



## Course Specifications

<b>Course Title:</b>	<b>General Radiographic Techniques and Radiographic Anatomy (1)</b>
<b>Course Code:</b>	<b>374221-4</b>
<b>Program:</b>	<b>Bachelor in Radiological Sciences</b>
<b>Department:</b>	<b>Department of Radiological Sciences</b>
<b>College:</b>	<b>College of Applied Medical Sciences</b>
<b>Institution:</b>	<b>Taif University</b>

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## A. Course Identification

<b>1. Credit hours:</b>	4
<b>2. Course type</b>	
a.	University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b>	4 <sup>th</sup> Level/ 2 <sup>nd</sup> Year.
<b>4. Pre-requisites for this course (if any):</b>	<ul style="list-style-type: none"> <li>Human Anatomy (374210-4).</li> <li>Digital image acquisition and display (374217-2).</li> </ul>
<b>5. Co-requisites for this course (if any):</b>	None.

### 1. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	7	100%
2	Blended	-	-
3	E-learning	-	-
4	Distance learning	-	-
5	Other	-	-

### 2. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	40
3	Tutorial	-
4	Others (specify)	-
	<b>Total</b>	70

## B. Course Objectives and Learning Outcomes

<p><b>1. Course Description</b></p> <p>Demonstrate routine radiographic procedures with standard terminologies of positioning and identify the basic and alternative skeletal radiographic examinations for the upper and lower extremity, shoulder, and pelvis girdle then State and project to identify the anatomical structures of the upper and lower extremity, shoulder and pelvis girdle, bony thorax and the vertebral column on radiographs</p>
<p><b>2. Course Main Objective</b></p> <p>Theoretical and practical course of General Radiographic Techniques and Radiographic Anatomy (1) is designed to enable the students to know how to make the optimal diagnostic images.</p>

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
1	<b>Knowledge and understanding</b>	
1.1	Define standard terminology of positioning and projection.	K1

CLOs		Aligned PLOs
1.2	Describe the routine and alternative skeletal radiographic procedures.	K3
<b>2</b>	<b>Skills:</b>	
2.1	Choose the appropriate radiographic positioning according to the patient medical condition.	S1
2.2	Analyze and create all routine and alternative skeletal radiographic examinations.	S3
2.3	Illustrate the anatomical structures on radiograph images for the upper and lower extremities, shoulders, pelvis girdle, bony thorax and the vertebrae.	S4
<b>3</b>	<b>Values:</b>	
3.1	Develop professionalism in working carefully and safely with conventional X-ray machines.	V1

### C. Course Content

No	List of Topics	Contact Hours
1	Standard Terminology for Positioning and Projection Chapter 1 (page 3 -70) Textbook 1	7
2	1. Upper extremities: a. Hand. b. Wrist joint. c. Forearm. 2. Practical session (demonstration). Chapter 4 (page 127 -165) Textbook 1	7
3	1. Upper extremities: a. Elbow joint. b. Humerus. 2. Practical session (demonstration). Chapter 4 (page 166 -187) Textbook 1	7
4	1. Shoulder Girdle. 2. Practical session (demonstration). Chapter 5 (page 188 -210) Textbook 1	7
5	1. Lower extremities: a. Foot. b. Ankle joint. c. Legs. 2. Practical session (demonstration). Chapter 6 (page 212 -245) Textbook 1	7
6	1. Lower extremities: a. Knee joint b. Patella c. Femur . 2. Practical session (demonstration). Chapter 6 (page 246 -261) Textbook 1	7

7	1. Pelvic girdle. 2. Practical session (demonstration). Chapter 7 (page 264 -289) Textbook 1	7
8	1. Vertebral column: a. Cervical. b. Dorsal spine. c. Practical session (demonstration). Chapter 8 (page 292 -322) Textbook 1	7
9	1. Vertebral column: a. Lumbar spine. b. Sacral spine. 2. Practical session (demonstration). Chapter 9 (page 323 -354) Textbook 1	7
10	1. Bony thorax. 2. Practical session (demonstration). Chapter 10 (page 356 -373) Textbook 1	7
<b>Total</b>		70

