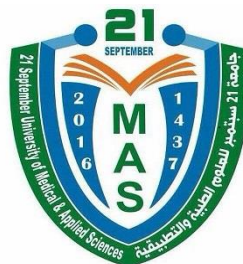


Republic of Yemen
Ministry of Education & Higher Research
Council of Academic Accreditation & Quality Assurance of
Higher Education (CAQA)



**21 septamber University of Medical
and Applied Science**



Faculty of Applied Medical Science

Department of **Medical Radiology and Imaging Technology**

Program of Radiologic Technology and Medical Imaging

Course Specification of

Sectional Anatomy 1

Course Code. (____)

2024



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:

Reviewed by:

Dr. -----

Head of the Department:

Dr. Awadh Al-Kubati

Quality Unit:

Dr. Mohammed
Al-shamahi

Dean:

Dr. Abdulsalam
Dalaq

I. General Information:

1.	Course Title:	Sectional Anatomy 1				
2.	Course Code:					
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/ Seminar	Lab	Clinical
		2	2	--	--	--
4.	Level/ Semester at which this Course is offered:	3 rd Level / 1 st Semester				
5.	Pre –Requisite (if any):					
6.	Co –Requisite (if any):	None				
7.	Program (s) in which the Course is Offered:	Bachelor of Radiologic Technology and Medical Imaging				
8.	Language of Teaching the Course:	English				
9.	Location of Teaching the Course:	Faculty of Applied Medical Science				
10.	Prepared by:					
11.	Date and Number of Approval by Council:					

II. Course Description:

This course provides an introduction to the sectional anatomy of the human body using cross-sectional imaging techniques such as CT and MRI. It covers anatomical structures of the head, neck, thorax, and abdomen, emphasizing their clinical importance. Students will learn to identify key anatomical features, analyze cross-sectional images, and understand the correlation of imaging with clinical conditions.

III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:			Referenced PILOs	
A. Knowledge and Understanding:			I, P or M/A	
a1	Identify anatomical structures in the head, neck, thorax, and abdomen in sectional images.	M	A1	Demonstrate an understanding of fundamental knowledge of Biomedical sciences (Biology, Biophysics, Anatomy, Physiology, Sectional anatomy and medical imaging technique).
a2	Describe the spatial relationships of anatomical structures using cross-sectional views.	M		
B. Intellectual Skills:				
b1	Correlate anatomical structures with common clinical conditions and imaging findings.	P	B3	Analyze and evaluate evidence-based information needed in medical imaging practice.
b2	Analyze and interpret cross-sectional images for diagnostic purposes.	P		
C. Professional and Practical kills:				
c1	Apply knowledge of sectional anatomy to the interpretation of CT and MRI images.	P	C2	Apply technical skills in using medical imaging devices, tools, and materials in radiological technology practice.
c2	Utilize imaging tools to enhance the visualization of anatomical structures.	P	C4	Utilize appropriate manual and automated techniques in radiological imaging investigations.
D. Transferable Skills:				
d1	Communicate effectively with healthcare professionals about anatomical findings.	M	D1	Communicate effectively with clinicians, patients, and support staff.

d2	Demonstrate teamwork and collaboration in case discussions and image analysis.	M	D4	Function effectively as an individual, as a member, or leader of a team engaged in appropriate activities to the radiologic technology disciplines to accomplish a common goal.
I= Introduced, P=Practiced or M/A= Mastered/Advanced				

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:				
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies	
a1	Identify anatomical structures in the head, neck, thorax, and abdomen in sectional images.	▪ Lectures, guided readings	▪ Written exams, quizzes	
a2	Describe the spatial relationships of anatomical structures using cross-sectional views.	▪ Case-based learning, group discussions	▪ Written exams, assignments	
(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:				
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies	
b1	Correlate anatomical structures with common clinical conditions and imaging findings.	▪ Case studies, image interpretation sessions	▪ Assignments, projects	
b2	Analyze and interpret cross-sectional images for diagnostic purposes.	▪ Hands-on sessions with imaging software	▪ Practical exams, presentations	
(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:				
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies	
c1	Apply knowledge of sectional anatomy to the interpretation of CT and MRI images.	▪ Practical labs, simulation-based learning	▪ Practical exams, lab reports	
c2	Utilize imaging tools to enhance the visualization of anatomical structures.	▪ Training with imaging tools	▪ Practical exams, reports	

