray beam
- Have an overview of imaging sciences and its role in health care delivery
- Be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole
- Understand the ethical and legal responsibilities of the profession relative to the health care delivery

Credits Allocated: 2

Prerequisites: None

Assignments: None

Student Assessment / Basis of Grade determination

Grades for this course will be based on the following criteria:

Tests 100%

N.B.: The passing grade for the course is 70

COURSE SYLLABUS

- I- Introduction to the educational program
 - 1- General information
 - 2- Duties / responsibilities of the student radiographer
- II- Introduction to Health care
 - 1- Definition of health
 - 2- The health illness continuum
 - 3- The health care team
 - 4- Allied health professions
- III- Hospital organization
 - 1- Types of organizations
 - 2- Administrative services
 - 3- Patient Services
- IV- Introduction to Anatomy
 - 1- Anatomy, physiology and pathology
 - 2- Anatomical nomenclature
 - 3- Body structure
 - 4- The skeletal system
- V- Medical terminology
- VI- Introduction to imaging physics
 - 1- Discovery of x – rays
 - 2- Production of x – rays
 - 3- The radiographic image
- VII- Introduction to Imaging modalities
 - 1- Conventional radiography or projection imaging
 - 2- Digital radiography
 - 3- Computed tomography
 - 4- Ultrasound
 - 5- Nuclear medicine
 - 6- Magnetic resonance imaging
 - 7- Why choose one type of imaging modality over another

- VIII- Introduction to Radiation protection
- 1- Basic physics
 - 2- Sources of radiation
 - 3- Radiation units
 - 4- Biological effects of radiation
 - 5- Fetal irradiation
 - 6- The need for radiation protection
 - 7- Patient protection
 - 8- Staff protection
 - 9- Protection from radionuclides
 - 10-Dose limits
 - 11-Radiation safety monitoring
- IX- Introduction to Medical ethics and law
- 1- Ethics
 - 2- Legal considerations
 - 3- Communication
 - 4- Diversity
 - 5- Empathy
 - 6- Working as team members
 - 7- Dealing with conflict
 - 8- Critical thinking
 - 9- Problem solving and decision making
 - 10-Communication with patients, co – workers and supervisors
 - 11-Documentation

Bibliography / References

- Cohen B.J. & Taylor J.J (2009). Memmler's Structure and Function of the Human Body. 9th ed. Lippincott Williams & Wilkins
- Seeram, E. (2011). Digital Radiography. An Introduction. Delmar
- Oppelt A. (ed.) (2005). Imaging Systems for Medical Diagnostics. Publicis Corporate Publishing.
- Townsley, D.M. & young Th.A. (2007). Ethical & Legal Issues for Imaging Professionals. Mosby Elsevier.
- Chabner, D. (2005). Medical Terminology. (4th ed.). Mosby.
- Robert, N.S. & Russo, R.D. (1998). Practical Guide to Diagnostic Imaging. Mosby.
- Sider, L. (1996). Introduction to Diagnostic Imaging. Churchill Livingstone.

Author (s) of Syllabus and resume (s)

- Marlen S. Keushgerian (resume attached)
- Hanane Merhi (resume attached)

COURSE POLICY

1. **Attendance:** you are expected to attend all classes and participate in class activities. If you miss a class, it is your responsibility to make up for the material missed, and inquire about any announcements made. If you miss more than one fifth of class sessions, you are subject to withdrawing from the course with a-w-grade. *Please refer to the AUB catalogue.*
2. **Exams:** Examinations must be taken as scheduled. Make up exams will not be given unless a valid excuse is given. Only authorized medical reports will be accepted. (AUBMC/ Infirmary)
3. **Withdrawal date:** Please observe withdrawal dates set by the Registrar's Office.
4. **E-mail communication:** Students will be e – mailed on regular basis throughout the semester.
5. **Moodle:** The course material and assignments are posted on Moodle. Students are held accountable for checking the Moodle course on regular basis.
6. **Academic integrity:** Cheating and plagiarism will not be tolerated. Students must review the Student Code of Conduct in their handbook and familiarize themselves with definitions and penalties. If the student is in doubt about what constitutes plagiarism, he / she should ask their instructor (s) because it is *their* responsibility to know. The American University of Beirut has a strict anti-cheating 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.