



BROWARD COLLEGE COURSE OUTLINE

LAST REVIEW: 2010-2011

(i.e. 2006-2007)

NEXT REVIEW: 2015-2016

(i.e. 2011-2012)

STATUS: A

(A, I, D)

COURSE TITLE: Human Anatomy and Physiology I Laboratory

COMMON COURSE NUMBER: BSC 1085L

CREDIT HOURS: 1

CONTACT HOUR BREAKDOWN

(Per 16 week term)

CLOCK HOURS:

(Voc. Course ONLY)

Lecture: Lab: 32

Clinic: Other:

PREREQUISITE(S):

COREQUISITE(S): BSC 1085

PRE/COREQUISITE(S):

COURSE DESCRIPTION *(750 characters, maximum):*

Laboratory exercises coordinated with BSC 1085 including microscope observation, experimentation, study of anatomical models, and dissection. Dissection exercises included. Meets Area 4A general education requirements for A.A. degree. Meets Areas 4 or 5 general education requirements for the A.S. degree. Special fee charged. CHM 1032, CHM 1040, CHM 1045 is very strongly recommended (see your program requirements).

General Education Requirements – Associate of Arts Degree (AA), meets Area(s):

Area 4A

General Education Requirements – Associate in Science Degree (AS), meets Area(s):

Area 4 or 5

General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s):

Area

UNIT TITLES

1. Reading and writing in the biological sciences
2. Fundamentals
3. The Cell
4. Tissues
5. The Skeletal System
6. The Muscular System
7. The Nervous System and Special Senses

*** Complete the following only if course is seeking general education status ***

GENERAL EDUCATION Competencies and Skills *:

In the box to the right of the Competency/Skill, enter all specific **student learning outcome** unit numbers, as indicated in the course outline (i.e. 1.1, 2.7, 4.2, 4.0 and 5.12) that apply.

Course must include <u>all</u> of the following:	
1. Read with critical comprehension**	1.0 - 1.4
2. Write clearly and coherently**	1.0 - 1.4
3. Demonstrate literacy as appropriate within a given discipline**	1.0 (b) - 1.4(b),2.1(b)-2.4(b), 3.1(b)-3.9(b), 4.1(b)-4.6(b), 5.1(b)-5.10(b), 6.1(b)-6.6(b), 7.1(b)-7.16(b),1.3(e), 2.4(e) 1.1(f), 2.3(f), 2.4(f), 3.1(f), 3.4(f), 3.9(f), 5.1(f), 7.9(f),7.11(f), 7.16(f)
4. Apply problem solving skills or methods to make informed decisions in a variety of contexts**	4.4,7.9,7.11,7.12,7.14,7.16
Course must include at least <u>one</u> of the following:	
5. Differentiate between ethical and unethical behavior	
6. Demonstrate an understanding of the physical, biological, and social environments and how individual behaviors impact this complex system.	3.4, 3.9, 6.6, 7.9, 7.11
7. Demonstrate an understanding of and appreciation for human diversities and commonalities.	4.6, 5.10
8. Speak and listen effectively.	

**General Education Competencies and Skills endorsed by 2010-2011 General Education Task Force*

****Required Competencies**

1) Read with critical comprehension.

The student will be introduced to the basic texts, concepts, vocabulary, and methods necessary for developing an understanding of the discipline and meeting the required benchmarks as stated in the course outline.

2) Write clearly and coherently.

The student will demonstrate an understanding and mastery of subject matter in a variety of ways, including writing. Writing activities may include both graded and ungraded essays, short answer quizzes, summaries, reactions, journals, and various other reports.

3) Demonstrate and apply literacy across all the disciplines (indicate which ones apply).

