

PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

HUMAN ANATOMY & PHYSIOLOGY I
BIOL 2010

Class Hours: 3.0

Credit Hours: 4.0

Laboratory Hours: 3.0

Revised: Spring 2011

Catalog Course Description:

A study of basic biological chemistry, cellular structure and function (including cellular respiration, protein synthesis, and cell division); histology; and integumentary, skeletal, and nervous systems. Course includes three hours of lecture and laboratory applications each week.

Entry Level Standards:

Eligible for enrollment in ENGL 1010 and MATH 1530.

Prerequisites:

Completion of Transitional Studies reading, writing, and math requirements.

Textbook(s) and Other Course Materials:

Required: Textbook: Fundamentals of Anatomy and Physiology, 8th edition. Martini. Pearson Publishers. 2009. Bundled with Applications Manual, Atlas and CD ~ \$237.00. Separate ISBN 13: 978-0321-51228-4 for textbook only ~ \$120-210 at Amazon.com.

Required: Laboratory manual: Human Anatomy and Physiology I Laboratory Manual, by Ron Bridges. Blue Door Publishing, 2010. ISBN: 978-1599-84150-2 ~\$75

Required: A&P Applications Manual. Martini and Welch. Pearson Publishers. 2009. ISBN-13: 978-0-321-51227-7 bundled with Textbook.

Recommended: The Merck Manual of Diagnosis and Therapy, 18th edition. Beers et al. Merck Research Laboratories. 2006. *May be found for free on-line at* <http://www.merckmanuals.com/professional/index.html> or ~\$65 in hardback.

Recommended: www.anatomyandphysiology.com accessible using your Student Access Code inside the textbook.

I. Week/Unit/Topic Basis:

Week	Topic	Chapter	Lab Exercises
1	Orientation to Anatomy	1	No Lab
	Chemistry of Life: Inorganic	2	
2	Chemistry of Life: Organic	2	Lab Orientation/Safety(1)
	Cells and Cell Division	3	Body Language (2) Microscope (3) Cells (4)

3	Cell Metabolism Review Chapters 2-3, 25	25 (parts) 2,3, 25	Cell Transport (5) Tissues and Membranes (6)
4	Test 1 (Chapters 2-3,25) Homeostasis Tissues & Membranes	2-3,25 1 4	Lab Practical 1 (1-6) Integumentary (7)
5	The Skin and Integument Bones/Skeletal Tissue	5 6	The Skeletal System. (8-9)
6	Test 2 (Chapters 1,4, 5) Bones/Skeletal Tissue	1,4,5 6	The Skeletal System. (8-10)
7	The Skeleton, Joints	7,8,9	The Skeletal System. (12) Joints (11) Review for LP-2
8	Test 3 (Chapters 6-9) The Muscular System	6-9 11	Lab Practical 2 (8-12)
9	Muscle Tissues	10	Muscle Histology (13) Gross Muscle Anatomy (14)
10	Muscle Tissues Nervous System Tissues	10 12	Gross Muscle Anatomy (15)
11	Test 4 (Chapters 10-11) Nervous System Tissues (cont'd) Brain and Cranial Nerves	10, 11 12 14	Gross Muscle Anatomy (14-15) Review Muscles
12	Brain and Cranial Nerves (cont'd) Spinal Cord and Nerves	14 13	Lab Practical 3 (13-15) Nervous Tissues (17)
13	Spinal Cord and Nerves (cont'd) Sensory Basics Test 5 (Chapters 12-14)	13 15	Gross Anatomy of the Nervous System and Reflexes (18,19)
14	Special Senses Autonomic Nervous System	17 16	The Senses (20-22) Review for LP-4 (17-22)
15	Test 6 (Chapters 15,17,16 plus review questions)		Lab Practical 4 (17-22)

II. Course Goals*:

The course will:

