Course Summary

Course: BIOL201  Title: Principles of Anatomy and Physiology with Lab
Length of Course: 16
Prerequisites: N/A  Credit Hours: 4

Description

Course Description: This course introduces students to the fundamental principles associated with the structure and function of the human body. It is intended to prepare students for careers in the health sciences and healthcare systems (medical assisting, medical technology, radiologic technology, respiratory therapy, health information management, medical coding, etc.). Lessons and laboratory exercises focus on the organization, microscopic and gross anatomy, and the functions of the integumentary, musculoskeletal, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems of the human body. The basics of chemistry and cell biology are introduced in order to provide the foundation for discussion of the individual organ systems. This course includes a hands-on laboratory component, and students are required to perform dissection of preserved animal specimens. Some of the laboratory activities require the use of glass or sharp laboratory instruments; therefore students must have a safe work area available to perform laboratory activities. Students must also have room temperature storage available in order to maintain laboratory materials and specimens. Refrigerated storage is not required. In addition, students must be able to document their laboratory work using still pictures and/or video. This is a time and resource-intensive course. Students intending to pursue a career in the health sciences should verify that this course meets the requirements of their intended program prior to enrollment.

Course Scope:

This course provides the foundation for further study in areas of healthcare that require a single, four-credit-hour course in human anatomy and physiology with a laboratory component. A basic knowledge of both the structure (anatomy) and the function (physiology) of the human body is critical for providing effective care to patients and managing their health information. Others will entrust you with their care and health information, and it is your professional obligation to understand both the underlying mechanisms and the terminology used in the management of their care.

This course takes a systems approach to learning anatomy and physiology. Chemistry, cell biology, genetics, and the structure of tissues are common to all of the organ systems of the body. We will use that foundation to discuss the anatomy and physiology of the 11 organ systems as single, independent systems. As we progress through the course, we will relate how the individual organ systems work together to maintain homeostasis: The maintenance of a consistent environment within the body.

It is important to note that this is a science course, and not a course specific to any particular discipline. The content and assignments in this course were selected to develop both your foundational knowledge in
anatomy and physiology, as well as your scientific literacy skills. The laboratory exercises included in this course provide you the opportunity to apply the knowledge contained in the lesson materials, develop your scientific inquiry skills, and produce products that demonstrate your knowledge of anatomy and physiology to others.

Objectives

After successfully completing this course, you will be able to:

CO-1 Explain the principle of homeostasis and its relationship to human health.
CO-2 Explain the principles of basic chemistry, biochemistry, and cell biology relevant to human physiology.
CO-3 Describe the functions and general organization of the 11 organ systems of the human body.
CO-4 Identify the gross and microscopic structures of the 11 organ systems of the human body.
CO-5 Explain the normal physiological processes of the 11 organ systems of the human body.

Outline

Week 1: Introduction to Anatomy & Physiology

Learning Objectives

CO-1
CO-2

Readings

Text Readings

Saladin & McFarland
Chapter 1, Section 2.1 & 2.2

Lab Activity:

Read Safety Information, Student Portal, Sample Labware, and Good Lab Techniques

Assignment

Introduction Forum

Quiz 1

Chapter 1

Assignment 1: Lab Safety Video

Week 2: The Chemical and Cellular Levels of Organization

Learning Objectives

CO-1
CO-2

Readings
Week 3: The Tissue Level of Organization and the Integumentary System

Learning Objectives

CO-3
CO-4
CO-5
CO-6

Readings

Text Readings
Saladin & McFarland
Chapter 4
Chapter 5

Lab Activity
Lab 4: Diffusion and Osmosis (continued from Week 2)

Assignment

Week 3 Forum

Quiz 3
Chapter 4
Chapter 5

Assignment 2: Lab Report 1 – Diffusion and Osmosis (continued from Week 2)

Unit Exam 1
(Saladin & McFarland, Chapters 1 – 3)

Week 4: The Skeletal System

Learning Objectives

CO-3
CO-4
CO-5
Readings

**Text Readings**
Saladin & McFarland
Chapter 6

**Lab Activity**
Lab 6: The Skeletal System

- Experiment 6: Virtual Model – The Axial Skeleton
- Experiment 8: Virtual Model – The Appendicular Skeleton

Lab 7: The Muscular System

- Experiment 6: Virtual Model – The Muscular System (Upper Body)
- Experiment 7: Virtual Model – The Muscular System (Lower Body)

Assignment

**Week 4 Forum**

**Quiz 4**
Chapter 6

**Assignment 3: Unit Exam 1 Extra Credit**

**Week 5: The Muscular System**

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**Learning Objectives**

CO-3
CO-4
CO-5

Readings

**Text Readings**
Saladin & McFarland
Chapter 7

**Lab Activity**
Lab 6: The Skeletal System (continued from Week 4)

- Experiment 6: Virtual Model – The Axial Skeleton
- Experiment 8: Virtual Model – The Appendicular Skeleton

Lab 7: The Muscular System (continued from Week 4)

- Experiment 6: Virtual Model – The Muscular System (Upper Body)
- Experiment 7: Virtual Model – The Muscular System (Lower Body)

