

Summer 2023

Radiologic Anatomy

BME 6533; Section 8C60; 3 Credits

CLASS MEETING INFO

Tuesdays: 12:45 PM – 3:00 PM; Thursdays: 8:30 AM – 9:45 AM

Location: Communicore Room C2-33

INSTRUCTOR

BC Schwarz, Ph.D.; schwbc@radiology.ufl.edu

Office Hours: Arrange via email

TEACHING ASSISTANTS

Megan Glassell, M.S.; mgla0001@radiology.ufl.edu

Office Hours: Arrange via email

DESCRIPTION

Imaging techniques as they relate to human anatomy and physiology

PRE-REQUISITES/CO-REQUISITES

None

OBJECTIVES

1. Students will develop a thorough knowledge of human anatomy, human physiology, and medical terminology.
2. Students will learn fundamental knowledge of human anatomy and physiology illustrated through radiological imaging techniques of relevance to the medical physicist.
3. Students will develop the ability to identify normal and abnormal anatomy/physiology from current medical imaging modalities (radiography, fluoroscopy, CT, MRI, PET, SPECT, and ultrasound) and effectively communicate with physicians regarding the details of image interpretation
4. Students will learn the basis of cancer staging in different tissues and the effective treatment paradigms for each of these tissues

MATERIALS AND SUPPLY FEES

None

REQUIRED TEXTBOOKS & SOFTWARE

Microsoft PowerPoint (or another presentation software which can be screen-shared during presentations)

RECOMMENDED MATERIALS

<https://openstax.org/details/books/anatomy-and-physiology?Book%20details>

Anatomy for Diagnostic Imaging, 3rd Edition

Useful anatomy and physiology websites which can be utilized by students during the course:

- https://web.archive.org/web/20180728152807/http://www2.med.wayne.edu/diagRadiology/Anatomy_Modules/Page1.html

COURSE SCHEDULE

Date	Lecture	Topic	Instructor
5/16/2023	1	Course Intro and Review	Schwarz
5/16/2023	2	Basics of Image Interpretation	Schwarz
5/16/2023	3	Thorax Overview	Schwarz
5/16/2023	4	Chest Wall Structures	Schwarz
5/16/2023	5	Thoracic Spine	Schwarz
5/18/2023	6	Chest Muscles	Schwarz
5/18/2023	7	Breast Anatomy	Schwarz
5/23/2023	8	(class starts at 1:30) Lung Anatomy	Schwarz
5/23/2023	9	(class starts at 1:30) Lung Physiology and Function	Schwarz
5/23/2023	10	(class starts at 1:30) Bronchial Tree	Schwarz
5/25/2023	11	Pleura Appearance and Function	Bates
5/25/2023	12	Anatomy and Structure of the Mediastinum	Bushloper
5/30/2023	13	(class starts at 1:30) Heart: Anatomy, Physiology, and Function	Schwarz
5/30/2023	14	(class starts at 1:30) Imaging of the Heart and Coronary Vessels	Schwarz
6/1/2023	15	Pulmonary Vessels: Structure, Anatomy, Evaluation	Gibson
6/1/2023	16	Systemic Vessels: Function, Anatomy, Evaluation	Jakubowski
6/1/2023	17	Esophagus Anatomy and Function	Sforza
6/6/2023	18	Lymphatic System Organization and Structure	Wehmeier
6/6/2023	19	Immune Response and Specific/Non-Specific Defenses	Withrow
6/6/2023	20	Review for Exam 1/Clinical Case Studies (Lecture 1-19)	Schwarz
6/8/2023		Exam 1 (material through Lecture 1-20)	
6/13/2023	21	(class starts at 1:30) Overview of the Abdomen	Schwarz
6/13/2023	22	(class starts at 1:30) Abdominal Wall, Diaphragm, and Peritoneal Cavity	Bates
6/13/2023	23	(class starts at 1:30) Abdominal Vasculature	Bushloper
6/13/2023	24	(class starts at 1:30) Lumbar Spine and Abdominal Skeleton	Gibson
6/13/2023	25	(class starts at 1:30) Esophagus and Gastroduodenal	Jakubowski
6/15/2023	26	Small Intestine and Colon	Sforza
6/15/2023	27	Spleen and Pancreas	Wehmeier
6/15/2023	28	Liver and Biliary System	Withrow
6/20/2023	29	Kidneys and Adrenal Glands	Schwarz
6/20/2023	30	Renal Physiology	Schwarz
6/20/2023	31	Urinary and Reproductive Systems	Schwarz
6/20/2023	32	Functional Imaging of the Abdomen	Schwarz
6/20/2023	33	Review for Exam 2/Clinical Case Studies (Lectures 21-32)	Schwarz
6/22/2023		Exam 2 (material from Lecture 21-33)	
6/27/2023		NO CLASS (UF Summer Break)	
6/29/2023		NO CLASS (UF Summer Break)	
7/4/2023		NO CLASS (July 4 Holiday)	
7/6/2023	34	MRI Fundamentals and Review	Schwarz
7/6/2023	35	Brain Structures, Regions, and Function	Schwarz
7/11/2023	36	Spinal Cord Structure, Regions, and Function	Bates
7/11/2023	37	Central Nervous System (CNS) and Major Nerves	Bushloper
7/11/2023	38	CSF Production, Flow, and Function	Gibson

