Course Syllabus

BIOL 2404 - Introductory Anatomy and Physiology

Revision Date: 1/11/2017

Catalog Description: Study of the structure and function of human anatomy, including the neuroendocrine, integumentary, musculoskeletal, digestive, urinary, reproductive, respiratory, and circulatory systems.

Prerequisites: None

Semester Credit Hours: 4
Lecture Hours per Week: 3
Lab Hours per Week: 3
Extended hours per week: (A&P Concepts) 1
Contact Hours per Semester: 112
State Approval Code: 26.0707.51.03

Core Components and Related College Student Learning Outcomes
This course counts as part of the academic requirements of the Panola College Core Curriculum and an Associate of Arts or Associate of Science degree. ☒ Yes ☐No: If no, skip to Instructional Goals.

The items below marked with an X reflect the state-mandated outcomes for this course **IF this is a CORE course**:

☒ Critical Thinking Skills – to include creative thinking, innovation, inquiry and analysis, evaluation and syntheses of information

- ☐ CT1: Generate and communicate ideas by combining, changing, or reapplying existing information
- ☒ CT2: Gather and assess information relevant to a question
- ☒ CT3: Analyze, evaluate, and synthesize information

☒ Communication Skills – to include effective development, interpretation, and expression of ideas through written, oral, and visual communication

- ☒ CS1: Develop, interpret, and express ideas through written communication
- ☒ CS2: Develop, interpret, and express ideas through oral communication
- ☒ CS3: Develop, interpret, and express ideas through visual communication

☒ Empirical and Quantitative Skills – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

- ☐ EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion
- ☒ EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion

☒ Teamwork – to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

☒ TW1: Integrate different viewpoints as a member of a team

☒ TW2: Work with others to support and accomplish a shared goal

☐ Personal Responsibility – to include the ability to connect choices, actions, and consequences to ethical decision-making

☐ PR1: Evaluate choices and actions and relate consequences to decision-making

☐ Social Responsibility – to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

☐ SR1: Demonstrate intercultural competence

☐ SR2: Identify civic responsibility

☐ SR3: Engage in regional, national, and global communities

Instructional Goals and Purposes: Introductory Anatomy and Physiology is a one semester foundation course that surveys human anatomy and physiology. This course is geared toward students who are pursuing career in the allied health fields or who wish to increase their success rate in BIOL 2401 and BIOL 2402. This course does not substitute for Biology 2401 or 2402 unless specified by your program director.

Learning Outcomes:
After studying all materials and resources presented in the course, the student will be able to:

1. develop an understanding of anatomical structure and physiological function
2. Develop an understanding of the interrelationships of body organ systems.

Course Content:
A general description of lecture/discussion topics included in this course are listed in the Learning Objectives section of this syllabus.

Students in all sections of this course will learn the following content:

Lecture Objectives

1. To identify basic anatomy and physiology concepts.
2. To interrelate chemistry with anatomy and physiology.
3. To identify structural components of the cell and recognize how the cell is genetically regulated.
4. To relate enzymes, energy and metabolism to cell function.
5. To identify the importance of membrane transport and membrane potential to cell function.
6. To examine the classification, structure and function of tissues.
7. To identify the structure, function and clinical considerations of the integumentary system.
8. To identify the structure, function and clinical considerations of bone and describe bone development.
9. To identify bones and structures comprising the axial and appendicular skeletons.
10. To describe the structure, function and clinical importance of articulations.
11. To identify the structure, function, and clinical considerations associated with muscles.
12. To identify muscles of the axial and appendicular skeleton.
13. To describe the functional organization of the nervous system.
14. To identify characteristics, components and functions of the central nervous system.
15. To identify characteristics, components and functions of the peripheral nervous system.
16. To identify characteristics, components and functions of the autonomic nervous system.
17. To identify structure, function and clinical considerations of sensory organs.

18. To identify structure, function and clinical considerations of the endocrine system.
19. To identify structure, function and clinical considerations of the formed elements of the blood.
20. To identify structure, function and clinical considerations of the heart.
21. To identify physiological aspects of cardiac output and blood flow.
22. To identify structure, function and clinical considerations of the lymphatic system.
23. To identify structure, function and clinical considerations of the respiratory system.
24. To identify structure, function and clinical considerations of the urinary system.
25. To identify structure, function and clinical considerations of the digestive system.
26. To describe metabolism of macromolecules and discuss energy regulation.
27. To identify structure, function and clinical considerations of the reproductive system.
28. To identify structure, function and clinical considerations of developmental anatomy and inheritance.

