Medical Imaging Degree Program

Year 2

Course: BMI 2103 Imaging Procedures

Primary Faculty:	Raphael D. Hazel, PhD, Dip. Ed. Lecturer, Medical Imaging Program

Class Time:	Thursdays 10:00 am - 12:00 pm 1:00 – 3:00 pm
Class Location:	HS 209

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Phone:	592-660-7499
Email:	Raphael@medicalbiosci.com rdhazel@icloud.com

Website:	medicalbiosci.com
Office hours:	HS 312, by appointment
Text Book:	Principles of Radiographic Imaging: An Art and a Science, Richard R. Carlton & Arlene Mcenna Alder, 4th Ed, Delmar Publishers Radiographic Anatomy and Positioning and Procedures Workbook, 3rd Ed., (vol 1 & 2), Steve G. Hayes Sr., Mosby

Name: Imaging Procedures I

Course Code : BMI 2103

Credits: 4

Description: General description

Students will learn the radiographic and clinical skills and knowledge required to perform routine radiographic images of the skeleton, including articulations and basic skull radiography. Basic chest and abdominal examinations will be included and gastro intestinal studies will be introduced. High levels of patient care and safety will be integrated into good radiographic practice.

Delivery Mode: Classroom sessions

Co-requisites and Pre-requisites:

Program basic entrance requirements, completion of year 1

Learning outcomes:

The student will be able to:

- Perform routine examinations of the skeleton, specifically upper and lower extremities, shoulder and pelvic girdles, vertebral column, pelvis, ribs and sternum.
- Perform routine examinations of the skull
- Perform routine examination of the abdomen including erect, supine, prone and decubitus positions
- Perform chest radiography
- Understand the basics of barium studies of the GI tract and contrast media in CT and MRI
- Perform all examinations in a safe manner, applying radiation protection where required
- Use equipment safely
- Apply radiation safety procedures
- Treat patient with respect and with care
- Analyze radiographs of these areas to determine accuracy, quality of anatomical part identified.
- Manage time and work deadlines
- Apply analytical criteria effectively to the use and effectiveness of various imaging technologies
- Work independently and as a team member

Contact Hours:

Lectures: 3 hours

Tutorials: 1 hour

Labs: 2 hours of laboratory sessions

	Contact hrs per wk*	**Class size**	**Mode of delivery**
	4	25	Face to face/ online sessions

Method of Evaluation/Assessment:			
Course work:	60%	25	Face to face
Final exam:	40%	25	Face to face
Requirements to pass course: e.g. Must pass Course Work and Exam, etc. to pass Course.			
Must pass Course Work and Final Exam to pass Course 4 tests 5% each, 8 laboratory assignments 2.5% each, mid term exam 20%			

Grades	
A	80-100 %
B	70-79 %
C	60-69 %
D	55-59%
F	0-54%

Course Content:

Week	**Topics**
1	International Regulations for patient and occupationally exposed personnel exposure to radiation. Terms used to identify projections. Implications of clinical information.
2	Image Artifacts: Unsharpness, types, effects. Causes of image unsharpness. Measures to minimize image unsharpness. CT, US and MRI artifacts.
3	Radiography outside the Radiography department – ward, operating theatre. Principles involved in examining for foreign bodies
4	Techniques for examination of upper limb for injury: fingers, thumb, wrist, forearm. Modifications for foreign bodies; pathology.
5	Technique for elbow: humerus. Technique for injury to shoulder; clavicle, scapula; acromioclavicular joint. Modification for recurrent dislocation of shoulder; pathology.
6	Procedure for examination of upper ribs; lower ribs; sternum. Modification for gross injury.
7	Technique for lower limb: toes, foot, heel. Modification for foreign body; pathology. Technique for ankle, leg, knee, patella.
8	Mid Term Examination

9	Technique for pathology of knee joint. Technique for femur, hip, pelvis, neck of femur. Modification for pathology of hip and presence of foreign bodies.
10	Technique for surgical pinning of neck of femur (theatre procedure).
11	Technique for cervical spine. Modification for gross injury; pathology. Technique for thoracic spine. Modification for gross injury; pathology and presence of foreign bodies.
12	Technique for lumbar spine; lumbo-sacral joint. Modifications for gross injury and pathology and presence of foreign bodies.
13	Technique for sacrum; coccyx; sacro-iliac joints. Modification for pathology. Procedure for examination of upper ribs; lower ribs; sternum. Modification for gross injury.
14	Final Examination

Book Lists/Recommended Reading: List text books, journals, internet resources, Core texts and journals

Additional reading material: www.insideradiology.com.au

Booklist

- Ballinger, P. and Frank, E.D. (2003). *Merrill's Atlas of Radiographic Positions and Radiological Procedures.* 10th Edition. Mosby Year-Book.
- Bontrager, K. (1997). *Textbook of Radiographic Positioning and Related Anatomy.* 4th Edition. Mosby –Year Book.
- Greathouse, J. (1998). *Delmar's Radiographic Positioning and Procedures, Vol. I.* Delmar.
- *Stedman's Concise Medical Dictionary*. (1997). 3rd Edition. Williams and Wilkins.
- *Radiographic Image Analysis, (2006) Kathy McQuillen*-Martensen
- *Radiographic Image Analysis, 2nd Ed*., Kathy McQuillen, Saunders 2006
- *Workbook for Radiographic Image Analysis, 2nd Ed*., Kathy McQuillen, Saunders 2006