ANP 403: Human Physiology Lecture
Summer 2017

Instructor: Dr. Abigail Fredrickson
Email: amfredric@carrollu.edu or afredrickson@atsu.edu
Phone: 262-844-8851
Office Hours: by appointment

Course Description:
Fundamental concepts related to the normal function of the human body are presented. Basic
pathophysiological concepts are also introduced. This course includes the study of the nervous,
endocrine, muscular, cardiovascular, respiratory, digestive, urinary, and reproductive systems.
Experimental design, data analysis, computer simulations, case studies, and discussion/presentation of
primary literature are incorporated into the course. Four hours lecture and three hours
laboratory.(Required course fee) (SP, SU)

Prerequisites:
Junior standing; BIO 225 or ANP 130 and ANP 140; and CHE 110 or CHE 101 and CHE 102.

Course Objectives:
Upon successful completion of this course, students should be able to:
1. Describe the mechanisms that underlie the normal function of cells, and the tissues that they
   comprise, including but not limited to metabolism, membrane transport, intra- and inter-cellular
   communication, protein synthesis and action, and maintenance of homeostasis.
2. Explain how organ and system physiological activities are related to basic cellular physiology.
3. Outline the basic anatomical structures inherent in each system, and state the relationship
   between their structure and function.
4. Outline the basic physiological systems found in humans, and describe similarities and
   differences in these systems.
5. Gain experience in and describe some of the classic experiments and techniques used in human
   physiology.
6. Successfully apply knowledge gained in solving clinical problems.
7. Use scientific literature databases to further their understanding of physiology.
8. Communicate information related to physiology to others verbally and in writing.

Lecture: Wednesday and Friday: 12:30 - 2:30pm in PT 105
Lab: Monday: 12:30 - 3:30pm in SCI 019

Required Text:
Grading:
Grades will be assigned at the end of the summer term according to the following scale:

<table>
<thead>
<tr>
<th>Percentage Grade</th>
<th>Grade</th>
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<tbody>
<tr>
<td>93 – 100</td>
<td>A</td>
</tr>
<tr>
<td>90 – 92.99</td>
<td>A/B</td>
</tr>
<tr>
<td>83 – 89.99</td>
<td>B</td>
</tr>
<tr>
<td>80 – 82.99</td>
<td>B/C</td>
</tr>
<tr>
<td>70 – 79.99</td>
<td>C</td>
</tr>
<tr>
<td>60 – 69.99</td>
<td>D</td>
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<tr>
<td>Below 60</td>
<td>F</td>
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You will have the opportunity to earn a total of 565 points, distributed between the following activities:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Exams (100 points each)</td>
<td>300</td>
<td>1,2,3,4,5,6,8</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
<td>1,2,3,4,5,6,8</td>
</tr>
<tr>
<td>5 Lab Quizzes (15 points each)</td>
<td>75</td>
<td>1,2,3,4,5</td>
</tr>
<tr>
<td>4 Lab Summaries (15 points each)</td>
<td>60</td>
<td>2,3,4,5,8</td>
</tr>
<tr>
<td>Primary Literature Presentations (10 points each)</td>
<td>30</td>
<td>7,8</td>
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<tr>
<td><strong>Total 565</strong></td>
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Course Activities:

Exams:
These will consist of a combination of multiple choice, short answer and essay questions. Since laboratory exercises will reinforce lecture material, information presented in both portions of the course may appear on a particular exam. Exams will cover material as outlined in class.

Discussion/Participation:
The advancement of science depends upon thoughtful discussion between scientists. Therefore, your attendance in class is expected/mandatory, will be monitored, and your thoughtful participation in class and small group discussions will be noted. Three or more class absences will reduce your course grade at the discretion of the instructor. If for any reason, a student is unable to attend class, she/he should email the instructor before class and explain why she/he is unable to attend class. The instructor reserves the right to waive a student absence under extreme circumstances.

Laboratory Summaries:
The overall important points from several laboratory exercises should be prepared in a typed summary. The write-up should include graphs and analyses of class data. The report should also incorporate how the activity in lab relates to what you have been studying in lecture and summarize what concepts were demonstrated, etc. Questions posed during and at the end of the laboratory exercises should be incorporated into these summaries. Providing alternative explanations for your findings will serve as a means of review for quizzes and exams and will serve to indicate if you understand the basic concepts presented or demonstrated.
Quizzes:
Five quizzes (15 points each) will be given as scheduled in the syllabus. Quizzes will be given in lab and will contain questions from both lab and lecture.

Primary Literature Presentations:
The field of physiology is constantly growing and expanding. Additionally, you all have areas of physiology that you find especially interesting. These presentations are designed to allow you to explore physiology along this avenue. The specifics of these presentations will be given to you via a separate handout and discussed in lab. Presentation material will be assessed on laboratory quizzes.

Student Responsibilities:
Each student is responsible for all material assigned and presented in both lecture and lab. Attendance in lecture and lab is mandatory and your participation in discussions held in lecture and lab will be noted over the course of the term and will affect your grade. If a student must miss a laboratory, the student should contact the instructor before the laboratory period in order to make arrangements to make up the lab exercise at another time; however, realize that the nature of some of the experiments will not allow make-ups outside the three-hour laboratory period. An additional assignment will be given if a student is NOT able to make up the lab (instructor's discretion). No makeup quizzes or exams will be given unless prior arrangements have been made by the student and approved by the instructor. Written documentation such as a note from a coach, medical excuse, obituary, etc. will need to be provided. The nature of any make-up quizzes or exams will be at the discretion of the instructor.

