



**Jordan University of Science and Technology**  
**Faculty of Applied Medical Sciences**  
**Radiologic Technology Department**

RA362 Ultra Sound

Second Semester 2023-2024

**Course Catalog**

3 Credit Hours. This course aims at introducing the students to the concepts of ultrasound scanning, the physics of sound waves, the components of the ultrasound machine and different types of transducers. Students will learn how the ultrasound images are created, the proper ways of holding the transducers and how to improve the quality of the displayed images, in addition to ultrasound artifacts. The students will get familiar with indications for ultrasound scanning of different organs and structures in the body, their anatomy, the normal appearances and how to detect common pathologies and abnormalities. The principles of Doppler ultrasound and DVT will also be covered.

**Teaching Method:** On Campus

**Text Book**

Text Book	
<b>Title</b>	Ultrasound Teaching Manual: The Basics of Performing and Interpreting Ultrasound Scans
<b>Author(s)</b>	Matthias Hofer
<b>Edition</b>	3rd Edition
<b>Short Name</b>	Ref # 1
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Ref # 2	radiopaedia.org/articles	Radiologists	4th Edition	
Ref # 3	Ultrasound cases.info	Dr. Taco Geertsma, SonoSkills and FUJIFILM Healthcare Europe	4th Edition	

**Instructor**

Name	Dr. Badera Almohammad
Office Location	-

Office Hours	
Email	bmalhammad@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 10:00 - 11:30 Room: M2202

Teaching Assistant
Rasha Elshayib(Section 1)

Prerequisites		
Line Number	Course Name	Prerequisite Type
143132	RA313 Principles Of Diagnostic Imaging 2 Lab	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction and Ultrasound Interactions with matter.	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 2	Ultrasound equipment, transducers and physics	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 3	Ultrasound artifacts	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 4	Ultrasound of the spleen	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 5	Ultrasound of the liver and gall bladder	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 6	Ultrasound of the biliary tree	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 7	Ultrasound of the pancreas	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 8	Stomach ultrasound	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>

Week 10	Small intestine ultrasound	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 11	Large intestine ultrasound	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 12	Thyroid ultrasound	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 13	Renal ultrasound	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 14	Urinary bladder ultrasound	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 15	Doppler ultrasound	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>
Week 16	DVT ultrasound	From <b>Ref # 1</b> , From <b>Ref # 2</b> , From <b>Ref # 3</b>

<b>Mapping of Course Outcomes to Program Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
Introducing the students to the concepts of ultrasound scanning, the physics of sound waves, the components of the ultrasound machine and different types of transducers	20%	
Students will learn how the ultrasound images are created, the proper ways of holding the transducers and how to improve the quality of the displayed images, in addition to ultrasound artifacts	20%	
The students will get familiar with indications for ultrasound scanning of different organs and structures in the body, their anatomy, the normal appearances and how to detect common pathologies and abnormalities. The principles of Doppler ultrasound and DVT will also be covered.	60%	

<b>Relationship to Program Student Outcomes (Out of 100%)</b>												
PLO B1	PLO B2	PLO B3	PLO B4	PLO B5	PLO B6	PLO B7	PLO M1	PLO M2	PLO M3	PLO M4	PLO M5	PLO M6

<b>Evaluation</b>	
<b>Assessment Tool</b>	<b>Weight</b>
First	30%

Second	30%
Final	40%

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