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
d1	Communicate effectively with healthcare professionals about anatomical findings.	Group discussions, presentations	Evaluations, group assignments
d2	Demonstrate teamwork and collaboration in case discussions and image analysis.	Team-based projects, case study discussions	Case study reports

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Introduction to Sectional Anatomy	– Definitions, Imaging Modalities (CT, MRI), Planes of Section	1	2	a1, a2
2	Skull Anatomy in Sectional Imaging	– Cranial Bones, Sinuses, Major Foramina	1	2	a1, b1
3	Brain Anatomy in Sectional Imaging	– Cerebrum, Cerebellum, Ventricles, Basal Ganglia	1	2	a1, a2, b2
4	Neck Anatomy	– Soft Tissue Structures, Cervical Vertebrae, Vessels	1	2	a1, b1
5	Thorax: Skeletal Structures	– Rib Cage, Sternum, Thoracic Vertebrae	1	2	a1, a2
6	Thoracic Cavity: Organs and Vessels	– Heart, Lungs, Major Vessels	1	2	a1, a2, b2
7	Abdominal Skeletal Anatomy	– Lumbar Vertebrae, Pelvis, Bony Landmarks	1	2	a1, a2
8	Mid-Term Exam	– In all previous Topics	1	2	a1, a2, b1, b2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
9	Abdominal Organs in Sectional Anatomy	– Liver, Spleen, Kidneys, Stomach, Intestines	1	2	a1, b1, c1
10	Major Blood Vessels of the Abdomen	– Aorta, Inferior Vena Cava, Portal Circulation	1	2	a2, b1
11	Imaging Anatomy of the Pelvic Organs	– Bladder, Uterus, Prostate, Rectum	1	2	a1, b1, c2
12	Muscular Structures in Sectional Imaging	– Thoracic and Abdominal Walls, Pelvic Muscles	1	2	a1, b2
13	Lymphatic System in Cross-Sectional Anatomy	– Lymph Nodes, Spleen, Thoracic Duct	1	2	a1, a2
14	Correlation of Imaging and Clinical Conditions	– Case Studies in Neurology, Thoracic Pathologies	1	2	b1, b2, d1
15	Advances in Cross-Sectional Imaging Technology	– Emerging Trends in CT and MRI Applications	1	2	a2, b1, d2
16	Final Theoretical Exam	– All theoretical topics	1	2	a1, a2
Number of Weeks /and Units Per Semester			16	32	

B. Practical Aspect (Lab/Clinical) (if any):

No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Identifying Planes of Section in CT and MRI Images	1	2	a1, a2
2	Cross-Sectional Imaging of the Skull	1	2	a1, b1
3	Interpretation of Brain Structures in MRI	1	2	a1, b2

No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
4	Analyzing Neck Structures in Sectional Imaging	1	2	a1, c1
5	Thoracic Structures: Recognizing Key Features	1	2	a1, a2, c1
6	Abdominal Organs in CT Imaging	1	2	a1, b1, d1
7	Identifying Pelvic Organs and Vascular Anatomy	1	2	a1, b1, c2
8	Analysis of Clinical Case Studies: Thoracic Disorders	1	2	b1, c1, d2
9	Interpretation of Lymphatic System Imaging	1	2	a1, a2, d1
10	Advanced Imaging Techniques and Correlation	1	2	a2, b1, d2
15	Final Practical Exam	1	2	b2, c1, c2
Number of Weeks /and Units Per Semester		14	28	

C. Tutorial Aspect (if any):

No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	None			
2				
3				
Number of Weeks /and Units Per Semester				

VII. Teaching Strategies:

- Lectures,
- Practical Sessions
- Case-Based Learning,
- Group Discussions
- Workshops

VII. Assessment Methods:

- Written Exams,
- Quizzes,
- Practical Exams
- Midterm Exams,
- Assignments
- Case Study
- Group Presentations

VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	Research Report on Imaging Planes	4	2	a1, a2
2	Case Study: Brain Structures in MRI	6	3	a1, b1
3	Practical Report on Abdominal CT Imaging	8	2	b1, c1
4	Group Presentation on Pelvic Anatomy	10	3	a1, d1, d2
Total			10	

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Midterm Exam	7	10	50%	a1, a2
2	Assignments	During semester	10	10%	a1, a2, b1, d1, d2
3	Practical Exam	8	30	30%	b2, c1, c2
4	Final Exam	14	50	50%	a1, a2
Total			100	100 %	

IX. Learning Resources:

Prepared by:

Reviewed by:
Dr. -----

Head of the Department:
Dr. Awadh Al-Kubati

Quality Unit:
Dr. Mohammed
Al-shamahi

Dean:
Dr. Abdulsalam
Dalaq

1- Required Textbook(s) (maximum two):

- 1- Mark W. Anderson, Michael G Fox, Nicholas C. Nacey, 2024, Sectional Anatomy by MRI and CT, 5th Edition, Elsevier.
- 2- Lorrie L. Kelley, Connie Petersen, 2018, Sectional Anatomy for Imaging Professionals, 4th Edition, Mosby.

