**Anatomy and Physiology I**  
Spring 2011  
Biol 2401 Crn# 69826  

| Course location and times: | West Loop Center  
Tuesday and Thursday  
11:00 a.m.- 2:00p.m.  
Room 162/A227 |
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<tbody>
<tr>
<td>Course semester credit hours:</td>
<td>4 Semester Credit hours</td>
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<tr>
<td>Course contact hours:</td>
<td>96 total hours; 48 hrs lecture, 48 hrs laboratory</td>
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<tr>
<td>Course length:</td>
<td>16 weeks</td>
</tr>
<tr>
<td>Instruction type:</td>
<td>In-person, Lecture –lab; Web-enhanced</td>
</tr>
</tbody>
</table>

**Instructor:** Alma Phillips, M.D.  
**Phone:** 713-718-7771  
**Email address:** alma.phillips@hccs.edu  
**Office location and hours:** Stafford Campus (only by appointment)  

**Course Description:**  
A course of study covering the structure and function of human cells, tissues and organ system including the Integumentary, Skeletal, Muscular and Nervous Systems. Core Curriculum Course.

You are spending a good deal of time, energy and money on this course – please, make the most of your investment! It takes approximately **2-3 hours of study time for each hour of class time to master the material.** This class will have over 96 contact hours (4 hr. credit).

The **class and study time necessary to succeed in this class will be close to 300 hours (20 hours per week)!**

**Course Prerequisites:**  
College Level Reading as determined by SAT, ACT, TASP or successfully passing ENGL0305 with “C” or better. Biology 1406 (General Biology) is strongly recommended.
Program Student Learning Outcomes (PSLO):
Program SLO #1 -
To recognize, identify, and describe the basic structures and functions associated with most life forms.
Program SLO #2 -
To develop basic laboratory techniques appropriate to the field of Biology.
Program SLO #3 -
To develop study skills and habits appropriate for pre-professional students interested in health-related fields.

The following Student Learning Outcomes with their associated assessment criteria are not meant to be all inclusive, and are meant to be used along with all other course learning outcomes and assessment devices, listed under Course Objectives, in the determination of the student's final course grade. Completion of the specific Student Learning Outcomes listed below, at any assessment grading level, does NOT and will NOT guarantee the student that final course grade at the end of the semester!

Student Learning Outcomes (SLO):
1. Students will be able to understand and apply the principals of homeostasis and the importance of feedback loops.
   PSLO* #1
2. Students will be able to evaluate information and make conclusions based on their knowledge of membrane transport.
   PSLO#1
3. Students will be able to apply their knowledge of muscle structure to explain how muscles function.
   PSLO#1
4. Students will be able to apply their knowledge of the structure of the skeletal system to its functions.
   PSLO#1
5. Students will be able to understand and apply their knowledge of changes in polarity on membrane potential.
   PSLO#1
6. Students will be able to apply and demonstrate their knowledge concerning reflex arcs
   PSLO#s 1 and 2
7. Students will be able to apply the knowledge gained in lab utilizing anatomical models, physiological experiments, histological slides and the compound light microscope.
   PSLO#2
8. Students will utilize online interactive evaluation tools to gauge their understanding of key anatomical and physiological concepts prior to lecture/examinations/quizzes where applicable.
   PSLO#3
**Learning Objectives:**

1. Consistently able to demonstrate understanding and application of feedback loops on homeostasis without the instructor's help.
2. Consistently able to explain membrane transport and determine the outcome of scenarios concerning membrane transport.
3. Always able to describe muscle structure and use that knowledge to explain muscle function.
4. Always able to apply knowledge of the structure of the skeletal system to its functions.
5. Consistently able to demonstrate knowledge of interactions involving changes in membrane polarity without the instructor's help.
6. Consistently able to demonstrate all parts, functions, and steps involved in a reflex arc.
7. Consistently prepared and able to demonstrate skills using the body system models and laboratory techniques at the classroom standards. Consistently able to find and focus the specimen on the microscope slide without the instructor's help.
8. Consistently uses online tools to prepare for class, always ready for classroom discussions and instructor's Q&A sessions, completes all online quizzes prior to due date.