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	<b>Knowledge and understanding</b>		
1.1	Define standard terminology of positioning and projection.	Lectures	Exams and quizzes
1.2	Describe the routine and alternative skeletal radiographic procedures.	Lectures	Exams and quizzes
2.0	<b>Skills:</b>		
2.1	Choose the appropriate radiographic positioning according to the patient medical condition.	Small group discussion	Discussion
2.2	Analyze and create all routine and alternative skeletal radiographic examinations.	Case study	Case evaluation
2.3	Illustrate the anatomical structures on radiograph images for the upper and lower extremities, shoulders, pelvis girdle, bony thorax and the vertebrae.	Lectures / practical	Practical exam
3.0	<b>Values:</b>		
3.1	Develop professionalism in working carefully and safely with conventional X-ray machines.	Collaborative learning	Oral presentation

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Midterm Exam	5 <sup>th</sup>	20%
2	Oral presentation	7 <sup>th</sup>	10%
3	Final Practical exam	10 <sup>th</sup>	20%
4	Final theoretical exam	11 <sup>th</sup> - 12 <sup>th</sup>	50%

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

### Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Faculty members are available for individual consultation. They usually dedicate 12 hours weekly for office hours and students are encouraged to visit them for help. Appointments can also be made in person with the faculty through email or phone. Faculty provide a range of academic and course management advice. Each student has an academic adviser who offers personal, academic, psychological, and professional counseling, as well as group counseling to support the academic, behavioral, emotional, psychological, and social growth of students.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	1. Bontrager's, Textbook for Radiographic Positioning & Related Anatomy John P. Lampignano, Leslie E. Kendrick, 9th Edition Elsevier 2018 ISBN: 978-0-323-39966-1
<b>Essential References Materials</b>	2. CLARK'S Positioning in Radiography WITHLEY Taylor & Francis group 13 <sup>th</sup> Edition 2016 ISBN: 9780429167133
<b>Electronic Materials</b>	1. <a href="http://www.radiologyinfo.org/glossary/">http://www.radiologyinfo.org/glossary/</a> 2. <a href="http://www.radsciresearch.org">http://www.radsciresearch.org</a> 3. <a href="http://www.radiography.com/">http://www.radiography.com/</a> 4. <a href="http://www.jrcert.org">http://www.jrcert.org</a> 5. <a href="http://www.emory.edu/X-RAYS/Sprawls">http://www.emory.edu/X-RAYS/Sprawls</a>
<b>Other Learning Materials</b>	None.

## 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms, laboratories, demonstration rooms/labs.
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Data show projectors.
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Conventional / Digital X-ray machine.

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	Program Leaders	Direct
Extent of achievement of course learning outcomes	Faculty	Direct
Quality of learning resources	Student, Faculty	Indirect
Course management and planning	Students	Indirect
Teaching and interaction with students	Students	Indirect
Effectiveness of Evaluation and exams	Students, peer review	Direct, Indirect

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

Council / Committee	DEPARTMENT COUNCIL
Reference No.	11 <sup>TH</sup>
Date	24 <sup>TH</sup> MAY 2022





## Course Specifications

<b>Course Title:</b>	<b>Physiology</b>
<b>Course Code:</b>	<b>374224-4</b>
<b>Program:</b>	<b>Bachelor in Radiological Sciences</b>
<b>Department:</b>	<b>Department of Radiological Sciences</b>
<b>College:</b>	<b>College of Applied Medical Sciences</b>
<b>Institution:</b>	<b>Taif University</b>



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## A. Course Identification

<b>1. Credit hours:</b> 4
<b>2. Course type</b> a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/> b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b> 5 <sup>th</sup> level / 2 <sup>nd</sup> Year
<b>4. Pre-requisites for this course (if any):</b> Medical Biology (2) (370211-4).
<b>5. Co-requisites for this course (if any):</b> None.