- A. Know the anatomical terminology used in describing the whole body and selected organ systems. (V.3)*
- B. Understand the process of homeostasis. (V.4)
- C. Understand the relationships between cells, tissues, organs, systems and the organism. (V.4, V.5)
- D. Understand the basic chemistry of the cell and the human body. (V.3)

- E. Know the structure and function of cellular components. (V.4)
- F. Understand the function of DNA and RNA in cellular processes. (V.4)
- G. Know the anatomy (micro- and macro-) and understand the physiology of the following systems: (V.3, V.4, V.5)
 - 1. Integumentary
 - 2. Skeletal
 - 3. Muscular
 - 4. Nervous
- H. Demonstrate effective, safe and ethical laboratory procedures. (V.1)
- I. Use scientific methods to conduct an experiment, analyze anatomical specimens and perform physiological tests.(V.1, V.2)
- J. Apply the principles of anatomy and physiology to case study situations. (V.4, V.5)
- K. Use medical resources to aid in the analysis of medical data and determination of a diagnosis and treatment of some health problems. (V2,V3,V4)

*Roman numerals after course objectives reference goals of the Natural and Behavioral Science program. (Career Program Goals and General Education Goals are listed http://www.pstcc.edu/departments/curriculum_and_instruction/syllabi/)

III. Expected Student Learning Outcomes*:

Students will be able to:

- 1. Use correct terminology and correct spelling to describe the human body in terms of regions, planes, sections, organs and systems. (A)*
- 2. Explain the chemical composition of the cell including its primary elemental, inorganic and organic components. (C, D)
- 3. Describe cell structures and their functions and be able to identify the phases of the cell cycle (C, D, E)
- 4. Describe the functions and importance of DNA and RNA in maintaining cellular processes. (C, F)
- 5. Explain homeostasis and its significance to normal body functions and be able to identify the components of a homeostatic control system. (B,C)
- 6. Identify the anatomical components studied and explain the physiological mechanisms described in the following systems. Use correct terminology and spelling in the identification of all structures and functions. (B, G, H, I, J)
 - a. Integumentary System
 - b. Skeletal System
 - c. Muscular System
 - d. Nervous System
 - e. Special Senses
- 7. Demonstrate proper use of the microscope in the study of human cells and tissues. (E, H)
- 8. Demonstrate safe and ethical laboratory procedures. (H)

9. Evaluate laboratory data, develop and test hypotheses and write a coherent lab report that summarizes findings. (I, G).
10. Analyze case study situations and consult appropriate medical references in order to develop a diagnosis and treatment recommendation for conditions related to the systems studied. (G, J, K)

*Capital letters after Expected Student Outcomes reference the course goals listed above.

IV. Evaluation:

A. Testing Procedures:

The lecture portion of this course contains 825 points (75% of the total grade). Each lecture unit will be evaluated using a written test totaling 100. Exams will be a mix of multiple choice, short answer, listing and 1 or 2 essay questions. Some tests may contain diagrams for the student to draw and/or label. Unit vocabulary quizzes (worth 5 points each) will be taken on-line before most units begin and there will be Case Studies (worth 10 points each) associated with all units. The instructor may choose to give alternate assignments (including pop quizzes) in lieu of quizzes or case studies. The last 80 lecture points will be based on a Take-home Comprehensive Assignment that integrates all the systems. **Lecture tests that are missed for a valid reason may be made up at the discretion of the instructor.** Students must notify their instructor as to the reason for missing a test *on the day the test is missed or as soon as possible*. Failure to do this will make the reason invalid. **Make-up tests must be taken within a week of the original test date and will be of a different nature and will generally be harder than the regular tests.** Lecture tests missed without a valid excuse will be given a score of Zero.