Assignment

**Week 5 Forum**

**Quiz 5**
Chapter 7

**Assignment 4: Lab Report 2 – Bones and Muscles**
(continued from Week 4)

**Week 6: The Nervous System, Part I**

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**Learning Objectives**

CO-3
CO-4
CO-5

**Readings**

**Text Readings**
Saladin & McFarland
Chapter 8
Section 10.1
Section 10.2

**Lab Activity**
None

**Assignment**

**Week 6 Forum**

**Quiz 6**
Chapter 8

**Unit Exam 2**
(Saladin & McFarland, Chapters 4 – 7)

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**Week 7: The Nervous System, Part II**

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**Learning Objectives**

CO-4
CO-5

**Readings**

**Text Readings**
Saladin & McFarland
Chapter 9
Section 10.3
Section 10.4
Section 10.5

**Lab Activity**
Lab 8: Tissues and Skin
- Experiment 6: Sheep Brain Dissection

**Assignment**

**Week 7 Forum**

**Quiz 7**
Assignment 5: Lab Report 3 – The Brain

Assignment 6: Unit Exam 2 Extra Credit

Week 8: The Endocrine System

Learning Objectives
CO-3
CO-4
CO-5

Readings

Text Readings
Saladin & McFarland
Chapter 11

Lab Activity
None

Assignment

Week 8 Forum

Quiz 8
Chapter 11

Week 9: Blood and the Lymphatic System

Learning Objectives
CO-3
CO-4
CO-5

Readings

Text Readings
Saladin & McFarland
Chapter 12
Chapter 14

Lab Activity
None

Assignment

Week 9 Forum

Quiz 9
Chapter 12
Chapter 14
Unit Exam 3  
(Saladin & McFarland, Chapters 8 – 11)

Week 10: The Cardiovascular System

Learning Objectives
CO-4
CO-5

Readings

Text Readings
Saladin & McFarland
Chapter 13

Lab Activity
Lab 10: Blood and the Heart

- Experiment 4: Blood Typing Experiment

Assignment

Week 10 Forum

Quiz 10
Chapter 13

Assignment 7: Lab Report 4 – Blood Typing

Assignment 8: Unit Exam 3 Extra Credit

Week 11: The Respiratory System

Learning Objectives
CO-3
CO-4
CO-5

Readings

Text Readings
Saladin & McFarland
Chapter 15

Lab Activity
Lab 10: Blood and the Heart

- Experiment 6: Sheep Heart Dissection

Assignment

Week 11 Forum

Quiz 11
Chapter 15
Assignment 9: Lab Report 5 – The Heart

Week 12: The Urinary System

Learning Objectives
CO-3
CO-4
CO-5

Readings

Text Readings
Saladin & McFarland
Chapter 16

Lab Activity
None

Assignment

Week 12 Forum

Quiz 12
Chapter 16

Unit Exam 4
(Saladin & McFarland, Chapters 12 – 15)

Week 13: The Digestive System

Learning Objectives
CO-3
CO-4
CO-5

Readings

Text Readings
Saladin & McFarland
Chapter 17

Lab Activity
Lab 15: Electrolytes, Water, Acids, and Bases
- Experiment 1: Breathing and Acid-Base Balance
- Experiment 2: Urine pH

Assignment

Week 13 Forum

Quiz 13
Chapter 17

Assignment 10: Lab Report 6 – Electrolytes, Water, Acids, and Bases
Assignment 11: *Unit Exam 4 Extra Credit*

**Week 14: Nutrition and Metabolism**

**Learning Objectives**

CO-5

**Readings**

**Text Readings**
Saladin & McFarland
Chapter 18

**Lab Activity**
None

**Assignment**

**Week 14 Forum**

**Quiz 14**
Chapter 18

**Week 15: The Reproductive System**

**Learning Objectives**

CO-3
CO-4
CO-5

**Readings**

**Text Readings**
Saladin & McFarland
Chapter 19

**Lab Activity**
None

**Assignment**

**Week 15 Forum**

**Quiz 15**
Chapter 19

**Unit Exam 5**
(Saladin & McFarland, Chapters 16 – 18)

**Week 16: Human Development and Aging**

**Learning Objectives**

CO-4
CO-5
Evaluation

Your final grade in the course will be determined by your performance on five types of assessments:

**Discussion Forums (16 forums; 10% of final grade)**
During each week of the course, you will provide an initial post to the discussion forum that is relevant to the assigned topic. In addition, you will respond to at least two of your classmates’ initial posts and answer any questions asked about your initial post. The forums are for student interaction, and input should be submitted per the due dates listed in the classroom in order to fully participate in the discussions. Students should demonstrate their own knowledge in the forums and avoid copying and pasting from websites.

**Quizzes (16 quizzes; 10% of final grade)**
Each week you will complete a quiz to test your knowledge on the assigned readings. The quizzes can be taken multiple times throughout the assigned week and are intended to prepare you for the closed-book exams.