### 1. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	Blended	-	-
3	E-learning	-	-
4	Distance learning	-	-
5	Other	-	-

### 2. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	60
2	Laboratory/Studio	-
3	Tutorial	-
4	Others (specify)	-
	<b>Total</b>	<b>60</b>

## B. Course Objectives and Learning Outcomes

### 1. Course Description

Physiology deals with basic theoretical knowledge about functions of body systems. The focus of the course will be on the cardiovascular, respiratory, endocrine, reproductive, urinary, digestive and central nervous system and concepts of homeostasis and control mechanisms - with emphasis on clinical relevance.

### 2. Course Main Objective

After studying the course, the student will be able to:

- Recognize the normal physiological functions and controls of various human body systems.
- Identify the concepts of homeostasis and basic mechanisms underlying various diseases.
- Applying principles and generalizations learned via course work to novel problems solving and situations in clinical and/or research environments.

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
1	<b>Knowledge and understanding</b>	
1.1	Outline various functions of urinary system.	K1
1.2	Outline various functions of nervous system.	K1
1.3	Outline various functions of digestive system.	K1
1.4	Outline various functions of endocrine system.	K1
1.5	Outline various functions of respiratory system.	K1
1.6	Outline various functions of reproductive system.	K1
1.7	Outline various functions of cardiovascular system.	K1
2	<b>Skills:</b>	
2.1	Distinguish the physiological principles for various body systems.	S2
2.2	Distinguish the physiological principles underlying various diseases states.	S2
3	<b>Values:</b>	
3.1	-	-

### C. Course Content

No	List of Topics	Contact Hours
1	<b>Respiratory System:</b> <ol style="list-style-type: none"> <li>Pulmonary ventilation.</li> <li>Mechanics of respiration.</li> <li>Alveolar gas exchange.</li> <li>Tissue gas exchange.</li> <li>Transport of oxygen and carbon dioxide in blood.</li> <li>Oxygen haemoglobin dissociation curve.</li> <li>Control and regulation of respiration.</li> </ol> Chapter 10, Pages 234-260 (Textbook-1)	6
2	<b>Urinary System:</b> <ol style="list-style-type: none"> <li>Kidney Functions.</li> <li>Mechanism of urine formation.</li> <li>Electrolytes Balance.</li> <li>Renal Acid-Base Regulation.</li> <li>Micturition reflex.</li> </ol> Chapter 13, Pages 338-348 (Textbook-1)	6
3	<b>Endocrine glands:</b> <ol style="list-style-type: none"> <li>Pituitary gland hormones (Functions, control).</li> <li>Thyroid hormones (Functions, control).</li> <li>Parathyroid hormones (Functions, control).</li> <li>Adrenal gland hormones (Functions, control).</li> <li>Pancreatic hormones (Functions, control).</li> </ol> Chapter 9, Pages 217-229 (Textbook-1)	6
4	<b>Reproduction:</b> <ol style="list-style-type: none"> <li>Male reproductive system.</li> <li>Female reproductive system.</li> </ol> Chapter 18, Pages 450-463 (Textbook-1)	6
5	<b>Cardiovascular System:</b>	6

	<ul style="list-style-type: none"> <li>a. Physiology of the Blood</li> <li>b. Blood Compositions and functions of the blood.</li> </ul> Chapter 27, Pages 499-527 (Textbook-2)	
6	<b>Cardiovascular System (Heart):</b> <ul style="list-style-type: none"> <li>a. Functional characteristics of the heart.</li> <li>b. Sinus node and atrio-ventricular node physiology.</li> <li>c. Pacemaker activity (automatism) of the heart</li> <li>d. The cardiac cycle and Electrocardiogram (ECG)</li> </ul> Chapter 5, Pages 87-92 (Textbook-1)	6
7	<b>Cardiovascular System (Circulation):</b> <ul style="list-style-type: none"> <li>a. Regulation of blood volume.</li> <li>b. Regulation of blood pressure and blood flow.</li> </ul> Chapter 5, Pages 94-100 (Textbook-1)	6
8	<b>Digestive System:</b> <ul style="list-style-type: none"> <li>a. Secretory Functions (Secretions) of digestive system.</li> <li>b. Motor functions (Motility) of digestive system.</li> <li>c. Accessory digestive organs: liver, gall bladder, pancreas.</li> <li>d. How is the digestive process controlled?</li> </ul> Chapter 12, Pages 287-317 (Textbook-1)	6
9	<b>Nervous System:</b> <ul style="list-style-type: none"> <li>a. Neural tissue functions</li> <li>b. Central nervous system – functions</li> </ul> Chapter 7, Pages 144-162 (Textbook-1)	6
10	<b>Autonomic Nervous System:</b> <ul style="list-style-type: none"> <li>a. Functions of sympathetic, and parasympathetic nerves</li> </ul> Chapter 60, Pages 748-759 (Textbook-3)	6
<b>Total</b>		60