7/11/2023	39	Bony Anatomy of the Skull and C-Spine	Jakubowski
7/11/2023	40	Eyes and Associated Structures	Sforza
7/11/2023	41	Ear and Associated Structures	Wehmeier
7/13/2023	42	Nose and Associated Structures	Withrow
7/13/2023	43	Soft Tissue and Facial Muscles	Schwarz
7/13/2023	44	Head and Neck Vasculature	Schwarz
7/18/2023	45	Examples of Neuroradiology Techniques and Functional Imaging	Schwarz
7/18/2023	46	Hormone Structure, Transport, and Function	Schwarz
7/18/2023	47	Glands and Organs of the Endocrine System	Schwarz
7/18/2023	48	Hormonal and Systemic Interactions	Schwarz
7/18/2023	49	Review for Exam 3/Clinical Case Studies (Lectures 33-48)	Schwarz
7/20/2023		Exam 3 (material from Lecture 33-49)	
7/25/2023	50	Imaging Techniques for Upper and Lower Extremities	Schwarz
7/25/2023	51	Bones and Joints of Upper Extremities	Schwarz
7/25/2023	52	Muscles of Upper Extremities	Schwarz
7/25/2023	53	Vasculature of Upper Extremities	Schwarz
7/25/2023	54	Bones and Joints of Lower Extremities	Schwarz
7/27/2023	55	Muscles of Lower Extremities	Schwarz
7/27/2023	56	Vasculature of Lower Extremities	Schwarz
7/27/2023	57	Abnormalities and Case Studies of Extremities	Schwarz
8/1/2023	58	BI-RADS and Breast Cancer Staging	Bates
8/1/2023	59	Breast Cancer Treatments	Bushloper
8/1/2023	60	PI-RADS and Prostate Cancer Staging	Gibson
8/1/2023	61	Prostate Cancer Treatments	Jakubowski
8/1/2023	62	Lung-RADS and Lung Cancer Staging	Sforza
8/3/2023	63	Lung Cancer Treatments	Wehmeier
8/3/2023	64	Head and Neck Cancers and Staging	Withrow
8/3/2023	65	Head and Neck Cancer Treatments	Schwarz
8/8/2023	66	Contrast Agents: Types, Protocols, and Concerns	Schwarz
8/8/2023	67	TIPS Procedures	Schwarz
8/8/2023	68	Review for Exam 4 and Clinical Case Studies (Lectures 49-67)	Schwarz
8/10/2023		Exam 4 (material from Lecture 50-68)	

ATTENDANCE POLICY; CLASS EXPECTATIONS; MAKE-UP POLICY

Attendance is required during this course. The “participation” portion of the course is dependent upon regular attendance. Any class periods that may be missed should be brought to the attention of the instructors as far in advance as possible.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies - <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

EVALUATION OF GRADES

A list of graded categories is shown below in the table. There is no homework for this course.

Assignment	Percentage of Final Grade
Class Presentations	30%
Participation	10%
Topical Examinations	60%
	Total: 100%

In the course schedule above, the lecturer will be the course instructor for the majority of the lectures. However, many of the lectures in this course will be researched and then presented on by the students with the class instructor filling in informational holes at the end of each students lecture. This student schedule will be determined prior to the first class and distributed to the students. All students will have an even number of presentations throughout the semester on which they will be graded. This grade constitutes the “class presentation” portion of the final grade.

General presentation guidelines are as follows:

1. Each presentation should be prepared using a presentation software (ideally Microsoft PowerPoint) and be approximately 15-20 minutes in duration with 5 minutes for Q/A as well as extra information to be provided by the instructor
2. Total presentation time > 25 minutes will incur a 15% grading penalty
3. Presentation format and content should roughly follow the following format, as appropriate:
 - I. Introduction
 - a. Overview of the anatomical structures to be discussed
 - b. Overview of the physiological function
 - c. Imaging modalities commonly used and the associated rationale
 - II. Details
 - a. Identification of detailed anatomic structures
 - b. Definitions of appropriate terminology
 - c. Physical visualization
 - d. Radiological visualization
 - e. Details of physiological function
 - f. Relationship to other structures and organs
 - III. Imaging Examples
 - a. Examples of normal anatomy and physiology
 - b. Examples of abnormal appearances, disease, etc.

GRADING POLICY

Percent	Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
59 & below	E

More information on UF grading policy may be found at: <http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>

STUDENTS REQUIRING ACCOMMODATIONS

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565; <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

ONLINE COURSE EVALUATION

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via

<https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

UNIVERSITY HONESTY POLICY

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

SOFTWARE USE

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

STUDENT PRIVACY

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

CAMPUS RESOURCES

Health and Wellness

U Matter, We Care

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center

352-392-1575; <http://www.counseling.ufl.edu/cwc>

Sexual Assault Recovery Services (SARS)

352-392-1161; Student Health Care Center

University Police Department

352-392-1111 (or 911 for emergencies); <http://www.police.ufl.edu/>

Academic Resources

E-learning Technical Support

352-392-4357 (select option 2); learning-support@ufl.edu; <https://lss.at.ufl.edu/help.shtml>

Career Resource Center

Career assistance and counseling.

352-392-1601; Reitz Union; <https://www.crc.ufl.edu/>

Library Support

Various ways to receive assistance with respect to using the libraries or finding resources.

<http://cms.uflib.ufl.edu/ask>

Teaching Center

General study skills and tutoring.

352-392-2010 or 352-392-6420; Broward Hall; <https://teachingcenter.ufl.edu/>

Writing Studio

Help brainstorming, formatting, and writing papers.

352-846-1138; 302 Tigert Hall; <https://writing.ufl.edu/writing-studio/>

Student Complaints Campus

https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

On-Line Students Complaints

<http://www.distance.ufl.edu/student-complaint-process>