



## Course Syllabus of Ultrasound Equipment & Technique

Faculty: Faculty of Medicine and Health Sciences

Department: Health Sciences

Program: Bachelor in Radiologic Technology and Medical Imaging

### I. General information about the course instructor :

Name	Dr. Amin Mohsen Amer	Office Hours(3 Hours Weekly )					
Location & phone number	UST- 775948767	Sat	Sun	Mon	Tue	Wed	Thu
Email	aminalflahi@gmail.com				√		

### II. General information about the course:

1. Course Title :	Ultrasound Equipment & Technique			
2. Course Code and Number :	BMI423			
3. Credit Hours :	Credit Hours			Total
	Theoretical	Seminar/Tutorial/Practical	Training	
	2	1		3
4. Study Level and Semester:	4 <sup>th</sup> level / 2 <sup>nd</sup> semester			
5. Pre-requisites :	BMI322			
6. Co-requisites:	None			
7. Program in which the course is offered:	Bachelor in Radiologic Technology and Medical Imaging			
8. Teaching Language:	English			
9. Instruction location:	University of Science and Technology, Sana'a, Yemen			

### III. Course Description

This course is a study of the ultrasound applications of abdominal, gynecology, obstetric and small parts ultrasonography. Topics of discussion include the correct use of all technical and medical terms that are necessary for a complete discussion of sonographic procedures related clinical symptoms and normal versus abnormal sonographic patterns of the anatomy studied, related disease processes and sonographic protocol for each of the tests covered in the course. The teaching will include lecture and practice sessions with collaborative learning, dialogue and discussion . The students will be evaluated through writing exam, and practical exam. Ultrasound physics course is a pre-requisite for this course.

عميد الكلية:  
د. عبدالله المخلافي

رئيس القسم:  
د. عبد الحبيب القباطي

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المراجع:  
د. فهد ثوابه  
د. مجاهد نصار

الموصف:  
أمين الفلاح

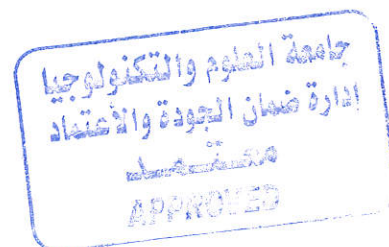


#### IV. Course Aims: This course aimed to:

1. Provide the students the theoretical and practical background of properly positioning and scanning patients using diagnostic ultrasound for basic examination of abdomen, obstetrics, gynecology and small parts.
2. Learn the student basic knowledge to identify normal and abnormal appearances related to sonographic scanning of abdomen, obstetrics, gynecology and small parts.
3. Improve the student skills to read the sectional anatomy images using ultrasound different modes of display.
4. Provide the student the fundamental skills of standards scanning procedures based on quality assurance and protection standards in medical imaging.

#### V. Course Intended Learning Outcomes (CILOs) :

1. Explain the fundamental skills of standards scanning procedures based on quality assurance and protection principles in medical imaging.
2. Describe the procedures of properly patients positioning and scanning using diagnostic ultrasound for basic examination of abdomen, obstetrics, gynecology and small parts.
3. Identify the normal and abnormal appearances related to sonographic scanning of abdomen, obstetrics, gynecology and small parts.
4. Analyze the imaging protocols and procedures and recognize the artifacts and limitations if occur during the ultrasound imaging process.
5. Estimate the ultrasound image quality regarding to the QA issues and standards with determining if the image (diagnosable) or not.
6. Manipulate safely the ultrasound imaging modalities according to the manual operation (manufacturer's instructions) and write the preliminary report.
7. Apply the ALARA principle to protect the patients, and others during ultrasound imaging process.
8. Perform the QA tests and procedures to ensure optimal operation of ultrasound imaging modalities.
9. Perform the appropriate preparation and positioning in ultrasound imaging process according to protocols.
10. Effectively interact with health care workers specially radiologist and engineer to provide safety of patient and machines.



