Biology 212, Spring 1996
Human Anatomy and Physiology

The Course
This semester we will continue our study of the form and function of the human body, building on the foundation we created in the fall. Our central themes will still be the complementarity of structure and function, homeostasis, and the hierarchy of organization. In keeping with our systems approach to anatomy and physiology, we will cover the endocrine, cardiovascular, immune, respiratory, digestive, urinary, and reproductive systems this semester. It sounds like a tremendous amount of material, but it comes in smaller, easier to manage chunks, so most students find this semester a bit easier. That doesn’t mean you should slack off! Resolve to stay on top of the material and practice good study habits.

Prerequisites
Biology 211 is a prerequisite for Biology 212. You must have permission of the instructor if you have not successfully completed Biology 211.

Instructor
Dr. Marsha Sousa
Office - 307 Bunnell
Phone - 7095, with voice mail
E-mail - FFMCS
FAX - 6185
Office hours - Thursday, 2-4 p.m., or by appointment

Graduate Teaching Assistants

| Cindy Gulledge                          | Raphaela Stimmelmany                     | Kelly Hochstetler                      |
| Irving 301 (5973)                      | Arctic Health 129 (7929)                  | Home: 455-7336                        |
| E-mail: FTCCG                          | Home: 474-3710                           | E-mail: FSKJH1                         |
| Office hours:                          | E-mail: FTRSI                            | Office hours:                         |

Required Texts and Supplies

The following three books should be packaged together for one price at the bookstore: 
*Laboratory Manual for Fundamentals of Anatomy & Physiology*, Roberta Meehan and F. Martini
*Applications Manual for Fundamentals of Anatomy & Physiology*, by Martini, Welch, Newsome

Optional Texts and Supplies

*Study Guide for Fundamentals of Anatomy & Physiology*, Frederic Martini
Grading Policy
You will receive a letter grade for this course, based on your work in lecture and lab.

Lecture
There will be a total of 4 midterm exams (100 points each) this semester, each covering only the material introduced since the previous exam. The final exam will cover the last part of the course (100 points) and will also include a comprehensive portion (100 points).

Lab
There will be four major lab quizzes this semester. None of these quizzes is comprehensive. Each may include both written and “practical” portions. You will note in your lab schedule that on 5 different labs, homework (HW) will be assigned. Details will be given at the time of the assignment. Each of these homework assignments will be worth 20 points.

Reading Assignments
There will be two reading assignments this semester. Articles will be placed on reserve, and specific questions regarding the articles will be posed. A maximum of 25 points will be awarded for your answers to these questions. The purpose of this exercise is to introduce you to scientific literature. We will start with an article that is easy to read and comprehend, and move on to articles published in medical journals.

The tally
Lecture exams = 600 points
Lab quizzes = 200 points
Homework = 100 points
Readings = 50 points
Total = 950 points

Grades will be awarded based on a traditional grading scale: (A = 90-100, B = 80-89, C = 70-79, D = 60-69, F = <60). Grades are not curved in this class.

Testing
Please take all exams at the time they are scheduled. I realize that there may be legitimate conflicts occasionally, and I am certainly willing to work with you on those conflicts. If you know ahead of time that you are going to miss an exam, please see me before the exam to schedule a make-up. If you otherwise miss an exam, you have 24 hours to contact me with your reason, and schedule a make-up. After 24 hours, I will take 5 points off for every day you delay in scheduling a make-up. All make-up exams are essay exams.

Test Format
Lecture exams will consist primarily of multiple choice and short essay questions, although you may occasionally find matching, fill-in-the-blank, drawing, and identifying drawings. Lab exams will be part written, and part “practical”.
Attendance
Please attend all labs and lectures. You are responsible for all material covered in lecture and in lab. If you must be absent from lecture, be sure to get the notes from someone in class. If you must be absent from lab, make arrangements with me to attend another lab section. If that does not fit your schedule, you will need to come in and make up the work on your own, and neither the teaching assistants nor I will necessarily be there to help you. In addition, demonstration materials may not be available.

Academic Honesty
Learning is a collaborative effort. We all learn from each other: studying, talking, questioning, listening. Testing is NOT a collaborative effort. I expect the work on your exams and your homework to be yours alone, and to be done without aids. In adherence with the University's Academic Honor Code, if you cheat on an exam, or represent someone else's work as your own, you will receive a grade of 0 for that assignment. If you violate the honor code a second time, you will receive a failing grade for the course and may be referred to the University Disciplinary and Honor Code Committee for possible suspension from the University.

Help is Available!
Please do not let yourself become overwhelmed with the material we cover in class. If you have any question, no matter how small or how big, ask me or one of the teaching assistants as soon as possible. If our office hours are not convenient for you, we can set up an appointment. We can also help you find a tutor if you need one. If you have a disability or special need, please let me know as soon as possible so that we can arrange for assistance from the coordinator for Services for Students with Disabilities, Diane Preston.
STUDY TIPS

There is no "one best way" for all people to study. But there are a few things we all have in common. The two main ways that we transfer information into long term memory are by repetition, and by association with something already in long term memory. Keeping that in mind, here are my suggestions for learning A and P.

1. **Before class, SKIM** the chapter we will be discussing. Don't bother to read it in detail, just get familiar with the topic and the words.

2. **As soon after class as possible, go over your notes.** Clarify things in your notes by completing drawings, writing out words that you have abbreviated, or looking up things that don't make sense. You may want to write page numbers on your class notes referring you to related figures in the textbook. Recopy your notes if you find that this is a good learning tool for you and not just busy-work.