Statement on Academic Integrity:
The Carroll University Academic Integrity Policy is located in your student handbook. A copy of the handbook can be found on the Student Affairs page of the Carroll University web portal. Please familiarize yourself with it. If a student is found in violation of the Carroll University Academic Integrity Policy, the instructor reserves the right to fail the student on the assignment/exam or even FAIL the student in the course. Some examples of violations will be discussed on the first day of class. These include:

1. Plagiarism
   - You must use your OWN words. If you copy more than two or three consecutive words from an author, then you are plagiarizing that author.
   - A student who uses an author’s words as her/his own will receive 0 points for that assignment. A second offense will result in failure in the course.

2. Submitting work completed by another individual.
   - A student who copies another student’s work and the student who allowed the other student to copy her/his work will each receive 0 points for that assignment. A second offense will result in failure in the course.

3. Failure to return or removal of an exam.

4. Discussion of quizzes and exams with students who have yet to take them.

5. Any other forms of cheating.
Core Professional Behaviors:

1. Personal Responsibility
   - Student attends all lecture and laboratory sessions, is punctual, and completes assignments and tasks on time.

2. Honesty and Integrity
   - Student is honest in word and actions and is accurate in reporting all information, and maintains a positive learning environment.
   - Student follows University policies regarding academic integrity (i.e. cheating, removal of an exam, passing exam information to peers, etc.)

3. Respect:
   - Student gives full attention to lecturer, does not talk in class, and treats others with dignity.
   - Student refrains from the use of technology during class (cellphones, headphones, laptops, etc.)

4. Teachability / Adaptability
   - Student takes responsibility for own actions and understands consequences of inappropriate actions.
   - Student behavior is appropriate during times of high stress.

5. Communication
   - Student properly formats emails to instructors and with respect (i.e. appropriate salutation, complete sentences, proper grammar, signed with student name and section, etc.)
   - Student refrains from spreading rumors regarding instructors and course assessments.
   - Student follows appropriate procedures for discussion of course issues and concerns:
     - 1st: Student contacts his/her instructor.
     - 2nd: Student communicates concerns to the department chair (Dr. Baldridge).

6. Relationship with Peers
   - Student participates in class and small group discussions.
   - Student demonstrates ability to function within a group (i.e. student respects the opinions of others and can work collaboratively to solve problems).

Consequences if a student does not meet the above expectations:
At the discretion of the instructor:
   - Removal from class.
   - A deduction in course points (i.e. – 10 points for cellphone use)
   - Full letter grade deduction for multiple offenses.

Accommodations for Disabilities:
Students with documented disabilities that may need accommodations, or any student considering obtaining documentation, should contact the Walter Young Center no later than the first week of class. The instructor will make appropriate accommodations once notification is received.
Note:
The instructor and Carroll University reserve the right to modify, amend, or change the syllabus (course requirements, grading policy, schedule, etc.) as the curriculum and/or program requires.

Tentative Lecture Schedule:
All readings are from the Guyton textbook.

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<thead>
<tr>
<th>Week Of:</th>
<th>Topic</th>
<th>Readings</th>
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<tbody>
<tr>
<td>June 7th</td>
<td>Introduction, Cell and Membrane Physiology</td>
<td>Chapters 1, 2, 4</td>
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<tr>
<td>June 14th</td>
<td>Nervous System and Sensory Physiology</td>
<td>Chapters 5, 45, 46</td>
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<td>June 21st</td>
<td>Sensory Physiology</td>
<td>Chapters 46, 47, 49-53</td>
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<td></td>
<td><strong>Exam #1 (Friday 6/23)</strong> through Nervous System</td>
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<tr>
<td>June 28th</td>
<td>Endocrinology</td>
<td>Chapters 74-79</td>
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<tr>
<td>July 5th</td>
<td>Muscle Physiology</td>
<td>Chapters 6-8, 54</td>
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<tr>
<td>July 12th</td>
<td>Cardiovascular System</td>
<td>Chapters 9-13, 23</td>
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<tr>
<td></td>
<td><strong>Exam #2 (Friday 7/14)</strong> through Muscle Physiology</td>
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<tr>
<td>July 19th</td>
<td>Cardiovascular and Respiratory System</td>
<td>Chapters 14-22, 37-42</td>
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<tr>
<td>July 26th</td>
<td>Respiratory and Digestive System</td>
<td>Chapters 37-42, 62-65</td>
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<td><strong>Exam #3 (Friday 7/28)</strong> through Respiratory Phys.</td>
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<tr>
<td>August 2nd</td>
<td>Digestive and Urinary System</td>
<td>Chapters 62-65, 25-31</td>
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<td>August 9th</td>
<td>Urinary and Reproductive System</td>
<td>Chapters 25-31, 80-82</td>
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<td>August 16th</td>
<td>Final Exam (Wednesday 8/16)</td>
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