**Course Goals:**

This course is intended for students majoring in one of the physical sciences or life sciences, engineering, or for students who are pursuing pre-professional programs in medicine, dentistry, pharmacy, veterinary medicine, or other health programs. The course is also beneficial to students who are preparing themselves for higher level science courses in their respective curricula.

**Course Calendar:**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Schedule</th>
<th>Lab Schedule</th>
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</table>
| 1    | Introduction to Anatomy and Physiology I by Dept. Chairman  
     | Ch. 1 Major themes of Anatomy and Physiology; Atlas A General Orientation to Human anatomy Ch. 2 The chemistry of life*  
     | Quizzes | Laboratory Safety Rules and regulations, The Microscope Anatomical Terminology |
| 2    | Ch. 3 Cellular form and function*  
     | Ch. 4 Genetic and Cellular function*  
     | Ch. 5 Histology  
<pre><code> | Quizzes | Tissues |
</code></pre>
<table>
<thead>
<tr>
<th>Week</th>
<th>Assignments</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Ch. 6 Integumentary System Quiz</td>
<td>Integumentary System</td>
</tr>
<tr>
<td>4</td>
<td>Lecture Exam 1: Chapters 1, 5, 6 &amp; Atlas A Ch. 7 Bone Tissue Quiz</td>
<td>Skeletal System</td>
</tr>
<tr>
<td>5</td>
<td>Ch. 8 The Skeletal System Quiz</td>
<td>Skeletal System</td>
</tr>
<tr>
<td>6</td>
<td>Ch. 9 Joints Quiz</td>
<td>Joints</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab Exam Practice</td>
</tr>
<tr>
<td>7</td>
<td>Lecture Exam 2: Chapters 7,8 &amp; 9 Ch. 11 Muscular Tissue Quiz</td>
<td>Lab Exam 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Muscular System</td>
</tr>
<tr>
<td>8</td>
<td>Ch. 10 Muscular System Quiz</td>
<td>Muscular System</td>
</tr>
<tr>
<td>9</td>
<td>Spring Break</td>
<td>Spring Break</td>
</tr>
<tr>
<td>10</td>
<td>Ch. 12 Nervous Tissue Quiz</td>
<td>The Brain</td>
</tr>
<tr>
<td>11</td>
<td>Lecture Exam 3: Chapters 10, 11 &amp; 12 Ch. 13 Spinal Cord and Spinal Nerves,</td>
<td>Spinal Cord</td>
</tr>
<tr>
<td></td>
<td>and Somatic Reflexes Quiz</td>
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<tr>
<td>12</td>
<td>Ch. 14 The Brain and Cranial Nerves Quiz</td>
<td>Cranial Nerves Exercise</td>
</tr>
<tr>
<td>13</td>
<td>Ch. 15 The Autonomic Nervous System and Visceral Reflexes Quiz</td>
<td>Ex. 12</td>
</tr>
</tbody>
</table>
* These chapters are a review of General Biology Information. Students attempting Biology 2401 should already be well versed in this information.

Note that your instructor reserves the right to change the schedule as needed at any point during the course.

Class Calendar by Date:

Week 1-------------------01/18-01/21
Week 2-------------------01/24-01/28
Week 3-------------------01/31-02/04
Week 4-------------------02/07-02/11
Week 5-------------------02/14-02/18
Week 6-------------------02/21-02/25
Week 7-------------------02/28-03/04
Week 8-------------------03/07-03/11
Week 9-------------------03/14-03/18
Week 10------------------03/21-03/25
Week 11------------------03/28-04/01
Week 12------------------04/04-04/08
Week 13------------------04/11-04/15
Week 14------------------04/18-04/22
Week 15------------------04/25-04/29
Week 16------------------05/02-05/06

Instruction Methods:
Blackboard will be utilized for General Biology proficiency quiz at the beginning of the semester and for exit exam at the end of the semester. McGraw-Hill’s course software Connect will be utilized for chapter quizzes, Learnsmart review modules, Links, and for some students, Tegrity for recorded lecture review.

The primary focus of the course will be on instructor lectures including illustrations, animations, group activities and assigned textbook readings. Lecture material will correspond to the topics covered in the required textbook, but your instructor may include more detail on certain topics. Topics and concepts covered during lecture or included in the assigned reading will be included in exams.