- a) **Information literacy** means understanding how to locate needed information, using the appropriate technology for the task, managing and evaluating the extracted information and using it effectively and ethically.
- b) **Technology literacy** is the ability to responsibly and effectively use appropriate technology to access, manage, integrate, or create information, and/or use technology to accomplish a given task.
- c) **Workplace literacy** is having the appropriate knowledge and skills to communicate and work with others effectively and perform job duties, whether it is through the use of computers and/or other technology.
- d) **Cultural literacy** is recognizing, understanding, and appreciating the similarities and differences between one's own culture and the cultures of others through a study of the arts, customs, beliefs, values, and history that define a culture.
- e) **Quantitative literacy** is having the ability to formulate, solve and interpret mathematical/statistical operations and graphical/tabular representations to make informed decisions.
- f) **Scientific literacy** means understanding the methodology and application of the scientific process, the physical and biological worlds, and recognizing that scientific knowledge is continuously updated or revised as new information is discovered.

g) Environmental literacy is creating a context within which environmental issues can be viewed, imparting knowledge to enhance one's ability to analyze the issues, make the connections between humans' decisions and actions and the challenges facing the environment, and instilling the desire to sustain the environment through ethical practices in both one's professional and personal lives.

4. Apply problem-solving skills or methods to make informed decisions in a variety of contexts.

The student will use acquired skills or methods to recognize, analyze, adapt, and apply critical thinking to solve problems and make informed decisions.

EVALUATION:

In the box to the right of the Methods of Assessment, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 4.0, 4.2 and 5.12) that apply.

1. Portfolio	
2. Short essays	
3. Research Papers	
4. Group projects	
5. Discussions (In class and online)	
6. Multiple Choice tests	1.0-1.4,2.1-2.4, 3.1-3.9, 4.1-4.6, 5.1-5.10, 6.1-6.6, 7.1-7.16
7. Presentations	1.0-1.4,2.1-2.4, 3.1-3.9, 4.1-4.6, 5.1-5.10, 6.1-6.6, 7.1-7.16
8. Service Learning Projects	
9. Quizzes (pop, announced, etc.)	1.0-1.4,2.1-2.4, 3.1-3.9, 4.1-4.6, 5.1-5.10, 6.1-6.6, 7.1-7.16
10. Take-home tests	
11. Summaries, critiques, and analyses	
12. Reaction papers	
13. Surveys	
14. Performance	
15. Short answer tests	
16. Classroom debates and colloquia	
17. Blogs, wikis, web pages	
18. Other (Please explain – Practical exam, graded lab work, skills check, homework)	1.0-1.4,2.1-2.4, 3.1-3.9, 4.1-4.6, 5.1-5.10, 6.1-6.6, 7.1-7.16

Common Course Number: BSC 1085 Lab

Unit 1: Reading and Writing in the Biological Sciences

General Outcome

The student shall be able to clearly communicate in writing information derived from course related readings the major concepts and themes in the biological sciences.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Demonstrate in writing the ability to analyze and extract data relevant to biology from course related readings.
- 1.2 Evaluate the validity of information from a variety of sources.
- 1.3 Demonstrate the use of diagrams, drawings, outlines, concept maps, and/or other methods connections among biological concepts.
- 1.4 Demonstrate the ability to use the appropriate technology to carry out course requirements.

Common Course Number: BSC 1085 Lab

Unit 2: Fundamentals

General Outcome

The student shall be able to recognize anatomical terminology and demonstrate familiarity with the structure and function of the microscope to better understand cytology and histology.

Specific Measurable Learning Outcomes

Upon successful completion of this unit, the student shall be able to:

- 2.1 Demonstrate proficiency in using terms describing body direction, planes, and abdominal regions.
- 2.2 Name and identify the major parts of the microscope.
- 2.3 Demonstrate the functions of the parts of the microscope by proper focusing and changing objective lenses.
- 2.4 Define and explain resolving power, parfocal, working distance, depth of field, and magnification.

Common Course Number: BSC 1085 Lab

Unit 3: Cells

General Outcome

The student shall be able to describe cellular structures, membrane transport, the events of mitosis, and molecular transport.

