

**INTER-AMERICAN UNIVERSITY OF PUERTO RICO  
METROPOLITAN PRECINCT  
FACULTY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF NATURAL SCIENCES**

**Syllabus**

**I. Overview**

Course Title:	Anatomy and Human Physiology
Course code and number:	BMSC 3011
Credits:	3
Academic Term:	2022-13
Professor:	Claribel Luciano-Montalvo, Ph.D.
Office Hours:	Monday and Wednesday (9-10am) Tuesday and Thursday (9-10am)
Academic counseling time	Monday (4-5pm)
Office Phone:	(787) 250-1912
Email:	cluciano@intermetro.edu

**II. Description**

Study of concepts of histology coupled with the anatomy of the following systems: integumentary, skeletal, muscular and nervous systems. The concepts of the human body will be reviewed using both anatomical and physiological point of views. It requires 30 hours of conference that includes self-study of some topics and 45 hours of laboratory.

**III. Objectives**

It is expected that, at the end of the course, the student will be able to:

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1. Recognize the anatomical and physiological terminology used to analyze and correlate the different systems studied in the course.
2. Explain the morphological and functional aspects of the different organs and systems of the human body.
3. Correlate the different physiological mechanisms and how it contributes to maintaining homeostasis.
4. Identify and mention the function of body tissues.
5. Explain the anatomy and physiology of the Integumentary System, the Skeletal System, Muscular System, and the Nervous System.
6. Use ethical reasoning to make informed, responsible decisions while discussing diseases.

#### **IV. COMPETENCIES OF THE PROFILE OF THE GRADUATE THAT ARE ATTENDED IN THIS COURSE:**

- a. Effective communication (written/verbal/auditory).
- b. Solve problems using the right methodology and knowledge integration.

#### **V. THEMATIC CONTENT**

##### **A. Homeostasis**

1. Homeostatic cycle
2. Receptor
3. Afferent or sensory pathway
4. Integration center
5. Via efferent or motor
6. Effector
7. Positive feedback mechanism
8. Negative feedback mechanism
9. Variables affecting homeostasis

##### **B. Cellular Physiology**

1. Structure of the cell membrane
2. Compartments of body fluids
3. Movement across the membrane
4. Types of cellular transport
5. Distribution of water and solutes in the body
6. Osmotic, chemical and electrical balance
7. Osmosis, osmolarity and osmolality
8. Tonicity

##### **C. Anatomical Terminology**

1. Directional Terms
2. Cavities
3. Regions or quadrants
4. Plans

##### **D. Types of Tissues**

1. function
  - A. Classification of Tissue and location
    1. epithelial tissue
    2. connective tissue
    3. muscle tissue
    4. nerve tissue

## **E. Integumentary System**

### 1. Function of the Integumentary System

- A. skin
  - a. dermis
  - b. epidermis
  
- B. Homeostatic imbalance
  - a. burns
  - b. skin cancer
  - c. skin aging
  - d. spots

## **F. Skeletal System**

- 1. Function of the Skeletal System
- 2. Classification of bones
- 3. Bone structure
- 4. Bone homeostasis
- 5. Homeostatic imbalances
- 6. Skeleton Divisions
  - a. axial
  - b. appendicular

## **G. Muscular System**

- 1. Function of the Muscular System
- 2. Muscle Tissue- Classification
- 3. Muscle contraction
- 4. Regulation of muscle contraction
- 5. Types of contraction
- 6. Effect of exercise

## **H. Nervous system**

- 1. Nervous System Function
- 2. Cells – Anatomy and Physiology
- 3. Neurons
- 4. Neuroglia
- 5. Classification
  - A. Central
  - B. Peripheral
- 6. Anatomical structure and function of the spinal cord
- 7. Brain and cranial nerves
- 8. Nerve interaction
- 9. Autonomic nervous system

## B. Calendar

It will be discussed in the course and a copy will be placed on Blackboard.

It is important that you fill out the Acknowledgement on Blackboard.

## C. Activities

- A.Conferences
- B.Face-to-face and virtual laboratories using the resources available on the Web.
- E.Demonstrations
- F.Oral and/or written reports

## D. evaluation

The evaluation of the course will be based on the execution of the partial examinations, final laboratory examination, laboratory work and others.

The final grade will be calculated on the basis of 100% as follows:

component	description	percentage
4 midterms Works in class # # (If you are absent these points you will not be able to replace them)	40 points on Blackboard Includes practical part in "Connect*" (10 points)	75%
Laboratory activities <ul style="list-style-type: none"><li>•Laboratories in "Connect",other digital or face-to-face experiences (15%)</li><li>•Final Exam (10%)</li></ul>	Final lab exam Connect activities	25%
* The course and lab use the McGraw Hill Connect Platform for their assessments. In addition, it is used to supplement and/or carry out complete laboratory experiences. This tool is indispensable to complete the course material.		

## E. SPECIAL NOTES

### A. Auxiliary services or special needs

Any student who requires auxiliary services or special assistance must request them at the beginning of the course or as soon as he becomes aware that he needs them, through the corresponding registration, in the Office of Orientation with Dr. María de los Ángeles Cabello, Coordinator of services to students with disabilities, office 111, ext. 2306.

## **B. Honesty, fraud and plagiarism**

Dishonesty, fraud, plagiarism and any other inappropriate behavior in relation to academic work constitute major infractions sanctioned by the General Regulations of Students. Major infractions, as provided for in the General Regulations of Students, may result in the suspension of the University for a defined period of more than one year or the permanent expulsion from the University, among other sanctions.

## **C. Use of electronic devices**

Cell phones and any other electronic devices that could disrupt teaching and learning processes or alter the environment conducive to academic excellence will be disabled. Pressing situations will be addressed, as appropriate. The use of electronic devices that allow access, storage or sending data during evaluations or exams is prohibited.

## **D. Compliance with the provisions of Title IX**

The Federal Higher Education Act, as amended, prohibits discrimination on the basis of sex in any academic, educational, extracurricular, athletic, or any other program or employment, sponsored or controlled by an institution of higher education regardless of whether it is performed on or off the premises of the institution, if the institution receives federal funds.

As provided by applicable federal regulations, our academic unit has appointed a Title IX Assistant Coordinator to provide assistance and guidance in connection with any alleged incident constituting sex or gender discrimination, sexual harassment or sexual assault. You can contact the Assistant Coordinator at the telephone number Mr. George Rivera, extension 2262 or 2147, or at the email griverar@metro.inter.edu.

The Normative Document entitled **Rules and Procedures for Dealing with Alleged Violations of the Provisions of Title IX** is the document that contains the institutional rules for channeling any complaint that is filed based on this type of allegation. This document is available on the portal of the Inter-American University of Puerto Rico

## **F. Bibliography**

1. **Cinnamon VanPuttle, Jennifer Regan and Andrew Russo (2018). Seeley's Essentials of Anatomy and Physiology, 12<sup>th</sup> edition. Mc Graw Hill. N. Y. 10121.**
2. Kenneth Saladin and Robin Mc Farland (2017). *Essentials of Anatomy & Physiology*, 2<sup>th</sup> edition. Mc Graw Hill. N. Y. 10121.

NOTE: THE PAST RECORD MAY BE SUBJECT TO CHANGE ACCORDING TO THE TEACHER'S UNDERSTANDING.

CLM 2021