2- Essential References:

- 1- Adrian Kendal Dixon, David J. Bowden, Bari M. Logan, Harold Ellis, 2017, Human Sectional Anatomy: Pocket atlas of body sections, CT and MRI images, 4th edition, CRC Press.
- 2- Luciano Alves Favorito, Natasha T. Logsdon, 2022, Atlas of Sectional Anatomy: Understanding the Anatomical Aspects of the Thorax, Abdomen and Pelvis 1st Edition, Springer.
- 3- Denise L. Lazo, 2014, Fundamentals of Sectional Anatomy: An Imaging Approach, 2nd Edition, Cengage Learning.
- 4- Edith Applegate, 2009, The Sectional Anatomy Learning System, 3rd Edition, Saunders.
- 5- Michael E. Madden, 2001, Introduction to Sectional Anatomy, Lippincott William.s & Wilkins.

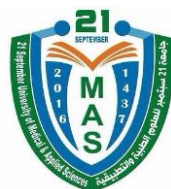
3- Electronic Materials and Web Sites etc.:

Electronic Materials and Websites

- Anatomy Textbooks and Anatomy Atlases, [Anatomy Atlases: A digital library of human anatomy information - Anatomy | Anatomy Atlas | Human Anatomy | Cross Sectional Anatomy | Anatomic Variation](#)
- Radiopaedia (www.radiopaedia.org)
- Anatomy.TV (www.anatomy.tv)
- PubMed (www.pubmed.ncbi.nlm.nih.gov)
- Medscape (www.medscape.com).

X. Course Policies: (Based on the Uniform Students' By law (2007))

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.



6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.

Faculty of Applied Medical Science

Department of **Medical Radiology and Imaging Technology**

Program of Radiologic Technology and Medical Imaging

Course Plan (Syllabus) of

Sectional Anatomy 1

Course Code.

I. Information about Faculty Member Responsible for the Course:						
Name of Faculty Member:		Office Hours				
Location& Telephone No.:	-----					
E-mail:	--@--.--	SAT	SUN	MON	TUE	WED THU

2024/2025

I. General Information:

12.	Course Title:	Sectional Anatomy 1				
13.	Course Code:					
14.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/ Seminar	Lab	Clinical
		2	2	--	--	--
15.	Level/ Semester at which this Course is offered:	3 rd Level / 1 st Semester				
16.	Pre –Requisite (if any):					
17.	Co –Requisite (if any):	None				
18.	Program (s) in which the Course is Offered:	Bachelor of Radiologic Technology and Medical Imaging				
19.	Language of Teaching the Course:	English				
20.	Location of Teaching the Course:	Faculty of Applied Medical Science				
21.	Prepared by:					
22.	Date and Number of Approval by Council:					

II. Course Description:

This course provides an introduction to the sectional anatomy of the human body using cross-sectional imaging techniques such as CT and MRI. It covers anatomical structures of the head, neck, thorax, and abdomen, emphasizing their clinical importance. Students will learn to identify key anatomical features, analyze cross-sectional images, and understand the correlation of imaging with clinical conditions.

III. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the course, students will be able to:

A. Knowledge and Understanding:

- | | |
|----|--|
| a1 | Identify anatomical structures in the head, neck, thorax, and abdomen in sectional images. |
| a2 | Describe the spatial relationships of anatomical structures using cross-sectional views. |

B. Intellectual Skills:

- | | |
|----|---|
| b1 | Correlate anatomical structures with common clinical conditions and imaging findings. |
| b2 | Analyze and interpret cross-sectional images for diagnostic purposes. |

C. Professional and Practical skills:

- | | |
|----|--|
| c1 | Apply knowledge of sectional anatomy to the interpretation of CT and MRI images. |
| c2 | Utilize imaging tools to enhance the visualization of anatomical structures. |

