



# Course Specifications

Institution: <b>Umm Al-Qura University, Makkah, Saudi Arabia</b> Date: <b>6/12/2018</b>
College/Department : <b>Faculty of Medicine / Department of Physiology</b>

## A. Course Identification and General Information

1. Course title and code: <b>4810111-3</b>																				
2. Credit hours: <b>2+1 (3)</b>																				
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) <b>Bachelors Degree in Health Sciences</b>																				
4. Name of faculty member responsible for the course <b>Prof. Syed Tabrez Ali</b>																				
5. Level/year at which this course is offered: <b>Preparatory Year</b>																				
6. Pre-requisites for this course (if any): <b>High School degree</b>																				
7. Co-requisites for this course (if any): <b>Not applicable</b>																				
8. Location if not on main campus: -----																				
9. Mode of Instruction (mark all that apply):																				
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;">a. traditional classroom</td> <td style="width: 10%; text-align: center;"><input type="text"/></td> <td style="width: 30%;">What percentage?</td> <td style="width: 25%; text-align: center;"><input type="text"/></td> </tr> <tr> <td>b. blended (traditional and online)</td> <td style="text-align: center;"><input type="text"/></td> <td>What percentage?</td> <td style="text-align: center;"><input type="text"/></td> </tr> <tr> <td>c. e-learning</td> <td style="text-align: center;"><input type="text"/></td> <td>What percentage?</td> <td style="text-align: center;"><input type="text"/></td> </tr> <tr> <td>d. correspondence</td> <td style="text-align: center;"><input type="text"/></td> <td>What percentage?</td> <td style="text-align: center;"><input type="text"/></td> </tr> <tr> <td>f. other</td> <td style="text-align: center;"><input type="text"/></td> <td>What percentage?</td> <td style="text-align: center;"><input type="text"/></td> </tr> </table>	a. traditional classroom	<input type="text"/>	What percentage?	<input type="text"/>	b. blended (traditional and online)	<input type="text"/>	What percentage?	<input type="text"/>	c. e-learning	<input type="text"/>	What percentage?	<input type="text"/>	d. correspondence	<input type="text"/>	What percentage?	<input type="text"/>	f. other	<input type="text"/>	What percentage?	<input type="text"/>
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Comments: <b>Traditional Class Room Theory Classes (50%) and Practical Laboratory Sessions (25%), Others (25 %).</b>																				

## B Objectives

1. What is the main purpose for this course?

- **Recognize the role and basic underlying principles of the different body systems in regulating the internal environment.**
- **Explain how different body systems achieve their functions and how these functions are regulated and interrelated.**
- **List the normal values of important physiological parameters and interpret such values when given.**
- **Predict the effects of disease processes on the normal functions and how the body responds & compensates for such disturbances.**
- **Acquire preliminary skills in using laboratories techniques commonly encountered in pre clinical practice.**

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

**This course is revised on yearly basis and recent advances and techniques in human physiology are introduced. Students and instructors are encouraged to go through Web-based knowledge and IT technology.**

**C. Course Description** (Note: General description in the form used in Bulletin or handbook)

Course Description:

- Definition of physiology.
- The relationship between Man & his environment so as to identify the place of human physiology in the study of medicine as a health & social science.
- The structure & function of the human cell.
- The specialized organelles in eukaryotic cells and their physiology.
- Physiological review of cytoskeleton.
- The cell junctions and their role in transport. desmosomes, tight and gap junctions
- The functional organization of the organ systems of the human body in order to develop a holistic approach to the study of medicine.
- The membrane concept.
- The biological membranes as lipid bilayers, & the membrane proteins and their function
- The basic principles of forces for movements of fluids & electrolytes across the biological membranes.
- Definition and basic properties of the cell receptors.
- The regulation of receptor activity.
- The receptor organs.
- The second messenger system.
- The concepts of the internal environment & its constancy as an important condition for normal health.
- The role and the basic underlying of principles of different body systems in regulating the internal environment.
- The normal composition of the human subject including, water, proteins, lipids, & minerals.
- Abnormal conditions in relation to disturbances of body fluid & electrolytes i.e. in disease processes, such as dehydration, edema, hyper- & hypo-osmolarity & acid base balance.
- Definition of the control systems & their properties.
- The components of the control systems.
- Definition of homeostasis.
- Define the pH & identify the normal range of pH of the body & how it is regulated.
- The role of buffers, respiratory, & renal systems in acid - base balance.
- The relationships between the body electrolytes & acid base disturbances.
- The basic properties of cell membranes, which underlie the process of excitation.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
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Structure and Function of Cell.	1	2
Specialized organelles and their Physiology.	1	2
Physiology of Cytoskeleton.	1	2
Cell Junctions.	1	2
Biological Membranes.	1	2
Control System and Homeostasis. Defense and Immunity, Cell Disorders.	1	2
Regulation of Body Temperature. Skin Physiology	1	2
Normal and abnormal composition of Human body fluids.	1	2
Movement across the membranes.	1	2
Metabolism& Basal Metabolic Rate.	1	2
Cell Membranes and Excitation, Muscle Physiology .	1	2
PH and its regulation,& Acid Base Balance.	1	2
Organization of GIT Digestion and absorption of lipids, carbohydrates &proteins..	1	2
Organization of nervous system and synaptic transmission.	1	2
Sympathetic and Parasympathetic Nervous System.	1	2
<b>Total</b>	<b>15</b>	<b>30</b>