## VI. Course Contents

### Theoretical Aspect:

No.	Course Topics/Units	Sub-topics	Week due	Contact Hours
1	Course syllabus and introduction	<ul style="list-style-type: none"> <li>- Overview of course syllabus and assessment</li> <li>- Introduction to abdominal sonography</li> </ul>	1 <sup>st</sup>	2
2	Acute abdomen ultrasonography	<ul style="list-style-type: none"> <li>- RUQ pathological conditions</li> <li>- RLQ pathological conditions (acute appendicitis)</li> <li>- LLQ pathological conditions</li> <li>- LUQ pathological conditions</li> </ul>	2 <sup>nd</sup> , 3 <sup>rd</sup>	4
3	Hepato- biliary ultrasonography	<ul style="list-style-type: none"> <li>- Patient preparation and technique</li> <li>- Liver normal appearance</li> <li>- GB normal appearance</li> <li>- Liver pathology ultrasound</li> <li>- GB pathology ultrasound</li> </ul>	4 <sup>th</sup> , 5 <sup>th</sup> , 6 <sup>th</sup>	6
4	Spleen and pancreas ultrasonography	<ul style="list-style-type: none"> <li>- Patient preparation and technique</li> <li>- Spleen and pancreas normal appearance</li> <li>- Spleen and pancreas pathology ultrasound</li> </ul>	7 <sup>th</sup> , 8 <sup>th</sup>	4
5	Midterm exam	-	9 <sup>th</sup>	2
6	Urinary system ultrasonography	<ul style="list-style-type: none"> <li>- Patient preparation and technique</li> <li>- Kidney and UB normal appearance</li> <li>- Kidney and UB pathology ultrasound</li> </ul>	10 <sup>th</sup> , 11 <sup>th</sup>	4
7	Small parts ultrasonography	<ul style="list-style-type: none"> <li>- Patient preparation and technique</li> <li>- Small parts (breast, scrotum and thyroid) normal appearance</li> <li>- Small parts (breast, scrotum and thyroid) pathology ultrasound</li> </ul>	12 <sup>th</sup>	2
8	Obstetric And gynecological ultrasonography	<ul style="list-style-type: none"> <li>- Patient preparation and technique</li> <li>- Gynecology ultrasound</li> <li>- Obstetrical ultrasound (gestational age estimation. Abnormal findings)</li> </ul>	13 <sup>th</sup> , 14 <sup>th</sup> , 15 <sup>th</sup>	6
9	Final exam	-	16 <sup>th</sup>	2
Total number of weeks and hours			16	32

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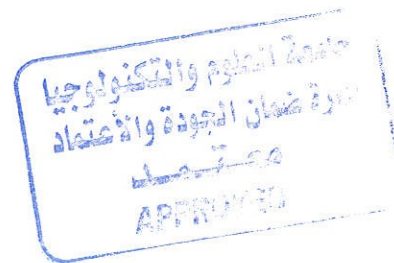
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د. فهد ثوابه  
د. مجاهد نصار

الموظف :  
أمين الفلاحى



Second: Practical/Tutorial/Clinical Aspects			
No.	Clinical topics	Week due	Contact Hours
1	Knobology and ultrasound system	2 <sup>nd</sup>	2
2	Acute abdomen ultrasonography practice	3 <sup>rd</sup> ,4 <sup>th</sup>	4
3	Hepato- biliary ultrasonography practice	5 <sup>th</sup> ,6 <sup>th</sup>	4
4	Spleen and pancreas ultrasonography practice	7 <sup>th</sup> ,8 <sup>th</sup>	4
5	Urinary system ultrasonography practice	9 <sup>th</sup> ,10 <sup>th</sup>	4
6	Small parts ultrasonography practice	11 <sup>th</sup>	2
7	Obstetric And gynecological ultrasonography practice	12 <sup>th</sup> ,13 <sup>th</sup> 14 <sup>th</sup>	6
8	Final exam practice	15 <sup>th</sup>	2
Total number of weeks and hours		14	28



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