Laboratory sessions will include exercises from our department online lab manual website or required laboratory manual. Lecture may be included during lab sessions to clarify or detail concepts.
Student Assignments:
Students are required to read assigned chapters and to complete chapter and atlas quizzes. Additional announced and unannounced quizzes during lecture or lab may be conducted throughout the semester.

Student Assessments:
Students will be assessed via lecture and laboratory examinations, chapter quizzes, comprehensive final lecture and lab examinations. Additionally, there is a required General Biology proficiency examination at the beginning of the semester and a Final Exit examination at the end of the semester.

Instructor Requirements:

Basic requirements
Students should be on time for class and be prepared with required materials including textbook and lab manual. Full class attendance is required including lecture and lab portions. Full attention during lecture and lab is required.

Phones/electronic devices
Absolutely no phone or other personal electronic devices are to be used during class (lecture and lab). This includes making or taking a call, reviewing messages, texting, playing games, checking email, surfing the web, anything that involves a phone or other personal electronic device. If your work or family situation requires that you be available via phone, your phone can be on vibrate mode and you can take the call during our regular scheduled breaks or you can exit the class to review the call. Notify your friends, family, employers, and anyone else who regularly contacts you that you will be in class and that you should be contacted only when necessary. The taking of calls during class is not only disruptive but it is also discourteous to classmates and the instructor.

Testing procedures
Be sure to arrive early for your examinations. There are time limits for exams. You will not be given extended time for testing if you arrive late.

Entering and exiting the lecture room or lab room is not permitted once exams have begun. Please be sure to use bathroom before or after.

Deportment
Students are expected to conduct themselves as adults. This includes courteous and respectful behavior towards instructor and classmates. Disruptive behavior or any behavior that interferes with any educational activity being performed by the instructor will not be allowed. Additionally, no student may interfere with his/her fellow students’ right to pursue their academic goals to the fullest in an atmosphere appropriate to a community of scholars. Disruptive behavior may result in removal from the class.

Lab policy
Lab safety is stated in lab manual. Lab rules and regulations will be discussed during the first lab and will be adhered to at all times. Each student is responsible for cleaning up after labs, this includes glassware, utensils, specimens/models and other material used during lab time (no, clean up is not covered by your lab fees).

Program/Discipline  Proficiency Exam
Requirements

2401 Exit Exam

HCC Grading Scale:

A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
F = less than 60%

Instructor Grading Criteria:
Students must adhere to testing schedule. Failure to take a test (lab or lecture) will result in a “0” for the missed exam. Exceptions include work, family, or personal (health) emergency, and must be documented.

Only one make-up exam per semester is allowed (with proper documentation) and must be arranged with instructor ASAP. There is no repeating of examinations or “dropping” of lowest grade/s.

Examination format
Lecture exams will include multiple choice questions and essay/short answer questions. Lab exams will include identification, labeling and short answers reviewing anatomical models and specimens.

Grade Calculation

<table>
<thead>
<tr>
<th>Test</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Lecture Exam 1</td>
<td>10%</td>
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<tr>
<td>Lecture Exam 2</td>
<td>10%</td>
</tr>
<tr>
<td>Lecture Exam 3</td>
<td>10%</td>
</tr>
<tr>
<td>Lecture Final</td>
<td>10%</td>
</tr>
<tr>
<td>2401 Exit Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Connect Chapter Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Lab Exam 1</td>
<td>15%</td>
</tr>
<tr>
<td>Lab Final Exam</td>
<td>15%</td>
</tr>
<tr>
<td>Attendance</td>
<td></td>
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<tr>
<td>Final Score</td>
<td>100%</td>
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Instructional Materials:

Textbook:
ISBN# 0078002834

Lab book:
Lab Manual of Anatomy and Physiology I by Keating and Wiersema.

Web resources:
Blackboard learning system
Connect (free with purchase of new required textbook; used books will require you to purchase a Connect account)
HCC Policy Statement: ADA
Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the respective college at the beginning of each semester. Instructors are authorized to provide only the accommodations requested by the Disability Support Services Office. If you have any special needs or disabilities that may affect your ability to succeed in college classes or participate in any college programs or activities, please contact the DSS office for assistance. At Southwest College, contact:
Dr. Becky Hauri
5407 Gulfton
Houston, Texas 77081
Phone: 713-718-7909
Fax: 713-718-7781
TTY: 713-718-7909

HCC Policy Statement: Academic Honesty
Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Disciplinary proceedings may be initiated by the college system against a student accused of scholastic dishonesty. Penalties can include a grade of "0" or "F" on the particular assignment, failure in the course, academic probation, or even dismissal from the college. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.

