Northern Marianas College
CURRICULUM ACTION REQUEST

Effective Semester / Session: Fall 2023

Type of Action:

__ New
_X_ Modification
__ Move to Inactive (Stop Out)
__ Cancellation

Course Alpha and Number: BI 251

Course Title: Human Anatomy and Physiology I

Reason for initiating, revising, or canceling:
Additional compensation of 1 credit is being added to the course guide for the extra time and effort associated with the lab preparation

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Florita C Cabanes (Sep 12, 2023 15:56 GMT+10)
Florita Cabanes — Sep 12, 2023

Proposer — Date

Velma C. Deleon Guerrero (Sep 12, 2023 16:09 GMT+10)
Velma C. Deleon-Guerrero — Sep 12, 2023

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Adam M. Walsh (Sep 13, 2023 22:04 GMT+10)
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Language & Format Review Specialist — Date

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Academic Council Vice Chair — Date

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Lorraine Cabrera Maui — Sep 13, 2023

Interim Dean of Academic and Program Services — Date

Northern Marianas College
Course Guide

Course: BI 251 Human Anatomy and Physiology I

1. **Department**:
   Sciences, Mathematics, Health and Athletics

2. **Purpose**
   The purpose of this course is to provide students in nursing, health care programs, and all other interested students with knowledge of human anatomy and physiology. Human Anatomy and Physiology I is the first semester of a two-semester sequence of courses in human anatomy and physiology.

3. **Description**

   A. Required/Recommended Textbook(s) and Related Materials
   Required:
   Rizzo, D. C. (2016). *Fundamentals of Anatomy and Physiology* (4th ed.). Cengage Unlimited: http// www.cengage.com.

   Reference book:
   Seeley, R., VanPutte, C., Regan, J., & Russo, A. (2011). *Seeley's Anatomy & Physiology* (9th ed., 10th ed or 11th ed). New York, NY: McGraw Hill.

   B. Contact Hours
   1. **Lecture:** 3 hours per week / 45 hours per semester
   2. **Lab:** 3 hours per week / 45 hours per semester
   3. **Other:** N/A

   C. Credits
   1. **Number: 4**
   2. **Type:** Regular degree credits

   D. Catalog Course Description
   This is the first part of a two-semester course covering human anatomy and physiology at the biochemical, cellular, microscopic, tissue, and organism levels. In this course, all body systems are presented, discussed, and integrated with one another. This course is designed for those entering the professional health care field, although enrollment is open to all students. Laboratory and field trips may be required. Prerequisites: BI101 and CH124 with a grade of ‘C’ or better. (Offered Fall).

Northern Marianas College
Course Guide

Course: BI 251 Human Anatomy and Physiology I

E. Degree or Certificate Requirements Met by Course
This course is a prerequisite for the Nursing Degree Program and a requirement for the Liberal Arts emphasis in Health and Physical Education degree, and serves as an elective course for other degree programs.

F. Course Activities and Design
This course includes lectures, group work, discussions, laboratory activities, homework, web-based assignments, video and PowerPoint presentations, periodic quizzes, tests, field trips, comprehensive final exam, and research projects that require oral and paper presentations.

4. Course Prerequisite(s); Concurrent Course Enrollment
Prerequisites**:** BI 101 and CH 124 with a grade of "C" or better
Concurrent Course Enrollment: None

Required English/Mathematics Proficiency Level(s):
English Placement Level: EN 202
Mathematics Placement Level: MA 132

5. Estimated Cost of Course; Instructional Resources Needed
Cost to the Student: Tuition for a 4-credit hour course, laboratory fee, cost of textbook and laboratory manual, and research project materials.

Cost to the College: Instructor's salary for 5 credits, encompassing 4 credits plus an additional 1 course credits to accommodate the instruction of a science lab.

Instructional resources needed for this course include expendable supplies for laboratory and classroom, some forms of digital technology, and anatomical models

6. Method of Evaluation
Student grades will be based on class attendance and participation, homework completion, papers and oral presentations, in-class and online quizzes and exams, laboratory exercise completion, and practical exams. NMC's grading and attendance policies will be followed.

