

Medical Imaging Degree Program

Year 2

Course: BMI 2101 Surface and Sectional Anatomy

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

Class Time: Tuesdays 1:00-4:00 pm

Class Location: HS 209

Office Location: HS 312

Phone: 592-660-7499

Email: [Raphael@medicalbiosci.com](mailto:Raphael@medicalbiosci.com)  
[rdhazel@icloud.com](mailto:rdhazel@icloud.com)

Website: [medicalbiosci.com](http://medicalbiosci.com)

Office hours: HS 312, by appointment

Text Book: Sectional Anatomy for Imaging Professionals  
and Workbook 1<sup>st</sup> edition or 2<sup>nd</sup> edition: Lorrie  
Kelley and Connie Peterson, Mosby Elsevier 1996,  
2007

<b>Course Name:</b> Surface and Sectional Anatomy			
<b>Course Code:</b> BMI 2101			
<b>Number of credits:</b> 3			
<b>Description: General description of the course, include mode of delivery.</b>			
<p>This course enables students to identify anatomical areas through knowledge of surface markings and features. The planes and lines used in medical imaging are reinforced.</p> <p>This course presents anatomy from a relational viewpoint. Location and relationship between organs and structures are learnt and then applied to the understanding and interpretation of CT, MRI and ultrasound images. It also describes how various structures within the body can be located using visible structure on the outside.</p> <p>Delivery Mode: Classroom sessions</p>			
<b>Course Objectives:</b>			
The student will be able to:			
<ul style="list-style-type: none"> <li>• Identify all major structures and organs on sectional images</li> <li>• Identify anatomical structures in 2D and 3D</li> <li>• Describe the anatomical relationships of key anatomical structures</li> <li>• Recognize gross anatomical features and pathologies visualized on radiographs, CT, and MRI and Ultrasound</li> <li>• Identify images from each of the techniques described</li> </ul>			
<b>Learning outcomes:</b>			
The student will be able to:			
<ul style="list-style-type: none"> <li>• Perform correct positioning using surface markings and appearances</li> <li>• Perform correct positioning using recognized planes and lines of the body</li> <li>• Assist in the performance of any of these examinations if requested</li> <li>• Demonstrate the highest level of professionalism</li> <li>• Apply radiation safety procedures at all times</li> <li>• Use ethical and professional behavior at all times to patient and staff.</li> <li>• Work independently and as a team member</li> <li>• Use critical analysis in the use and practice of various imaging modalities</li> </ul>			
<b>g) Contact Hours:</b>			
	<b>Contact hrs per wk*</b>	<b>Class size</b>	<b>Mode of delivery</b>
<b>Lectures</b>	2	25	Face to face/ online sessions

<b>Tutorials</b>	1	25	Face to face
<b>Labs</b>	2	25	Face to face
<b>Method of Evaluation/Assessment:</b>			
<b>Course work:</b>	<b>60%,</b>		
<b>4 tests ....</b>	<b>20%,</b>		
<b>8 labs:.....</b>	<b>20%,</b>		
<b>Mid term exam:....</b>	<b>20%</b>		
<b>Final exam: .....</b>	<b>40%</b>		
<b>Course work:</b>	4 tests 5% each, 8 labs 2.5% each, Mid term exam 20%		
<b>Final exam:</b>	3 hours, 40%		
<b>Requirements to pass course:</b>			
Must pass Course Work and Final Exam to pass Course			
<b>Grading System:</b>			
A	80-100 %		
B	70-79 %		
C	60-69 %		
D	55-59%		
F	0-54%		
<b>Course Content:</b>			
<b>Week</b>	<b>Topics</b>		
1	Planes and lines of the body. Identification of lines. Subject types. Surface landmarks of the head.		
2	Surface landmarks and spinal levels to locate organs of the alimentary, biliary respiratory and circulatory systems.		
3	Surface landmarks and spinal levels to locate organs of the thorax, abdomen, urinary, reproductive systems Test # 1		
4	Surface landmarks to locate organs of the circulatory system.		
5	Spinal levels to locate organs of the circulatory system in the thorax and abdomen. Test # 2		
6	Surface landmarks to locate organs of the urinary system and the female reproductive		

	system.
7	Spinal levels to locate organs of the urinary system and the female reproductive system.
8	Mid Term Exam
9	Cross-sectional anatomy of the head and neck at specific levels.
10	Appearances of the organs and structures on CT, MRI and Ultrasound images. Test # 3
11	Cross-sectional anatomy of the thorax, abdomen and pelvis at specific levels.
12	Appearance of structures and organs on CT, MRI and Ultrasound images. Test # 4
13	Cross-sectional anatomy of specific structures of the nervous and endocrine systems.
14	Appearance of organs and structures on CT, MRI and Ultrasound.
15	Final Comprehensive Examination
<b>Book Lists/Recommended Reading: List text books, journals, internet resources texts/journals</b>	
<b>Booklist</b>	
<ul style="list-style-type: none"> <li>• Madden, M.E. (2001) <i>Introduction to Sectional Anatomy</i>. Philadelphia: Lippincott.</li> <li>• Ballinger, P. and Frank, E.D. (2003). <i>Merrill's Atlas of Radiographic Positions and Radiological Procedures</i>. (10<sup>th</sup> &amp; 11<sup>th</sup> Edition.). Mosby Year-Book.</li> <li>• Cowling, C. (1998). <i>Delmar's Radiographic Positioning and Procedures, Vol. II, Advanced Imaging Procedures</i>. Albany: Delmar.</li> <li>• Haaga, J., Lanzieri, C. and Sartoris, D.J. (1994). <i>Computer Tomography and Magnetic Resonance Imaging of the Whole Body</i>. (3<sup>rd</sup> Edition.). St. Louis: Mosby Year Book.</li> <li>• Rumach, C.M., Wilson, S.R. and Charbonneau, J.W. (1991). <i>Diagnostic Ultrasound, Vol. 1</i>. Mosby-Year Book.</li> <li>• Tortorici, M.R. and Apfel, P.J. (1995). <i>Advanced Radiographic and Angiographic Procedures</i>. F.A. Davis.</li> <li>• Westbrook, C. and Kaut, C. (1998). <i>MRI in Practice</i>. 2<sup>nd</sup> Edition. Blackwell Sciences Ltd.</li> </ul>	