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	<b>Knowledge and understanding:</b>		
1.1	Outline various functions of urinary system.	Lectures	Exams
1.2	Outline various functions of nervous system.	Lectures	Exams
1.3	Outline various functions of digestive system.	Lectures	Exams
1.4	Outline various functions of endocrine system.	Lectures	Exams
1.5	Outline various functions of respiratory system.	Lectures	Exams
1.6	Outline various functions of reproductive system.	Lectures	Exams
1.7	Outline various functions of cardiovascular system.	Lectures	Exams
2.0	<b>Skills:</b>		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.1	Distinguish the physiological principles for various body systems.	Group discussion Lectures	Exams
2.2	Distinguish the physiological principles underlying various diseases states.	Group discussion Lectures	Exams
3.0	<b>Values:</b>		
-	-	-	-

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid-term Examination	5 <sup>th</sup>	30
2	Activity	8 <sup>th</sup>	10
3	Final Examination	11 <sup>th</sup> - 12 <sup>th</sup>	60

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

### Arrangements for the availability of faculty and teaching staff for individual student consultations and academic advice:

Faculty members are available for individual consultation. They usually dedicate 12 hours weekly for office hours and students are encouraged to visit them for help. Appointments can also be made in person with the faculty through email or phone. Faculty provide a range of academic and course management advice. Each student has an academic adviser who offers personal, academic, psychological, and professional counseling, as well as group counseling to support the academic, behavioral, emotional, psychological, and social growth of students.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	<ul style="list-style-type: none"> <li>Ross &amp; Wilson Anatomy and Physiology in Health and Illness Authors: Anne Waugh, Allison Grant 13th Edition Published: June 6, 2018 Imprint: Elsevier Paperback ISBN: 9780702072765 eBook ISBN: 9780702072840</li> <li>Review of Medical Physiology William Ganong 22nd Edition ISBN-13: 978-0071265607 ISBN-10: 0071440402</li> <li>Guyton and Hall Textbook of Medical Physiology John E. Hall &amp; Michael E. Hall 14th Edition 2020 Elsevier ISBN: 9780323597128</li> </ul>
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<b>Essential References Materials</b>	None.
<b>Electronic Materials</b>	<ul style="list-style-type: none"> <li>• Saudi Digital Library (SDL) on Taif University website (through the Electronic Services portal - academic systems services).</li> <li>• Medical websites (e.g. PubMed) and Search engines (e.g. Google Scholar).</li> </ul>
<b>Other Learning Materials</b>	None.

## 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms.
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Data show, Blackboard and A/V.
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	None.

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching.	Program Leaders	Direct
Extent of achievement of course learning outcomes.	Faculty	Direct
Quality of learning resources.	Student, Faculty	Indirect
Course management and planning.	Students	Indirect
Teaching and interaction with students.	Students	Indirect
Effectiveness of Evaluation and exams.	Students, peer review	Direct, Indirect

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

<b>Council / Committee</b>	<b>DEPARTMENT COUNCIL</b>
<b>Reference No.</b>	<b>11<sup>TH</sup></b>
<b>Date</b>	<b>24<sup>TH</sup> MAY 2022</b>