Laboratory Objectives

1. To identify basic anatomy and physiology concepts.
2. To interrelate chemistry with anatomy and physiology.
3. To identify structural components of the cell and recognize how the cell is genetically regulated.
4. To relate enzymes, energy and metabolism to cell function.
5. To identify the importance of membrane transport and membrane potential to cell function.
6. To examine the classification, structure and function of tissues.
7. To identify the structure, function and clinical considerations of the integumentary system.
8. To identify the structure, function and clinical considerations of bone and describe bone development.
9. To identify bones and structures comprising the axial and appendicular skeletons.
10. To describe the structure, function and clinical importance of articulations.
11. To identify the structure, function, and clinical considerations associated with muscles.
12. To identify muscles of the axial and appendicular skeleton.
13. To identify characteristics, components and functions of the central nervous system.
14. To identify characteristics, components and functions of the peripheral nervous system.
15. To identify structure, function and clinical considerations of sensory organs.
16. To identify structure, function and clinical considerations of the endocrine system.
17. To identify structure, function and clinical considerations of the formed elements of the blood.
18. To identify structure, function and clinical considerations of the heart.
19. To identify physiological aspects of cardiac output and blood flow.
20. To identify structure, function and clinical considerations of the respiratory system.
21. To identify structure, function and clinical considerations of the urinary system.
22. To identify structure, function and clinical considerations of the digestive system.
23. To identify structure, function and clinical considerations of the reproductive system.
24. To identify structure, function and clinical considerations of developmental anatomy and inheritance.

Lecture

Unit #1 – Lecture Objectives 1-6
Unit #2 – Lecture Objectives 7-12
Unit #3 – Lecture Objective 13-17
Unit #4 – Lecture Objectives 18-21
Unit #5 – Lecture Objectives 22, 23, 25, 26
Unit #6 – Lecture Objectives 24, 27, 29

Laboratory

Unit #1 – Laboratory Objectives 1-6
Unit #2 – Laboratory Objectives 7-12
Unit #3 – Laboratory Objectives 13-19
Unit #4 – Laboratory Objectives 20-24

Methods of Instruction/Course Format/Delivery:

This lecture portion of the course is offered in a variety of formats: face to face lecture, hybrid lecture, and online lecture. The lab portion of the course is offered in the face to face format and hybrid lab. The course typically includes lecture, class discussion, reading assignments, laboratory performance, web-based assignments including and web-based tutorials.

Major Assignments / Assessments:
The following items will be assigned and assessed during the semester and used to calculate the student's final grade.

Assessment:

Lecture:

Quiz: Several quizzes will be given during the semester. Any lecture session may begin or end with a quiz. Quiz questions will be drawn from lecture notes, reading assignments, text objectives and review questions. Each quiz may consist of multiple-choice, true/false and matching questions. Missed quizzes due to legitimate reasons should be rescheduled with the professor within one week of the scheduled quiz. It is the responsibility of the student to schedule makeup quizzes. Makeup quizzes are harder and may consist of fill in the blank questions. Makeup quizzes are harder and may consist of fill in the blank questions.

Mastering A&P Quizzes: There will be several quizzes on Mastering A&P (tab inside Canvas). The quizzes are untimed and multiple attempts per question are allowed. They will be open for a few days and will close at date and time set by the professor. No extensions are allowed on these quizzes.

Exams: Several tests will be given during the semester. Test questions will be drawn from lecture notes, reading assignments, text objectives and review sheet. Each exam may consist of multiple-choice, matching, and true/false questions. Missed examinations due to legitimate reasons should be rescheduled with the professor within one week of the scheduled examination. It is the responsibility of the student to schedule makeup quizzes. A student will not be permitted more than one makeup exam. A makeup exam is harder and may consist of multiple-choice, matching, fill in the blank questions.

Final Exam: A final comprehensive examination will be given the week of final exams and will cover material from the whole semester. The final comprehensive exam may consist of multiple-choice, true/false and matching questions.

Laboratory:

Lab Quiz Grade: Several quizzes will be given during the semester. Any laboratory session may begin or end with a quiz. Missed lab quizzes due to legitimate reasons should be rescheduled with the professor within one week of the scheduled quiz. It is the responsibility of the student to schedule makeup quizzes. Makeup quizzes will consist of fill in the blank questions.

Lab Exercise Grade: Laboratory exercises may include drawings, laboratory reports or any other methodologies deemed important by the professor. To earn credit for laboratory work the student must be both present and participating in the activity. Lab exercises are due by the deadline. Thirty points or more will be taken away for any assignment turned in late. The quantity of materials necessary and the time sensitive nature of some exercises are usually not conducive for make-up sessions.

Lab Practicals: Lab practicals will cover all items studied in lab (including: models, charts, pictures, diagrams, dissections, and experiments), text objectives and review sheet. Lab practicals will consist of fill in the blank questions. Missed lab practical due to legitimate reasons will be rescheduled on one day during the last week of school before final exams. The makeup practical will consist of fill in the blank questions. It is the responsibility of the student to take the makeup lab practical during the scheduled time. A student will not be permitted more than one makeup practical.

A&P Concepts:

To earn credit the student must be both present and participating in the activities.