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planned	30			15		30 +15
	Actual	30			15		30 + 15
Credit	Planned	2			1		2 +1
	Actual	2			1		2 +1

3. Additional private study/learning hours expected for students per week.

**2 hours per week (Student / teacher Office hours)**

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

**On the table below are the five NQF Learning Domains, numbered in the left column.**

**First**, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	Strategic teaching by making decisions about a course, an individual class, or even an entire curriculum, beginning	Positive behavior, Establish a Code of Conduct, Self-Motivation, Reinforce Positive Actions.	Formative Assessment, Summative Assessment, Assessment for / as Learning
1.2			
<b>2.0</b>	<b>Cognitive Skills</b>		
2.1	Mechanisms of how to learn, remember, problem-solve.		
2.2			
<b>3.0</b>	<b>Interpersonal Skills &amp; Responsibility</b>		
3.1	Ability to take the accountability for continued personal and professional learning and development.		
3.2	Ability to be able to work independently and as in groups including leadership responsibilities		
<b>4.0</b>	<b>Communication, Information Technology, Numerical</b>		
4.1	Stresses the role of unified communications and the integration of telecommunications		
4.2			
<b>5.0</b>	<b>Psychomotor</b>		
5.1	Physical skills such as movement, coordination, manipulation, dexterity, grace, strength.		
5.2	Speed actions which demonstrate the fine motor skills, such as use of precision instruments or tools.		

#### 5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Continuous Assessment	4	25 %
2	Practical / Laboratory skill Assessment	10	25 %
3	Final Assessment	16	50 %
4			
5			
6			
7			
8			

#### D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultation and academic advice. (include amount of time teaching staff are expected to be available each week)

2 hours per week

#### E. Learning Resources

1. List Required Textbooks

- **Textbook of Physiology by Elaine & Marieb.**
- **Anatomy and Physiology by Ross and Wilson**

2. List Essential References Materials (Journals, Reports, etc.)

- **Principles of Anatomy and Physiology by Tortora GJ & Anagnostakos NP.**
- **Text Book of Medical Physiology by Guyton AC.**

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

[https://www.cellsalive.com/toc\\_cellbio.htm](https://www.cellsalive.com/toc_cellbio.htm)  
<https://www.nature.com/ncb/>

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

**Human Physiology: From Cells to Systems (with CD-ROM and InfoTrac)**

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

**Classroom having 75 students and laboratory having 25 students approximately**

2. Technology resources (AV, data show, Smart Board, software, etc.)

**Multimedia, Smart board etc.**

**Cell Biology Laboratory Manual** – by Dr. William H. Heidcamp, Gustavus Adolphus College

**Microscope Basics and Beyond** – A Pamphlet by Mortimer Abramowitz, Olympus

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

**Interactive CD series on physiology of different body systems.**

**Computer simulation of general physiology.**

**Desktop computers are available in the Faculty but each department needs its own classrooms and computers**

### **G. Course Evaluation and Improvement Processes**

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

**Question / answer Sessions / Discussions**

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department

**Class room presentations**

3. Processes for Improvement of Teaching

**Goal-directed practice coupled with targeted feedback to enhances the quality of students' learning.**

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

**Prior knowledge, recall and understanding; analysis and critical thinking skills; synthesis and creative thinking skills; problem solving skills; and application and performance skills**

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

**Hands-on practice opportunities, Capture student interest by activating prior knowledge.**

**Effectively Communicate with Visual Aids**

Course Coordinator: **Dr. Syed Tabrez Ali**

**Professor, Department of Physiology**

**College of Medicine**

**Umm Al Qura University, Makkah, Saudi Arabia**