B. Laboratory Expectations:

The Laboratory portion of the grade covers a total of 275 points for determining letter grade, but a student must pass the lab with a 60% average in order to pass the course. **If a student earns less than 60% in lab, they will fail the entire course.** Each laboratory unit will be evaluated using a Lab Practical worth 20 to 60 points. Lab Practicals will consist of short answer questions that require identification of structures and processes explored during lab exercises. The final lab practical will cover the last unit and up to 10 points worth of comprehensive material. There will be three lab reports worth 10 to 15 points each. The remaining 40 points associated with lab will be determined by weekly quizzes, reports and/or homework. Quizzes and homework will consist of short answer/identification questions and may cover new or review material. **If a student must miss a lab practical due to circumstances beyond their control, they may be able to take a make-up LP. A student must notify their regular lab instructor prior to or on the day of their absence, provide a sufficient reason for their absence and request a make-up.** Most commonly, the make-up will be given during another regular lab session, but must be completed within 1 week of the original test date. Students unable to complete lab practicals within a reasonable amount of time, who are other-wise passing the course, may receive an incomplete for the semester

C. Field Work:

N/A

D. Other Evaluation Methods:

Other evaluation methods may be arranged at the instructor's discretion.

E. Grading Scale:

Point Distribution: 1100 points Total Possible

Lecture Portion:

Test 1:	100pts
Test 2:	100pts
Test 3:	100pts
Test 4:	100pts
Test 5:	100pts
Test 6:	100pts
Comprehensive	
Assignment:	80pts
Vocab. Quizzes*	45pts
Case Studies:	<u>100pts</u>
Sub Total:	825pts

Laboratory Portion:

Mini- Lab Practical 1A:	20pts
Mini-Lab Practical 1B:	20pts
Lab Practical 2:	60pts
Lab Practical 3:	50pts
Lab Practical 4:	50pts
Osmosis Report	10pts
Bone Forensics	15pts
Nervous Functions	10pts
Weekly Quizzes**	<u>40pts</u>
Sub Total:	275pts

Letter Grades will be determined as follows:

A	90% and above	990 or more points
B+	87-89%	957-989 points
B	80-88%	880-956
C+	77-79%	847-879
C	70-77%	770-846
D	60-69%	660-769
F	59% and below	659 or fewer points

NOTES: A student must attain at least 165pts (60%) in lab in order to pass the course.

*Vocab quizzes are taken on-line

**Lab Quizzes may be given in-lab, as homework, or taken on-line.

Incomplete grades are possible for students missing a few specific assignments due to circumstances beyond their control. Students must request an incomplete grade in writing (e-mail is acceptable), and must be passing the course. Students missing more than 25% of the assignments are not eligible for incompletes.

V. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of the Learning Division, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of the Learning Division.

B. Academic and Classroom Misconduct:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented

as one's own work.

- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

C. Accommodations for disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at www.pstcc.edu/departments/swd/.

D. Other Policies:

Missed Assignments:

Lecture tests that are missed for a valid reason may be made up at the discretion of the instructor. Students must notify their instructor as to the reason for missing a test ***on the day the test is missed or as soon as possible***. Failure to do this will make the reason invalid.

Make-up tests must be taken within a week of the original test date and will be of a different nature and will generally be harder than the regular tests. Lecture tests missed without a valid excuse will be given a score of Zero.

If a student must miss a lab practical due to circumstances beyond their control, they may be able to take a make-up LP. A student must notify their regular lab instructor prior to or on the day of their absence, provide a sufficient reason for their absence and request a make-up. Most commonly, the make-up will be given during another regular lab session, but must be completed within 1 week of the original test date. Alternate Lab Practical may be given in the testing center for students with a valid excuse for their absence. Students unable to complete lab practicals within a reasonable amount of time, who are other-wise passing the course, may receive an incomplete for the semester.

Missed vocabulary quizzes and case studies are given a zero. The lowest 5 or 6 grades in each category are dropped, so missed items become one of the lowest grades and are dropped.

Laboratory Activities:

Students are expected to arrive at lab fully prepared to participate in all activities. This requires that, as a minimum, you have read the appropriate lab exercise and reviewed the lab activity guides for that week.

