



## Course Specifications

<b>Course Title:</b>	<b>Comparative Animal Physiology</b>
<b>Course Code:</b>	
<b>Program:</b>	<b>Bachelor in Zoology</b>
<b>Department:</b>	<b>Biology Department</b>
<b>College:</b>	<b>College of Sciences</b>
<b>Institution:</b>	<b>Taif University</b>

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## A. Course Identification

<b>1. Credit hours:</b> 3 hr
<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> 8 <sup>th</sup> level / 3 <sup>rd</sup> year
<b>4. Pre-requisites for this course (if any):</b> Animal Physiology 2013105-3
<b>5. Co-requisites for this course (if any):</b> None

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

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	6 hr/Week	100%
2	Blended	-	-
3	E-learning	-	-
4	Distance learning	-	-
5	Other	-	-

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

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	-
4	Others (specify)	-
	<b>Total</b>	<b>60</b>

## B. Course Objectives and Learning Outcomes

<b>1. Course Description:</b> This course explores selected topics in the physiology of vertebrate and invertebrate animals, with an emphasis on basic principles of comparisons on how these can either be conserved or differ among phylogenetically diverse animal groups.
<b>2. Course Main Objective:</b> The goal of this course is to introduce students to current and topical questions in comparative physiology through a combination of lectures, invited seminars, review

## 3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	<b>Knowledge and Understanding:</b>	
1.1	Recognize facts, principles, scientific terminology and concepts across animal physiology and other related sciences.	K1
1.3	Identify basics, routine procedures, and technical requirements of different scientific tools and equipment used in comparative physiological studies.	K3

CLOs		Aligned PLOs
<b>2</b>	<b>Skills:</b>	
2.2	Investigate relatively complex scientific problems, facts and opinions related to comparative animal physiology.	S2
2.4	Demonstrate functions of macromolecules (e.g. enzymes, hormones, lipids, proteins, ...etc.) in different body systems.	S4
<b>3</b>	<b>Values:</b>	
3.1	Develop plans to perform specific tasks independently and as a team member.	V1

### C. Course Content

No	List of Topics	Contact Hours
1	<ul style="list-style-type: none"> <li>Unifying principles in physiology (e.g. homeostasis)</li> <li>Cellular basis of physiology</li> </ul>	3L+3P
2	<ul style="list-style-type: none"> <li>Chemistry, biochemistry and cytology of intra- and intercellular communication</li> <li>Endocrinology, hormones and regulated behaviour</li> </ul>	3L+3P
3	<ul style="list-style-type: none"> <li>Neuronal signaling, conduction and operation of synapse</li> <li>Electrical and pharmacological operations of neurons</li> <li>Organization of the two nervous systems &amp; Learning and memory of the brain</li> </ul>	3L+3P
4	<ul style="list-style-type: none"> <li>Sensory systems: General and chemoreception, mechanosensing and hearing, electrosensing, vision</li> </ul>	3L+3P
5	<ul style="list-style-type: none"> <li>Motor patterning &amp; Neuromuscular junction anatomy and muscle function</li> </ul>	3L+3P
6	<ul style="list-style-type: none"> <li>Actin and myosin; sliding filaments, regulation of contraction and muscle diversity</li> </ul>	3L+3P
7	<ul style="list-style-type: none"> <li>Muscle fiber types, energy metabolism, and perfusion</li> </ul>	3L+3P
8	<ul style="list-style-type: none"> <li>Locomotion and skeletal systems, translating contraction into movement, moving in the environment</li> </ul>	3L+3P
9	<ul style="list-style-type: none"> <li>Thermoregulation (time permitting); thermal strategies (ecothermy, coping with changing body</li> </ul>	3L+3P
10	<ul style="list-style-type: none"> <li>Temperature and endothermy, controlling body temperature in changing environments)</li> </ul>	3L+3P
<b>Total</b>		<b>30L+30P</b>



## D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding:</b>		
1.1	Recognize facts, principles, scientific terminology and concepts across animal physiology and other related sciences.	Lectures Open discussion	Paper-based exams
1.2	Identify basics, routine procedures and technical requirements of different scientific tools and equipment used in physiological studies.	Interactive learning Small group activities	Practical exam Practical reports
<b>2.0</b>	<b>Skills:</b>		
2.1	Investigate relatively complex scientific problems, facts and opinions related to animal physiology.	Open discussion Small group activities	Paper-based exams Practical exam
2.2	Demonstrate functions of macromolecules (e.g. enzymes, hormones, lipids, proteins, ...etc.) in different body systems.	Lectures Open discussion	Paper-based exams
<b>3.0</b>	<b>Values:</b>		
3.1	Develop plans to perform specific tasks independently and as a team member.	Small group activities Interactive learning	Assignments

### 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Activities	Continuous	10
2	Midterm Exam	5 <sup>th</sup>	20
3	Periodic Exam	7 <sup>th</sup>	10
4	Practical reports	Continuous	15
5	Final Practical Exam	11 <sup>th</sup>	5
6	Final Exam	12 <sup>th</sup>	40

\*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:**

6 hours per week (as defined in the teaching schedule of the faculty member) for academic advice and consultations.

Teaching staff is also available using Blackboard web site and Taif University “Edugate” System.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	Silverthorn, D.U. (2019) Human Physiology: An Integrated Approach (8th ed.). Upper Saddle River, NJ: Pearson Education Inc. (ISBN: 0134714857)
<b>Essential References Materials</b>	Mac E. Hadley and Jon E. Levine (2009). Endocrinology, 6 <sup>th</sup> Edition, Pearson Press.
<b>Electronic Materials</b>	Blackboard website Website of Saudi digital Library
<b>Other Learning Materials</b>	Computer-based programs and professional software

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	- Classrooms for 40 students\lecture. - Laboratory for 20 students\ lab activity
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	- Data show.
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	- Slide projector. - Permanent slides.

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Indirect
Quality of learning resources	Peer Reviewer Students	Direct Indirect
Extent of achieving the course learning outcomes	Peer Reviewer Students	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>Biology Department</b>
<b>Reference No.</b>	<b>Committee number 14 - Academic Year 1442-1443H</b>
<b>Date</b>	<b>22\5\2022G – 21\10\1443H</b>