Course Specification

(Postgraduate Programs)

Course Title:	**Anatomy and Physiology**
Course Code:	**BIO 6211**
Program:	**Executive Master of Forensic Science**
Department:	**Biology and Chemistry**
College:	**Science**
Institution:	**Imam Mohammad Ibn Saud Islamic University**
Version:	**1**
Last Revision Date:	**29 September 2024**

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A. General information about the course:

1. Course Identification:

1. Credit hours: 3 (2 lectures, 2 laboratories, 0 tutorials)				
2. Course type				
A.	☐University	☐College	☒ Program	☐Track
B.	☒ Required		☐Elective	
3. Level/year at which this course is offered: (Level 3 l Year 2)				
4. Course General Description:				
This course enables students to develop an understanding of the relationships between the structures and functions of the human body. Students will also learn the mechanisms for maintaining homeostasis within the human body. This course will involve laboratory activities, projects, dissections, textbook material, models, diagrams, journal writings, and clinical studies. The following website will also be used for most text/ lecture related homework assignments.				
5. Pre-requirements for this course (if any)**:**				
None				
6. Co-requirements for this course (if any)**:**				
None				
7. Course Main Objective(s):				
At the end of the course, the students will be able to 1. Use anatomical terminology to identify and describe locations of major organs of each system covered. 2. Explain interrelationships among molecular, cellular, tissue, and organ functions in each system. 3. Describe the interdependency and interactions of the systems. 4. Explain contributions of organs and systems to the maintenance of homeostasis and identify causes and effects of homeostatic imbalances. 5. Describe modern technology and tools used to study anatomy and physiology.				

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage

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

3. Contact Hours: (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	-
4.	**Tutorial**	-
5.	**Others (specify)……**	-
	Total	60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Describe the general body organization and anatomical terminology	K1	Interactive Lecture Discussion and Dialogue Mind Maps Concept Maps Standard Method Inductive Method Self-Learning Cooperative Learning Field Visits	Written tests Class discussion questions Class assignments Homework Short research/reports Summaries Presentations
1.2	Outline the structure and function of cell, tissues, skin, skeletal system, muscular	K1, K2	Interactive Lecture Discussion and Dialogue Mind Maps	Written tests Class discussion questions

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	system		Concept Maps Standard Method Inductive Method Self-Learning Cooperative Learning Field Visits	Class assignments Homework Short research/reports Summaries Presentations
2.0	**Skills**			
2.1	Explain in-depth understanding the principles of anatomy and physiology and their interrelationships	S1	Practical Application Microteaching Modeling and Simulation Project-Based Learning Discovery Learning Collaborative Learning	Observation / Rating Scales Practical Tests Self-Assessment Peer Assessment
2.2	Interpret a basic understanding of the integration of organ systems to maintain homeostasis	S1, S2, S3	Practical Application Microteaching Modeling and Simulation Project-Based Learning Discovery Learning Collaborative Learning	Observation / Rating Scales Practical Tests Self-Assessment Peer Assessment
2.3	Summarize practical knowledge of physiological techniques	S1, S2, S3	Practical Application Microteaching Modeling and Simulation Project-Based Learning Discovery Learning Collaborative Learning	Observation / Rating Scales Practical Tests Self-Assessment Peer Assessment
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate the ability to condense	V1	Modeling Dialogue and	Observation Self-

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	raw data into meaningful values and then assessing the resulting trends is a key skill in a number of vocations, both within science and in other areas		discussion Self-learning Collaborative learning	assessment Peer assessment Achievement file
3.2	Illustrate skills of group discussions and work dynamically as a team member and be effective in sharing ideas and engaging in fruitful discussion	V1, V2	Modeling Dialogue and discussion Self-learning Collaborative learning	Observation Self-assessment Peer assessment Achievement file

C. Course Content:

No	List of Lecture Topics	Contact Hours
1.	Cell structure and function: Membrane structure, lipids, proteins and carbohydrates in cell membranes. Role of cell membrane in transport of material into and out of the cell. Cell organelles, cytoskeleton, and projections from cell membrane. The nucleus. Chromosomes. Basic structure of DNA and RNA. Synthesis of proteins, karyotyping, cell division. Chromosomal sex and sex chromatin. Abnormal cell growth and tumors.	8
2.	Introduction to body function: External and internal environment, homeostasis. Negative and positive feedback mechanism. Essential body function- procuring and ingestion of food, respiration, excretion of waste products. Need for movement. Mode of communication within the body. Importance of electrolytes, acids and alkalis, carbohydrates, proteins and fats in the body.	7
3.	Tissues of the body: epithelia and glands. Classification of epithelia, types of glands, their classification and function. Connective tissues- basic component, cell in general connective tissues. Different forms of connective tissues, fibers of connective tissues, cells of connective tissues- adipose tissue. Functions of connective tissues. Cartilage, structure, types of cartilage, gross structure of bones, elements	8

	comprising bone tissue. Lamellar bone, woven bone, cancellous bone. Structure of compact bone, periosteum, formation of bone, development of a typical long bone, fracture healing.	
4.	Skin and its appendages-structure and functions, pigmentation, blood and nerve supply. Structure of hair and hair follicle, hair cycle- anagen, catagen, telogen. Arrector pilli, muscles, sebaceous glands, nails, sweat gland. Musculoskeletal, striated, non-striated, voluntary, involuntary. Organization of muscle fibers in muscle. Tendons. Nerves tissues-neuron structure, type of neurons, synapse, grey and white matter, peripheral nerves and ganglia.	7
Total		**30**

No	List of Laboratory Topics	Contact Hours
1.	The Biometry: (fingerprints, palm prints, footprints, ear prints and lip prints)	3
2.	Osteology	3
3.	Odontology	3
4.	Inspection of the crime scene for different cases of death	3
5.	Signs of death - causes of death - sudden natural death and its implications - death related to drug and poison abuse - death as a result of Asphyxia - suicide and its implications.	3
6.	Identification of the deceased - body parts in terrorist crimes - burns and fire deaths.	3
7.	Methods for sampling laboratory analysis from the deceased body.	3
8.	Cardiac arrest tutorials	3
9.	Human remains	3
10.	Histological identifications of human tissues and traces	3
Total		**30**

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes, oral test, oral presentation, group project, essay, and Attendance	During the semester	30%
2.	Midterm Exam	8th week	30%
3.	Final Exam	16th week	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities:

1. References and Learning Resources:

Essential References	Human Anatomy and Physiology , Marieb and Hoehn , 11st edition ISBN-13 : 978-0134580999, ISBN-10 : 0134580990 Textbook of Medical Physiology Guyton and Hall Date of Publication: 06/2020 Elsevier ISBN Number 9780323597128
Supportive References	None
Electronic Materials	None
Other Learning Materials	None

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms and Laboratories
Technology equipment (Projector, smart board, software)	Projector and Smart board
Other equipment (Depending on the nature of the specialty)	Forensic Science-related instruments, including safety cabinet, centrifuges, incubators, thermal cyclers, trans-illuminators, gel electrophoresis apparatus

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct
Effectiveness of students' assessment	Program Leaders	Direct
Quality of learning resources	Peer Reviewer	Indirect
The extent to which CLOs have been achieved	Program Leaders	Direct
Other	-	-

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	**Department of Biology Council**
REFERENCE NO.	**Meeting No. 6**

DATE	**29/9/2024**