



# Advanced Animal Physiology

ZOO 531

## Course specifications (Postgraduate Degree)

<b>Course Title:</b>	Advanced Animal Physiology
<b>Course Code:</b>	<b>ZOO 531</b>
<b>Program:</b>	<b>Master</b>
<b>Department:</b>	<b>Zoology Department</b>
<b>College:</b>	<b>College of Science</b>
<b>Institution:</b>	<b>King Saud University</b>

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## A. Course Identification

<b>1. Credit hours:</b> 2 (1+1)
<b>2. Course type</b> <input type="checkbox"/> Required <input type="checkbox"/> Elective
<b>3. Level/year at which this course is offered:</b> 1st level
<b>4. Pre-requisites for this course (if any):</b> None
<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		80
2	Blended		
3	E-learning		
4	Correspondence		
5	Other		20

### 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	14
2	Laboratory/Studio	
3	Seminars	
4	Others (specify)	14
	<b>Total</b>	28
<b>Other Learning Hours*</b>		
1	Study	
2	Assignments	
3	Library	
4	Projects/Research Essays/Theses	
5	Others (specify)	
	<b>Total</b>	

\* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

## B. Course Objectives and Learning Outcomes

### 1. Course Description

The importance of metabolic activities controls in living organisms. Molecular, biological, neural, hormonal and homeostatic controlling mechanisms in living organisms. Co-ordination of body functions: interaction of cardiovascular functions, control of respiration, renal regulation of extracellular volume and osmolality, regulation of K<sup>+</sup>, Ca<sup>2+</sup>, and H<sup>+</sup> concentration, regulation of gastrointestinal processes, regulation of organic metabolism and energy balance, and regulation of reproductive processes.

### 2. Course Main Objective

The importance of physiological processes and metabolic activities controls in living organisms. Detailed study on molecular, biological, neural, hormonal and homeostatic aspects and concerned controlling mechanisms in living organisms

### 3. Course Learning Outcomes

Course Learning Outcomes (CLOs)		Aligned PLOs*
<b>1</b>	<b>Knowledge</b>	
1.1	Students will Describe the structure of major animal organs and explain their role in the maintenance of life.	
1.2	Students will Explain the interplay between different organ systems and how organs and cells interact to maintain biological equilibria in the face of a variable and changing environment.	
1.3		
1...		
<b>2</b>	<b>Skills</b>	
2.1	Use complex electronic equipment including Powerlabs and Bioamplifiers to record physiological data, and responses to experimental stimuli.	
2.2	Explain physiological processes accurately and concisely in journal-style format and orally, using relevant scientific terminology and nomenclature.	
2.3		
2...		
<b>3</b>	<b>Competence</b>	
3.1	Ability to work in a team to conduct a specific task.	
3.2	Ability to work independently to handle experimental data.	
3.3		
3...		

\* Program Learning Outcomes

## C. Course Content

No	List of Topics	Contact Hours
1	Introduction to physiology.	2
2	Co-ordination of body functions	2
3	Interaction of cardiovascular functions, control of respiration, renal regulation of extracellular volume and osmolality,	4
4	Regulation of K <sup>+</sup> , Ca <sup>2+</sup> , and H <sup>+</sup> concentration, regulation of gastrointestinal processes,	3
5	Regulation of organic metabolism and energy balance, and regulation of reproductive processes	3
...		
<b>Total</b>		14

## 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</b>		
1.1	Students will Describe the structure of major animal organs and explain their role in the maintenance of life.	In-class lecturing (using PowerPoint presentations and illustrations)	Mid- term and final exams
1.2	Students will Explain the interplay between different organ systems and how organs and cells interact to maintain biological equilibria in the face of a variable and changing environment.	Laboratory practice on physiological methods	Evaluation of lab activities
...			
<b>2.0</b>	<b>Skills</b>		
2.1	Use complex electronic equipment including Powerlabs and Bioamplifiers to record physiological data, and responses to experimental stimuli.	Laboratory training.	Evaluation of lab reports and results
2.2	Explain physiological processes accurately and concisely in journal-style format and orally, using relevant scientific terminology and nomenclature.	Use of power point presentation and illustration	Evaluation of Activities and assignments
...			
<b>3.0</b>	<b>Competence</b>		
3.1	Ability to work in a team to conduct a specific task.	Using power point presentation and illustrations	Assessment of student cooperation in lab session
3.2	Ability to work independently to handle experimental data.	Close supervision while performing experiments	Evaluation of the obtained lab results

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Oral presentation	8,11	20
2	Quizzes	3,6,9,11	10
3	Midterm Exam	8	30
4	Final Exam	12	40
5			
6			
7			
8			

\*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:

- Direct supervision by staff member over lab. sessions.
- Office hours / week

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	<ol style="list-style-type: none"> <li>1. Animal Physiology 4th Edition, Richard W. Hill , Gordon A. Wyse ,Margaret Anderson, 2016</li> <li>2. Human Biology 15th Edition,by Sylvia S. Mader. Michael Windelspecht, 2017</li> <li>3. Guyton Physiology 13th Edition,by John E. Hall, 2015</li> </ol>
<b>Essential Reference Materials</b>	<ol style="list-style-type: none"> <li>1. PLoS ONE</li> <li>2. Experimental Physiology</li> </ol>
<b>Electronic Materials</b>	<ol style="list-style-type: none"> <li>1. <a href="https://www.wiley.com/college/apcentral/anatomydrill/">https://www.wiley.com/college/apcentral/anatomydrill/</a></li> <li>2. @ExpPhysiol</li> </ol>
<b>Other Learning Materials</b>	Inquiry into Life - 2 CD's 2006th Edition by Sylvia S. Mader

### 2. Educational and research Facilities and Equipment Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> <li>• Prepared lecture rooms with audio – visual facilities.</li> <li>• Equipped laboratories.</li> </ul>
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	

Item	Resources
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

### G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods

**Evaluation Areas/Issues** (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>Reference No.</b>	
<b>Date</b>	