**Lab Assignments (6 assignments; 30% of final grade)**
You will apply the lesson content in six laboratory exercises. You will submit these laboratory assignments based on the related laboratory exercises. Three of these assignments will be written assignments and three will be video-based submissions.

**Unit Exams (5 exams; 35% of final grade)**
You will complete five unit exams during the course. Each exam will cover approximately 3 chapters of the course textbook. Exam questions cover both new material and relevant material from previous chapters. Unit exams are closed-book, closed-note, and the use of any external resources is prohibited.

**Cumulative Final Exam (1 final exam; 15% of final grade)**
You will complete one final exam during the course which will cover all course readings completed during the course. The final exam is closed-book, closed-note, and the use of any external resources is prohibited.

Detailed instructions for each of these assessments are provided in the classroom.

Please see the [Student Handbook](#) to reference the University’s [grading scale](#).
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Unit Exam 4 7.00 %
Unit Exam 5 7.00 %
Cumulative Final Exam 15.00 %
Comprehensive Final Exam 15.00 %
Extra Credit 5.00 %
Assignment 3: Unit Exam 1 Extra Credit 1.00 %
Assignment 6: Unit Exam 2 Extra Credit 1.00 %
Assignment 8: Unit Exam 3 Extra Credit 1.00 %
Assignment 11: Unit Exam 4 Extra Credit 1.00 %
Assignment 12: Unit Exam 5 Extra Credit 1.00 %

Materials

Book Title: BIOL201 Custom A&P Lab Kit
Author: 
Publication Info: eScience
ISBN: 5024

Book Title: Essentials of Anatomy & Physiology, 1st ed. - the VitalSource e-book is provided via the APUS Bookstore
Author: Saladin & McFarland
Publication Info: McGraw-Hill
ISBN: 9780072458282

Book Title: You must validate your cart to get access to your VitalSource e-book(s) and hard copy book(s). If needed, instructions are available here - http://apus.libguides.com/bookstore/undergraduate
Author: N/A
Publication Info: N/A
ISBN: N/A

NOTE: Students MUST complete the following actions in order to receive the laboratory kit from eScience Labs.

1. Confirm the course materials order in the APUS Bookstore.
   a. The following business day, the student should receive an email from the APUS Bookstore containing a redemption code and registration instructions for an eScience Labs student account.
2. Create a student account at eScience Labs using the redemption code and provide shipping
information for your kit.
   a. A kit will not be shipped to the student until eScience Labs receives this information.
3. The student should receive an email from eScience Labs or UPS containing tracking information and
   the expected delivery date once the kit has shipped.

In accordance with the Student Handbook (http://www.apus.edu/student-handbook/course-materials/),
students who have not received a shipping confirmation email from eScience Labs or UPS by the first Friday
of class must drop the course and re-register for a future semester.

Required Technology

- See the Technology Requirements section of the undergraduate catalog for the minimum hardware and
  software requirements.
- In addition, students must be able to document their laboratory work using still pictures and/or video.
- Microsoft Office 365 is available to APUS students for free. To sign up, visit
  http://products.office.com/en-us/student. If you have questions about accessing the software, please
  contact Classroom support at classroomsupport@apus.edu.

Course Guidelines

Citation and Reference Style

- Attention Please: Students will follow the APA Format as the sole citation and reference style used in
  written work submitted as part of coursework to the University. Assignments completed in a narrative
  essay or composition format must follow the citation style cited in the APA Format.

Tutoring

- Tutor.com offers online homework help and learning resources by connecting students to certified
  tutors for one-on-one help. AMU and APU students are eligible for 10 free hours* of tutoring provided
  by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter
  Resource Library offering educational resources, worksheets, videos, websites and career help.
  Accessing these resources does not count against tutoring hours and is also available 24/7. Please
  visit the APUS Library and search for 'Tutor' to create an account.

Late Assignments

- Students are expected to submit classroom assignments by the posted due date and to complete the
  course according to the published class schedule. The due date for each assignment is listed under
  each Assignment.
- Generally speaking, late work may result in a deduction up to 15% of the grade for each day late, not to
  exceed 5 days.
- As a working adult I know your time is limited and often out of your control. Faculty may be more flexible
  if they know ahead of time of any potential late assignments.

Turn It In

- Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and
  report instances of potential plagiarism for the student to edit before submitting it for a grade. In some
  cases professors may require students to use Turnitin.com. This is automatically processed through the
  Assignments area of the course.

Academic Dishonesty

- Academic Dishonesty incorporates more than plagiarism, which is using the work of others without
  citation. Academic dishonesty includes any use of content purchased or retrieved from web services
  such as CourseHero.com. Additionally, allowing your work to be placed on such web services is
academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

Submission Guidelines

- Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

Disclaimer Statement

- Course content may vary from the outline to meet the needs of this particular group.

Communicating on the Forum

- Forums are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the forum. The purpose of the forums is to actively participate in an on-going discussion about the assigned content.
- “Substantive” means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says “I agree” is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

University Policies

Student Handbook

- Drop/Withdrawal policy
- Extension Requests
- Academic Probation
- Appeals
- Disability Accommodations

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation’s military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.

STUDENT WARNING: This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.