D. Transferable Skills:

- | | |
|----|--|
| d1 | Communicate effectively with healthcare professionals about anatomical findings. |
| d2 | Demonstrate teamwork and collaboration in case discussions and image analysis. |

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Sectional Anatomy	– Definitions, Imaging Modalities (CT, MRI), Planes of Section	1	2
2	Skull Anatomy in Sectional Imaging	– Cranial Bones, Sinuses, Major Foramina	1	2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
3	Brain Anatomy in Sectional Imaging	– Cerebrum, Cerebellum, Ventricles, Basal Ganglia	1	2
4	Neck Anatomy	– Soft Tissue Structures, Cervical Vertebrae, Vessels	1	2
5	Thorax: Skeletal Structures	– Rib Cage, Sternum, Thoracic Vertebrae	1	2
6	Thoracic Cavity: Organs and Vessels	– Heart, Lungs, Major Vessels	1	2
7	Abdominal Skeletal Anatomy	– Lumbar Vertebrae, Pelvis, Bony Landmarks	1	2
8	Mid-Term Exam	– In all previous Topics	1	2
9	Abdominal Organs in Sectional Anatomy	– Liver, Spleen, Kidneys, Stomach, Intestines	1	2
10	Major Blood Vessels of the Abdomen	– Aorta, Inferior Vena Cava, Portal Circulation	1	2
11	Imaging Anatomy of the Pelvic Organs	– Bladder, Uterus, Prostate, Rectum	1	2
12	Muscular Structures in Sectional Imaging	– Thoracic and Abdominal Walls, Pelvic Muscles	1	2
13	Lymphatic System in Cross-Sectional Anatomy	– Lymph Nodes, Spleen, Thoracic Duct	1	2
14	Correlation of Imaging and Clinical Conditions	– Case Studies in Neurology, Thoracic Pathologies	1	2
15	Advances in Cross-Sectional Imaging Technology	– Emerging Trends in CT and MRI Applications	1	2
16	Final Theoretical Exam	– All theoretical topics	1	2
Number of Weeks /and Units Per Semester			16	32

B. Practical Aspect (Lab/Clinical) (if any):

Prepared by:

Reviewed by:

Dr. -----

Head of the Department:

Dr. Awadh Al-Kubati

Quality Unit:

Dr. Mohammed
Al-shamahi

Dean:

Dr. Abdulsalam
Dalaq

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	Identifying Planes of Section in CT and MRI Images	1	2
2	Cross-Sectional Imaging of the Skull	1	2
3	Interpretation of Brain Structures in MRI	1	2
4	Analyzing Neck Structures in Sectional Imaging	1	2
5	Thoracic Structures: Recognizing Key Features	1	2
6	Abdominal Organs in CT Imaging	1	2
7	Identifying Pelvic Organs and Vascular Anatomy	1	2
8	Analysis of Clinical Case Studies: Thoracic Disorders	1	2
9	Interpretation of Lymphatic System Imaging	1	2
10	Advanced Imaging Techniques and Correlation	1	2
15	Final Practical Exam	1	2
Number of Weeks /and Units Per Semester		14	28

C. Tutorial Aspect (if any):

No.	Tutorial	Number of Weeks	Contact Hours
1	None		
2			
3			
Number of Weeks /and Units Per Semester			

VII. Teaching Strategies:

- Lectures,
- Practical Sessions
- Case-Based Learning,
- Group Discussions
- Workshops

VII. Assessment Methods:

- Written Exams,
- Quizzes,
- Practical Exams
- Midterm Exams,
- Assignments
- Case Study
- Group Presentations

VII. Assignments:

No.	Assignments	Week Due	Mark
1	Research Report on Imaging Planes	4	2
2	Case Study: Brain Structures in MRI	6	3
3	Practical Report on Abdominal CT Imaging	8	2
4	Group Presentation on Pelvic Anatomy	10	3
Total			10

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Midterm Exam	7	10	50%
2	Assignments	During semester	10	10%

Prepared by:

Reviewed by:
Dr. -----

Head of the Department:
Dr. Awadh Al-Kubati

Quality Unit:
Dr. Mohammed
Al-shamahi

Dean:
Dr. Abdulsalam
Dalaq

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
3	Practical Exam	8	30	30%
4	Final Exam	14	50	50%
Total			100	100 %

IX. Learning Resources:

1- Required Textbook(s) (maximum two):

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