Northern Marianas College
Course Guide

Course: BI 251 Human Anatomy and Physiology I

7. Course Outline

This is a topical outline and does not necessarily indicate the sequence in which the material will be presented.

1.0 An Introduction to the Human Body
- 1.1 Definition of anatomy and physiology
- 1.2 Anatomical terms, planes, and directions

2.0 The Tissue Level of Organization
- 2.1 Types of tissues and their organs
- 2.2 Membranes
- 2.3 Tissue repair

3.0 The Integumentary System
- 3.1 Skin structure and layers
- 3.2 Associated structures of epidermis
- 3.3 Homeostasis and wound healing

4.0 The Skeletal System
- 4.1 Structure and functions of bone tissue
- 4.2 Bone growth and development
- 4.3 Homeostasis and healing of bone
- 4.4 Axial skeleton
- 4.5 Appendicular skeleton

5.0 Articulations
- 5.1 Classification of joints
- 5.2 Body movements
- 5.3 Disorders of joints and treatment

6.0 The Muscular System
- 6.1 Types of muscle tissue and their functions
- 6.2 Structure of skeletal, smooth, and cardiac muscles
- 6.3 Sliding filament theory of muscle contraction
- 6.4 Control of muscle contraction
- 6.5 Muscle metabolism
- 6.6 Muscular disorders and injuries

7.0 The Nervous System
- 7.1 Divisions of the nervous system
- 7.2 Neurons and glial cells
- 7.3 Action potential and transmission of impulses
- 7.4 Neurotransmitters
- 7.5 Spinal and cranial nerves
- 7.6 Anatomy and functions of the brain and spinal cord
- 7.7 Somatic, motor, and integrative systems
- 7.8 Disorders of the nervous system

8.0 The Special Senses
- 8.1 Types of special senses and their functions
- 8.2 Other senses

9.0 The Endocrine System
- 9.1 Endocrine glands and classes of hormones
- 9.2 Mechanisms of hormone action
- 9.3 Hormonal disorders

8. Instructional Goals

The course will introduce students to:

1.0 Appropriate vocabulary and anatomical terms used in describing structures, functions, and locations;

2.0 The difference between and interrelationship of “anatomy” and “physiology”;

3.0 Structure and functions of the epidermis;

4.0 Structure and functions of the human skeleton;

5.0 Muscle contraction through the “sliding filament theory”;

6.0 Types of muscle tissue;

7.0 Divisions of the nervous system and their functions;

8.0 Nerve structures and functions in production of and propagation of impulses;

9.0 Structure and function of special sense organs;

10. Endocrine control and its role in homeostasis;

11. The anatomical structure of the human body; and

12. Uses of anatomy and physiology knowledge in real-world situations.

9. Student Learning Outcomes

Upon successful completion of this course, students will be able to:

1.0 Demonstrate a vocabulary of appropriate terminology to effectively communicate information related to human anatomy and physiology;

2.0 Connect anatomical structures and physiological function;

3.0 Explain the process of epidermal strata formation and regeneration;

4.0 Explain the process of bone formation;

5.0 Explain the process of muscle contractions through the sliding filament theory;

6.0 Classify types of muscle tissue;

7.0 Differentiate between divisions of the nervous system;

8.0 Explain an action potential and its propagation;

9.0 Explain how the special senses work;

10. Explain homeostatic regulation through endocrine control;

11. Recognize anatomical structures of systems; and

12. Synthesize ideas to make connections between knowledge of anatomy and physiology and real-world situations

Northern Marianas College
Course Guide

Course: BI 251 Human Anatomy and Physiology I

10. Assessment Measures of Student Learning Outcomes

Assessment of student learning may include, but not be limited to, the following:

1.0 Quizzes;

2.0 Exams;

3.0 Homework;

4.0 Laboratory activities and reports; and;

5.0 Projects and presentations.

BI 251 Human Anatomy and Physiology I (FALL 2023)

Final Audit Report 2023-09-13

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