HCC Policy Statement: Student attendance, 3-repeaters, withdrawal deadline
Attendance
Students are expected to attend classes regularly. Students are responsible for materials covered during their absences, and it is the student's responsibility to consult with instructors for make-up assignments.

Instructors check class attendance daily. A student may be dropped from a course for excessive absences after the student has accumulated absences in excess of 12.5% of the hours of instruction (including lecture and laboratory time). Note that 12.5% is approximately 4 classes or labs for a 4-semester hour course.

Habitual tardiness will not be tolerated. Students are expected to be in attendance for the entirety of the scheduled class and are responsible for completing assignments scheduled during their absence/s. It is the responsibility of each student to amend their professional/personal schedule to meet the class schedule.

Repeaters
Students who repeat a course for a third or more times may
soon face significant tuition/fee increases at HCC and other Texas public colleges and universities. Please ask your instructor / counselor about opportunities for tutoring / other assistance prior to considering course withdrawal or if you are not receiving passing grades.

**Withdrawals**
Withdrawal from the course after the official day of record (see current catalog) will result in a final grade of “W” on the student transcript and no credit will be awarded. It is the student’s responsibility to initiate and complete a request for withdrawal from any course. Students will be required to formally request a drop from their instructors prior to the administrative drop date deadline (**November 23rd 2010**). Abandoning the course or failing to formally drop, will result in a grade being given based on the work completed for the entire course (including missed exams).

The State of Texas has begun to impose penalties on students who drop courses excessively. For example, if you repeat the same course more than twice, you have to pay extra tuition. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than SIX total course withdrawals throughout their educational career in obtaining a certificate and/or degree.

Receiving a "W" in a course may affect the status of your student Visa. Once a W is given for the course, it will not be changed to an F because of the visa consideration. Please contact the International Student Office at 713-718-8520 if you have any questions about your visa status and other transfer issues.
## ASSESSMENT RUBRICS

