BI 013: HUMAN ANATOMY AND PHYSIOLOGY I

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Originator
msilveira

Justification / Rationale
Update SLOs

Effective Term
Fall 2019

Credit Status
Credit - Degree Applicable

Subject
BI - Biology

Course Number
013

Full Course Title
Human Anatomy and Physiology I

Short Title
ANAT & PHYS I

Discipline

Disciplines List
Biological Sciences

Modality
Face-to-Face

Catalog Description
This course involves an integrated study of human body organization and function. Topics include anatomical terminology, cells and tissues, the integumentary system, the skeletal system, articulations, the muscular system, the nervous system, and special senses. This is the first part of a two-course sequence that studies the fundamental concepts of anatomy and physiology and provides a foundation for advanced study of the human body. Both BI 013 and BI 014 must be taken to study all of the major body systems. This two-course sequence is designed to meet the prerequisites for health professional programs, e.g. nursing, physical therapy.

Schedule Description
First of a two course sequence that offers an in depth study of the human body. This course covers anatomical terminology, cells and tissues, the integumentary system, the skeletal system, articulations, the muscular system, the nervous system and special senses. Prerequisite: MATH 054 Advisory: ENG 061 IGETC: 5B, 5C

Lecture Units
3

Lecture Semester Hours
54

Lab Units
1

Lab Semester Hours
54

In-class Hours
108

Out-of-class Hours
108

Total Course Units
4

Total Semester Hours
216

Prerequisite Course(s)
MATH 054
Advisory: ENG 061

Required Text and Other Instructional Materials

Resource Type
Book

Author
Elaine N. Marieb and Katja Hoehn

Title
Human Anatomy and Physiology

Edition
11th

City
San Francisco

Publisher
Pearson

Year
2019

College Level
Yes

Flesch-Kincaid Level
12

ISBN #
9780134580999

Resource Type
Book

Author
Alexa Sawa

Title
Anatomy Physiology 01 (CUSTOM) (College of Desert)

City
San Francisco

Publisher
Pearson

Year
2016

College Level
Yes

Flesch-Kincaid Level
12

ISBN #
9781323357873

Class Size Maximum
28

Entrance Skills
Demonstrate the ability to add, subtract, multiply and divide algebraic expressions.

Requisite Course Objectives
MATH 054-Understand the concepts of variables and how variables can be used to represent an unknown quantity or a range of quantities.
MATH 054-Use variables to create algebraic expressions that model quantities in an application problem.

Entrance Skills
Understand and employ exponent rules and scientific notation in scientific calculations.

Requisite Course Objectives
MATH 054-Use the properties of integer exponents to simplify algebraic expressions, including expressions involving scientific notation.

Entrance Skills
Demonstrate an awareness of critical thinking skills in oral and written communication.

Requisite Course Objectives
ENG 061-Demonstrate the ability to think critically and express ideas using various patterns of development.

Entrance Skills
Demonstrate the ability to construct focused theses on essay exams.

Requisite Course Objectives
ENG 061-Use theses to organize paragraphs into coherent analyses.
ENG 061-Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

Entrance Skills
Exhibit proficiency in correct usage of grammar, punctuation and mechanics in all composition and essays.

Requisite Course Objectives
ENG 061-Use theses to organize paragraphs into coherent analyses.
ENG 061-Recognize features of style such as purpose, audience and tone integrate these elements into academic and professional writing.
ENG 061-Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

Course Content
1. Anatomical regions, positions and terminology.
2. Overview of levels of body organization.
3. Overview of chemical principles including ions, acid-base chemistry and organic compounds.
4. Overview of structure and function of biological polymers.

5. Cell structure and function.
6. Organization and structure of tissue types.
7. Structure and function of the Integumentary system.
8. Microscopic and gross anatomy of the skeletal system.
9. Articulations and joint movements.
10. Microscopic and gross anatomy of the muscular system.
11. Physiology of muscle tissue.
12. Structure and function of nervous tissue.
13. Structure and function of the central nervous system.
14. Structure and function of the peripheral nervous system.
15. Autonomic nervous system activity.
16. Structure and function of the eye and ear.

Lab Content

1. Body tissues.
2. Axial skeleton.
3. Appendicular skeleton.
4. Joints of the body.
5. Gross anatomy of skeletal muscles.
6. Electromyogram.
7. Electroencephalogram.
8. Spinal nerves and cranial nerves.
9. Gross anatomy of the brain.
10. Reflexes.
11. Gross anatomy of the eye and ear.
12. Hearing tests.

