

Northern Marianas College

CURRICULUM ACTION REQUEST

Effective Semester / Session: Spring 2020

Type of Action:

- New
- Modification
- Move to Inactive (Stop Out)
- Cancellation

Course Alpha and Number: BI252

Course Title: Human Anatomy and Physiology II

Reason for initiating, revising, or canceling:

This course has been modified for periodic updates. Substantive changes were made in the description, course outline, instructional goals, and student learning outcomes.

Florita Cabanes *Florita Cabanes* 11/22/2019

Proposer Date

Velma C. Deleon-Guerrero *[Signature]* 11/22/2019

Department Chair Date

Adam Walsh *[Signature]* 12.02.19

Language & Format Review Specialist Date

Ajani Burrell *[Signature]* 12.2.19

Academic Council Chair Date

Charlotte Cepeda *[Signature]* 12/3/19

Dean of Learning & Student Success Date

Course: BI252—Human Anatomy and Physiology II

1. Department

Science, Math, Health, and Athletics

2. Purpose

This course will provide students in nursing and health care programs or any other interested students with knowledge of human anatomy and physiology. Human Anatomy and Physiology II is the second course of a two-course sequence of studies.

3. Description

A. Required/Recommended Textbook(s) and Related Materials

Required:

VanPutte, C., Regan, J., Russo, A., & Seeley, R. (2017). *Seeley's Anatomy & Physiology* (11th ed.). New York: McGraw-Hill Companies, Inc.

Wise, Eric (2017). *Laboratory Manual for Seeley's Anatomy & Physiology* (11th ed.). New York: McGraw-Hill Companies, Inc.

Recommended: N/A

B. Contact Hours

1. **Lecture:** 3 per week / 45 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. Catalogue Course Description

This is the second part of a two-semester sequence covering human anatomy and physiology at the biochemical, cellular, microscopic, tissue, and organ levels. This course is designed for those entering professional health care fields, although enrollment is open to all students. Laboratory and field trips are required. Prerequisite: BI251. English Placement Level: EN202. Math Placement Level: MA132. (Offered Fall and Spring)

E. Degree or Certificate Requirements Met by Course

This is a required course for Liberal Arts emphasis in Health and PE; an elective course requirement; and a requirement for the Nursing Degree Program.

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F. Course Activities and Design

This course includes lectures, discussions, group work, laboratory activities, homework and web-based assignments, video and slide presentations, quizzes, tests, field trips, research projects, and oral presentations.

4. Course Prerequisite(s); Concurrent Course Enrollment

Prerequisites: BI251 with a "C" or better for Nursing program and LA with emphasis on Health and PE

Concurrent Course Enrollment: None

Required English/Mathematics Proficiency Level(s)

English Placement Level: EN202

Mathematics Placement Level: MA132

5. Estimated Cost of Course; Instructional Resources Needed

Cost to the Student: Tuition for a 4-credit hour course, laboratory fee, cost of the textbook and lab manual.

Cost to the College: Instructor's salary; science lab/classroom

Instructional resources needed for this course include: replacement of expendable laboratory materials, whiteboard and markers, computer, internet connection, anatomical models, and reference materials.

6. Method of Evaluation

Student grades will be based on assignments, quizzes, tests, projects, presentations, laboratory activities, and reports. NMC's grading and attendance policies will be followed.

7. Course Outline

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

- 1.0 The Cardiovascular System
 - 1.1 Anatomy and functions of the heart and vessels
 - 1.2 Composition and functions of blood
 - 1.3 Route of blood and lymph
 - 1.4 Hemostasis
 - 1.5 Regulation of heartbeat
 - 1.6 Components and functions of the lymphatic system

- 2.0 The Respiratory System
 - 2.1 Anatomy and physiology of the respiratory system
 - 2.2 Measurement of lung function
 - 2.3 Physical principles of gas exchange
 - 2.4 Regulation of ventilation

- 3.0 The Digestive System
 - 3.1 Anatomy and physiology of the digestive system
 - 3.2 Enzymes of digestion and other chemical substances

- 4.0 Nutrition, Metabolism, and Temperature Regulation
 - 4.1 Nutrition
 - 4.2 Metabolism of organic compounds
 - 4.3 Metabolic rate
 - 4.4 Body temperature and regulation

- 5.0 The Urinary System
 - 5.1 Anatomy and physiology of the urinary system
 - 5.2 Regulation of urine concentration and volume
 - 5.3 Plasma clearance and tubular maximum

- 6.0 Water, Electrolyte, and Acid-Base Balance
 - 6.1 Fluid balance and homeostasis
 - 6.2 Electrolytes
 - 6.3 Regulation of acid-base balance

- 7.0 The Reproductive System
 - 7.1 Anatomy and physiology of the male and female reproductive system
 - 7.2 Female reproductive and menstrual cycle

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- 8.0 Development, Growth, and Aging
 - 8.1 Prenatal development
 - 8.2 Parturition
 - 8.3 The newborn
 - 8.4 First year after birth
 - 8.5 Aging and death

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8. Instructional Goals

The course will introduce students to:

- 1.0 The structures and functions of the cardiovascular system, lymphatic system, respiratory system, digestive system, urinary system, and reproductive system;
- 2.0 Innate and adaptive immunity;
- 3.0 Basic nutritional concepts and metabolism;
- 4.0 Homeostatic role of buffers in the body's acid-base balance;
- 5.0 Changes in the human body associated with puberty;
- 6.0 The female reproductive cycle: menstruation, menopause, and aging;
- 7.0 Embryonic and fetal development, parturition and changes at birth and first year after birth, aging and death; and
- 8.0 Uses of anatomy and physiology knowledge in real-world situations.

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9. Student Learning Outcomes

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

- 1.0 Identify the structures of the cardiovascular system, lymphatic system, respiratory system, digestive system, urinary system, and reproductive system;
- 2.0 Describe the functions of the cardiovascular system, lymphatic system, respiratory system, digestive system, urinary system, and reproductive system;
- 3.0 Explain the route of blood and lymph circulation;
- 4.0 Describe the immune responses of the body;
- 5.0 Design a meal plan based on basal metabolic rate and nutrient requirement;
- 6.0 Describe the role of buffers in the body's acid-base balance;
- 7.0 Explain the female reproductive and menstrual cycle;
- 8.0 Outline the developmental changes from embryo to first year after birth and changes associated with puberty and aging; and
- 9.0 Synthesize ideas to make connections between knowledge of anatomy and physiology and real-world situations.

10. Assessment Measures of Student Learning Outcomes

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

- 1.0 Assignments;
- 2.0 Quizzes and Tests;
- 3.0 Laboratory Activities and Reports;
- 4.0 Projects and Presentations; and
- 5.0 Cumulative Final Exam.