Students should dress appropriately for the lab to minimize the possibility of spreading contamination and the risk of personal injury. Garments that cover the legs are recommended and **open toed/open heeled shoes are not allowed**. Students must report to their instructor any injuries sustained during lab exercises.

Drinks, food, chewing gum, and tobacco use are not allowed in the lab or classroom.

Visitors are not allowed in the lab or classroom.

Student Participation in Dissections. Dissections are an integral part of BIOL 2010 and are therefore mandatory. This will include a dissection/observation of a **human cadaver**. All students enrolled in the course are expected to fully participate. However, in consideration of medical, religious and/or moral objections of isolated individuals, students wishing to be excused from the actual dissection may petition for a waiver by submitting a written request to the lead instructor. Students that are pregnant should consult their physician regarding their participation in dissection labs. With proper documentation, waivers may be granted and alternate activities may be arranged. Students granted waivers will only be excused from the

physical dissection itself. They will still attend labs and be responsible for all material presented in lab. All students are required to take the laboratory practicals which will include material from the dissections.

Academic and Classroom Conduct and Etiquette:

1. See College Catalog: http://www.pstcc.edu/community_relations/catalog
2. Students in BIOL 2010 are expected to behave in a professional and adult manner at all times. Offensive statements regarding one's race, religion, creed, national origin, physical disability or mental disability are not appropriate and will not be tolerated. Inappropriate language, behavior or dress will not be tolerated. Students disrupting classes or labs will be asked to leave and will be counted absent for that day.
3. All cell phones or personal music players must be turned off during class.
4. Students should be in their seats and ready to learn at the start of class time. Tardy students should not walk between the instructor and the class, but need to find the first available seat. Students should not disturb class by putting away materials or leaving the class prior to class ending.
5. Students are expected to do their own work. With any form of valid proof of dishonesty with regard to student work or testing, the instructor may elect from a range of actions from giving a zero on that particular assignment to failure of the entire course.
6. Plagiarism includes any form of using another person's ideas without giving them credit. Students must cite all references for answers to their case studies and comprehensive assignment. The instructor will provide access to resources on how to properly cite references.

Course Essentials Related To Students with Disabilities:

The course objectives include the requirement that students use correct terminology, to include correct spelling, when demonstrating that they recognize body structures and their functions. This course lays the foundational framework for further understand of the body in various health-related disciplines such as Nursing and Radiology Technology. Essential to this understanding is the ability to quickly recognize structures and be able to correctly spell the names of those structures on patient records. As part of the test of this essential objective, lab practicals involve timed stations (90 seconds each) where students must recognize a structure, identify it and record that identity with correct spelling within the allotted time.

Thus, spelling and timely answers are essential learning objectives and are not subject to accommodation. However, after the timed portion of a lab practical, we allow all students about 10 minutes to spot check their answers. For this untimed portion, students with disabilities will be allowed extra time for their spot checking. This extra time will result in their total lab practical time being equivalent to what is stated on their accommodation plan.

Lecture tests have the same spelling requirements, but since individual questions are not timed, extra time will be allotted per the student accommodation plan.

Students with Medical Conditions:

Please inform the instructor of any medical condition which may render you unable to attend or perform normally in the classroom. These medical conditions include, but are not limited to Diabetes, Epilepsy, Asthma, etc. In the event of a medical emergency, it is helpful if the instructor already has some knowledge of your condition so as to best assist you.

On-line Course Enhancement.

1. This lecture course is enhanced with on-line material available through the On-line courses link on the PSTCC home page. Your instructor will provide instructions for accessing this material on the first day of class.
2. Information available on-line will include: Class Notes, Test Review Sheets, Vocabulary Quizzes, Case Studies, On-line Tests, Lab Activity Guides, and links to useful sites related to A&P.

3. The college provides ample computer access for students that don't own their own computer. Therefore, students are expected to be able to access course material on a regular basis and are responsible for assignments posted there.