### ANATOMY & PHYSIOLOGY I - BIOLOGY 2401

<table>
<thead>
<tr>
<th>Performance Factors</th>
<th>Rating Scale</th>
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| **1. Students will be able to understand and apply the principals of homeostasis and the importance of feedback loops.**  
*PSLO* #1 | F  | D  | C  | B  | A  |
|  | Unable to demonstrate any understanding and application of feedback loops on homeostasis without the instructor’s help. | Seldom able to demonstrate understanding and application of feedback loops on homeostasis without the instructor’s help. | Occasionally able to demonstrate some understanding and application of feedback loops on homeostasis without the instructor’s help. | In most instances able to demonstrate greater understanding and application of feedback loops on homeostasis without the instructor’s help. | Consistently able to demonstrate understanding and application of feedback loops on homeostasis without the instructor’s help. |
| **2. Students will be able to evaluate information and make conclusions based on their knowledge of membrane transport.**  
*PSLO* #1 | F  | D  | C  | B  | A  |
|  | Unable to explain membrane transport and usually cannot determine the outcome of scenarios concerning membrane transport | Sometimes able to explain membrane transport but usually cannot determine the outcome of scenarios concerning membrane transport | Occasionally able to explain membrane transport and determine the outcome of scenarios concerning membrane transport, but needs some prompting | In most circumstances able to explain membrane transport and determine the outcome of scenarios concerning membrane transport | Consistently able to explain membrane transport and determine the outcome of scenarios concerning membrane transport |
| **3. Students will be able to apply their knowledge of muscle structure to explain how muscles function.**  
*PSLO* #1 | F  | D  | C  | B  | A  |
|  | Unable to describe muscle structure and use that knowledge to explain muscle function | Sometimes able to describe muscle structure but usually cannot use that knowledge to explain muscle function | Occasionally able to describe muscle structure and use that knowledge to explain muscle function, but needs some prompting | In most cases able to describe muscle structure and use that knowledge to explain muscle function | Always able to describe muscle structure and use that knowledge to explain muscle function |
| **4. Students will be able to apply their knowledge of the structure of the skeletal system to its functions.**  
*PSLO* #1 | F  | D  | C  | B  | A  |
|  | Does not know the structures of the skeletal system. | Knows some of the structure of the skeletal system, but cannot apply that knowledge to its functions. | Occasionally able to apply knowledge of the structure of the skeletal system to its functions, but needs some prompting | In most cases able to apply knowledge of the structure of the skeletal system to its functions. | Always able to apply knowledge of the structure of the skeletal system to its functions. |
| **5. Students will be able to understand and apply their knowledge of changes in polarity on membrane potential.**  
*PSLO* #1 | F  | D  | C  | B  | A  |
<p>|  | Never able to demonstrate knowledge of interactions involving changes in membrane polarity without the instructor’s help. | Seldom able to demonstrate knowledge of interactions involving changes in membrane polarity without the instructor’s help. | Occasionally able to demonstrate knowledge of interactions involving changes in membrane polarity without the instructor’s help. | In most instances able to demonstrate knowledge of interactions involving changes in membrane polarity without the instructor’s help. | Consistently able to demonstrate knowledge of interactions involving changes in membrane polarity without the instructor’s help. |</p>
<table>
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<tr>
<th>Performance Factors</th>
<th>Rating Scale</th>
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<tr>
<td><strong>6. Students will be able to apply and demonstrate their knowledge concerning reflex arcs</strong>&lt;br&gt;PSLOs 1 and 2</td>
<td>F: Never able to demonstrate any parts, functions, and steps involved in a reflex arc.&lt;br&gt;D: Seldom able to demonstrate some parts, functions, and steps involved in a reflex arc.&lt;br&gt;C: Occasionally able to demonstrate some parts, functions, and steps involved in a reflex arc.&lt;br&gt;B: In most instances able to demonstrate most parts, functions, and steps involved in a reflex arc.&lt;br&gt;A: Consistently able to demonstrate all parts, functions, and steps involved in a reflex arc.</td>
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<tr>
<td><strong>7. Students will be able to apply the knowledge gained in lab utilizing anatomical models, physiological experiments, histological slides and the compound light microscope.</strong>&lt;br&gt;PSLO#2</td>
<td>F: Never prepared and never able to demonstrate skills using the body system models and laboratory techniques at the classroom standards. Never able to find and focus the specimen on the microscope slide without the instructor’s help.&lt;br&gt;D: Seldom prepared and able to demonstrate skills using the body system models and laboratory techniques at the classroom standards. Seldom able to find and focus the specimen on the microscope slide without the instructor’s help.&lt;br&gt;C: Occasionally prepared and able to demonstrate skills using the body system models and laboratory techniques at the classroom standards. Occasionally able to find and focus the specimen on the microscope slide without the instructor’s help.&lt;br&gt;B: In most instances prepared and able to demonstrate skills using the body system models and laboratory techniques at the classroom standards. Often able to find and focus the specimen on the microscope slide without the instructor’s help.&lt;br&gt;A: Consistently prepared and able to demonstrate skills using the body system models and laboratory techniques at the classroom standards. Consistently able to find and focus the specimen on the microscope slide without the instructor’s help.</td>
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<tr>
<td><strong>8. Students will utilize online interactive evaluation tools to gauge their understanding of key anatomical and physiological concepts prior to lecture/examinations/quizzes where applicable.</strong>&lt;br&gt;PSLO#3</td>
<td>F: Never uses online tools to prepare for class, never ready for classroom discussions and instructor’s Q&amp;A sessions. Never takes online quizzes by the due date and are always past due. Does not participate in class discussions.&lt;br&gt;D: Seldom uses online tools to prepare for class, often not ready for classroom discussions and instructor’s Q&amp;A sessions, completes some online quizzes by the due date and others are past due. Often not interactive with the class.&lt;br&gt;C: Occasionally uses online tools to prepare for class, sometimes ready for classroom discussions and instructor’s Q&amp;A sessions, completes some online quizzes by the due date.&lt;br&gt;B: In most instances uses online tools to prepare for class, often ready for classroom discussions and instructor’s Q&amp;A sessions, completes all online quizzes by the due date.&lt;br&gt;A: Consistently uses online tools to prepare for class, always ready for classroom discussions and instructor’s Q&amp;A sessions, completes all online quizzes prior to due date.</td>
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*PSLO = Program Student Learner Outcome*