Specific Measurable Learning Outcomes

Upon successful completion of this unit, the student shall be able to:

- 3.1 Distinguish between prokaryotes and eukaryotes.
- 3.2 Name and identify the major organelles found in eukaryotic cells.
- 3.3 Explain Brownian movement, solutions, solutes, and solvents.
- 3.4 Compare and contrast hypertonic, isotonic, and hypotonic solutions and explain crenation and hemolysis in red blood cells.
- 3.5 Perform simple experiments to demonstrate the principles of diffusion, osmosis and osmotic pressure.
- 3.6 Inspect and identify the phases of mitosis from prepared slides.
- 3.7 Evaluate the events of a cell's life cycle.
- 3.8 Prepare an onion root tip squash and locate the various phases of mitosis under the microscope. (*)
- 3.9 List the components of the nucleotides of DNA, describe how the DNA molecule is arranged and relate the replication of DNA to the cell's life cycle.

* Optional

Common Course Number: BSC 1085 Lab

Unit 4: Tissues

General Outcome

The student should be able to recognize the various tissue types of the human body.

Specific Measurable Learning Outcomes

Upon successful completion of this unit, the student shall be able to:

- 4.1 Name the categories of tissues.
- 4.2 Describe the properties distinguishing the four types of tissues.
- 4.3 State the location and functions of various tissue types.
- 4.4 Identify, from prepared slides, selected types of epithelial, connective, muscle and nervous tissue.
- 4.5 Identify the structures of epidermal and dermal layers of skin.
- 4.6 Identify the major parts of the epidermal derivatives, nails and hair.

Common Course Number: BSC 1085 Lab

Unit 5: Skeletal System

General Outcome

The student shall be able to identify the microscopic and macroscopic structure of bones, the bones of the human skeleton, and the types of joints.

Specific Measurable Learning Outcomes

Upon successful completion of this unit, the student shall be able to:

- 5.1 Identify the components of the osteon.
- 5.2 Distinguish the major anatomical structures of a long bone.
- 5.3 Identify the bones of the skeletal subdivisions.
- 5.4 Identify the bones and sutures of the adult skull and locate fontanelles on a fetal skull.
- 5.5 Identify selected bone markings.
- 5.6 List the subdivisions of the vertebral column and identify the parts of an individual vertebra.
- 5.7 Identify the bones of the thoracic cage.
- 5.8 Describe the classification of joints.
- 5.9 Distinguish among the types of movable joints.
- 5.10 Distinguish between a male and female skeleton.

Common Course Number: BSC 1085 Lab

Unit 6: Muscular System

General Outcome

The student shall be able to gain an understanding of the gross and microscopic anatomy of muscles as well as muscle physiology, and be able to name and identify selected muscles.

Specific Measurable Learning Outcomes

Upon successful completion of this unit, the student shall be able to:

- 6.1** Distinguish the three types of muscle tissue.
- 6.2** Name specified muscles of the head and neck, and give an action for each.
- 6.3** Name specified muscles of the trunk and give an action for each.
- 6.4** Name certain muscles of the leg and thigh, and give an action for each.
- 6.5** Name certain muscles of the arm and forearm, and give an action for each.
- 6.6** Perform experiments to demonstrate muscle physiology. (*)

*** Optional**

Common Course Number: BSC 1085 Lab

Unit 7: Nervous System and Special Senses

General Outcome

The student shall be able to demonstrate an understanding of the histological and gross anatomical features of the nervous system including the sense organs.

Specific Measurable Learning Outcomes

Upon successful completion of this unit, the student shall be able to:

7.1 Identify the parts of a neuron.

7.2 Distinguish between a neuron and a nerve.

7.3 Identify the features of the spinal cord in cross-section.

7.4 Identify the major regions of the brain.

7.5 Identify the meninges.

7.6 Locate and name selected cranial nerves.

7.7 Name and locate the major nerve plexuses.

7.8 Locate the 31 pairs of human spinal nerves.

7.9 Perform physiological experiments to demonstrate selected reflexes.

7.10 Identify cutaneous receptors.

7.11 Perform exercises investigating the physiology of cutaneous receptors such as sensations of touch, heat and cold, and two-point threshold.

7.12 Perform exercises related to smell and taste.

7.13 Identify the structures of the ear and describe their functions.

7.14 Perform physiological exercises related to hearing.

7.15 Identify the structures of the eye and describe their functions.

7.16 Perform physiological exercises related to vision.