Course Grade:

The grading scale for this course is as follows: A=90-100, B=80-89, C=70-79, D=60-69, F=59 and below

Components: Lecture is 70% of total course grade, Laboratory is 30% of total course grade. The number or exams, quizzes, and awarding of points will be at the discretion of the professor.

Lecture Grade: Quizzes – 10%, Tests – 45% of lecture grade, Canvas Quizzes – 10%, Final exam – 20% of lecture grade, and Report – 15% of lecture grade.

- A student can have the final exam can replace the lowest lecture exam grade by participating in lecture activities, and not exceeding the college's attendance policy (see below).

Lab Grade: A&P Concepts – 10% of lab grade**,** Lab Quizzes – 15% of lab grade, Lab Exercises – 35% of lab grade, and Lab Practicals – 40% of lab grade. The disease oral report will be included in the Lab Exercises category.

- A student can earn 1 point on their lab average for attendance, and not exceeding the college's attendance policy (see below)
- A student can earn 1 point for participating in lab activities

Texts, Materials, and Supplies:

Required:

- Marieb. 2015. Essentials of Human Anatomy & Physiology 11th ed. Pearson Education, Boston, MA.
- Marieb. 2015. Essentials of Human Anatomy & Physiology: Laboratory Manual 6th ed. Pearson Education, Boston, MA.
- Modified Mastering A&P access code for lecture book

Optional:

- Krieger. 2007. A Visual Analogy Guide to Human Physiology 1st ed. Morton Publishing: Englewood, CO.
- Krieger. 2005. A Visual Analogy Guide to Human Anatomy 1st ed. Morton Publishing: Englewood, CO.
- Van De Graaf, and Crawley. 2003. A Photographic Atlas for the Anatomy and Physiology Laboratory 5th ed.
- 2008. Anatomy and Physiology Revealed Version 2.0, CD on Integument, Skeletal, Muscular system, Nervous system, Cardiovascular, Respiratory, Lymphatic, Digestive, Endocrine, Urinary and Reproductive Systems. McGraw-Hill, Boston, MA.
- Laboratory coat or apron
- Dissection Kit
- Map Colors

Required Readings:

- Marieb. 2015. Essentials of Human Anatomy & Physiology 11th ed. Pearson Education, Boston, MA.
- Marieb. 2015. Essentials of Human Anatomy & Physiology: Laboratory Manual 6th ed. Pearson Education, Boston, MA.

Recommended Readings:

- Get Ready for A&P, found in Mastering A&P study area
- Practice Anatomy Laboratory (PAL) 3.0 CD, can also be accessed under the Lab Mastering A&P study area

Course website: https://panola.instructure.com/login

Course requirements: The student is responsible for attending all lectures and laboratories and completing all assigned lecture/lab assignments/examinations. When the professor feels that the student has been absent to such a degree as to invalidate the learning experience, the professor may recommend to the Vice President of Instructional Affairs that the student be dropped from the course. The professor may drop the student for attendance deficiencies after they have accumulated the following number of absences:

Fall or Spring semester
5 absences, MWF classes
3 absences, TR or MW classes
2 absences, one-day-per-week class

Summer semesters:
2 absences, four-days-a-week classes
2 absences, two evenings a-week classes

The student is also responsible for being punctual to class and attentive in class. One point will be deducted from the final average in lecture or lab for every absence that exceeds the college's attendance policy (above). Three tardies count as one absence.

Academic integrity is an important value in student development. Plagiarism and cheating are not allowed. Cheating is defined as unauthorized help on an examination, practical or assigned course material. A student must not receive from any other student or give to any other student any information, answers, or help during an exam, in-class quiz, and practical. A student must not "steal" the answers from an unsuspecting student during an exam, in-class quiz, and practical. A student must not use any sources for answers during the exam (including, but not limited to: notes, books or electronic devices) without prior authorization from the professor. A student must not obtain exam question illegally, tamper with the exam/in-class quiz/practical questions, nor change the results of an exam/in-class quiz/practical after it has been graded. All cheating infractions will result in a grade of "0" for the assignment. A student will fail the class upon their second cheating offense. Students shall have the right to contest a cheating claim. The appeals process is specifically defined in the student handbook.

The student is responsible for taking notes, reading and outlining course materials, and being prepared for lecture and laboratory responsibilities.

It is the responsibility of the student to complete and turn in all course work on the scheduled dates. Thirty points or more will be taken away for any assignment turned in late. Regardless of any situation, the professor should be contacted ASAP to develop an alternate schedule.

** The student will need to make up the missed lab hours. Failure to makeup the missed lab hours will result in a loss of points. For example, if a student turns in a lab assignment without making up the missed hours will only get 40% of the total grade.

Other:

- For current texts and materials, use the following link to access bookstore listings: http://www.panolacollegestore.com
- For testing services, use the following link: http://www.panola.edu/elearning/testing.html
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Administration Building or go to http://www.panola.edu/student-success/disability-support-services/ for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder:* http://www.panola.edu/student-success/documents/pathfinder.pdf