Course Objectives

	Objectives
Objective 1	Use appropriate anatomical and physiological terminology in discussing principles and relationships.
Objective 2	Properly operate a compound light microscope.
Objective 3	Discuss basic chemical principles as they relate to anatomy and physiology. A thorough discussion would include topics such as ions, organic and inorganic compounds, biological polymers and acid-base chemistry.
Objective 4	Identify cellular structures and explain the function of cellular structures and cellular transport processes.
Objective 5	Compare and contrast the structure and function of the four basic adult tissue types.
Objective 6	Explain the structure of skin, including important accessory structures.
Objective 7	Explain the structure and function of bone at a chemical, microscopic, and macroscopic level.
Objective 8	Explain bone formation, growth, and repair.
Objective 9	Identify all of the bones of the body and their major markings.
Objective 10	Compare and contrast the structure and function of skeletal, cardiac, and smooth muscle.
Objective 11	Explain skeletal muscle contraction from the events associated with the somatic motor neuron through the recocking of the myosin heads.
Objective 12	Identify the major muscles of the body and state their points of attachment and actions.
Objective 13	Explain the structure and function of the eye and the ear.
Objective 14	Explain and identify basic clinical disorders, diseases, and applications, associated with each topic.
Objective 15	Integrate principles from different systems and critically evaluate clinical problems.

Student Learning Outcomes

	Upon satisfactory completion of this course, students will be able to:
Outcome 1	Apply proper terminology used to describe the structure and function of the human cell and human body.
Outcome 2	Describe how the anatomical structures influence the functions of the integumentary system.

Outcome 3	Identify and describe the parts of the musculoskeletal system.
Outcome 4	Identify and describe the anatomical structures of the nervous system and explain its function.

Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Lecture	Use of the white board for lecture notes with some Powerpoint slides. Multimedia presentations of biological phenomena.
Laboratory	Use of microscopes to view slides of human tissues. Study of bones and various models. Use of BIOPAC to collect data related to human body function. Disseaction of animal organs such as the brain and eye.

Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
Written homework	Students will apply and analyze concepts from the course in additional assignments that can include short answers or multiple choice questions.	Out of Class Only
Laboratory projects	Students will complete worksheets where interpret and paraphrase data.	In and Out of Class
Tests/Quizzes/Examinations	Exams and quizzes will require students to identify important concepts, facts, and structures. They will also be asked to describe topics.	In Class Only
Group activity participation/observation	Students will work together to construct study methods and use them in groups.	In Class Only

Assignments

Other In-class Assignments

1. Lecture exams consisting of multiple choice, true/false and essay questions.
2. Quizzes.
3. Laboratory exams with labeled specimens.
4. Laboratory data sheets.
5. Directed dissections.

Other Out-of-class Assignments

1. Short answer homework assignments.
2. Laboratory exercise review sheets.
3. Reading assignments in the class textbook.
4. Sample exams from previous semesters.

Grade Methods

Letter Grade Only

COD GE

C1 - Natural Sciences

CSU GE

B2 - Life Science
B3 - Laboratory Activity

IGETC GE

5B - Biological Science
5C - Science Laboratory

MIS Course Data

CIP Code
26.0101 - Biology/Biological Sciences, General.

TOP Code
040100 - Biology, General

SAM Code
E - Non-Occupational

Basic Skills Status
Not Basic Skills

Prior College Level
Not applicable

Cooperative Work Experience
Not a Coop Course

Course Classification Status
Credit Course

Approved Special Class
Not special class

Noncredit Category
Not Applicable, Credit Course

Funding Agency Category
Not Applicable

Program Status
Program Applicable

Transfer Status
Transferable to both UC and CSU

C-ID
BIOL 115BS

Allow Audit
No

Repeatability
No

Materials Fee
No

Additional Fees?
No

Approvals

Curriculum Committee Approval Date
3/21/2019

Academic Senate Approval Date
3/28/2019

Board of Trustees Approval Date
5/17/2019

Course Control Number
CCC000383600

Programs referencing this course
Anthropology AA-T Degree (http://catalog.collegeofthedesert.eduundefined?key=14/)
Liberal Arts: Math and Science AA Degree (http://catalog.collegeofthedesert.eduundefined?key=29/)
Public Health Science AS-T Degree (http://catalog.collegeofthedesert.eduundefined?key=37/)
Health Science AS Degree (http://catalog.collegeofthedesert.eduundefined?key=65/)
Kinesiology AA-T Degree (http://catalog.collegeofthedesert.eduundefined?key=8/)