3. **Now read the chapter in the text.** If underlining is useful for you, do that. If outlining is more useful, choose that technique. Skip any sections of the text that we did not cover in class.

4. **Make a vocabulary list** or flash cards to help you learn new words.

5. **Use a coloring book or study guide with caution.** These are designed for any course using this book. That course may go into greater detail than we do, or may emphasize other areas than we do.

6. **Study daily,** and for no more than 2 hours at a time. Do not try to study only once a week for 6 or 8 hours. Cramming may get you through the exam, but it won't contribute much to building a framework of knowledge.

7. **Visualize** the structure you're studying and think about how structure relates to function.

8. **Explain things to someone else,** think about how you would teach it, or at least say things out loud to yourself.

9. **Try to relate the information in class to the real world as much as possible.** Does it help explain some illness you had? Does it clarify some article you read? Does it relate to a test the physician ordered? A sports injury? An exercise program? A diet? Think of anything you can that will help you make an association with something already in your long term memory. This will make it easier to recall the information when you need it.

10. **Try to keep a clear view of the big picture.** If you can see the larger framework, the details will fill in appropriately.
## Biology 212, Spring 1996
### Schedule of Events

<table>
<thead>
<tr>
<th>Day/Date</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>F Jan 19</td>
<td>Introduction, endocrine system</td>
<td>601-609</td>
</tr>
<tr>
<td>M Jan 22</td>
<td>Endocrine system, pituitary</td>
<td>609-613</td>
</tr>
<tr>
<td>W Jan 24</td>
<td>Pituitary</td>
<td>614-615</td>
</tr>
<tr>
<td><strong>Lab 1 - No Lab This Week</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Jan 26</td>
<td>Thyroid, parathyroid</td>
<td>617-622</td>
</tr>
<tr>
<td>M Jan 29</td>
<td>Thymus, adrenal</td>
<td>622-626</td>
</tr>
<tr>
<td>W Jan 31</td>
<td>Pancreas</td>
<td>629-634</td>
</tr>
<tr>
<td><strong>Lab 2 - Endocrine anatomy and case studies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Feb 2</td>
<td>Kidneys, heart, pineal, gonad</td>
<td>627-629, 634-636</td>
</tr>
<tr>
<td>M Feb 5</td>
<td>Hormones and stress</td>
<td>636-639</td>
</tr>
<tr>
<td>W Feb 7</td>
<td>Exam 1</td>
<td></td>
</tr>
<tr>
<td><strong>Lab 3 - Introduction to statistics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Feb 9</td>
<td>Blood</td>
<td>649-659</td>
</tr>
<tr>
<td>M Feb 12</td>
<td>Blood</td>
<td>659-664</td>
</tr>
<tr>
<td>W Feb 14</td>
<td>Blood</td>
<td>664-677</td>
</tr>
<tr>
<td><strong>Lab 4 - Blood</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Feb 16</td>
<td>Cardiovascular system</td>
<td>681-694</td>
</tr>
<tr>
<td>M Feb 19</td>
<td>Cardiovascular system</td>
<td>694-700</td>
</tr>
<tr>
<td>W Feb 21</td>
<td>Cardiovascular system</td>
<td>700-713</td>
</tr>
<tr>
<td><strong>Lab 5 - Lab Quiz #1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Feb 23</td>
<td>Anatomy of the heart and blood vessels</td>
<td>718-737</td>
</tr>
<tr>
<td>M Feb 26</td>
<td>Cardiovascular system</td>
<td>737-749</td>
</tr>
<tr>
<td>W Feb 28</td>
<td>Exam 2</td>
<td></td>
</tr>
<tr>
<td><strong>Lab 6 - ECG, Blood pressure, microbiology</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Mar 1</td>
<td>Lymphatic system, immune system</td>
<td>779-798</td>
</tr>
<tr>
<td>M Mar 4</td>
<td>Immune system</td>
<td>798-819</td>
</tr>
<tr>
<td>W Mar 6</td>
<td>Respiratory system</td>
<td>825-843</td>
</tr>
<tr>
<td><strong>Lab 7 - Lab Quiz #2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Mar 8</td>
<td>Spirometry</td>
<td>843-857</td>
</tr>
<tr>
<td><strong>Mar 11-17</strong></td>
<td>Spring Break</td>
<td></td>
</tr>
<tr>
<td>M Mar 18</td>
<td>Respiratory system</td>
<td>858-871</td>
</tr>
<tr>
<td>W Mar 20</td>
<td>Digestive system</td>
<td>877-902</td>
</tr>
<tr>
<td><strong>Lab 8 - Digestive system, chemical digestion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Mar 22</td>
<td>Digestive system</td>
<td>902-918</td>
</tr>
<tr>
<td>M Mar 25</td>
<td>Digestive system</td>
<td>918-928</td>
</tr>
</tbody>
</table>
# Lab Schedule
## Biology 212, Spring 1996

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Lab Manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 24/25</td>
<td>No Lab This Week</td>
<td></td>
</tr>
<tr>
<td>Jan 31/Feb 1</td>
<td>Endocrine anatomy and case studies (HW)</td>
<td>Ex 43, 44a</td>
</tr>
<tr>
<td>Feb 7/8</td>
<td>Scientific method, Introduction to statistics (HW)</td>
<td>Handouts</td>
</tr>
<tr>
<td>Feb 14/15</td>
<td>Blood</td>
<td>Ex 46</td>
</tr>
<tr>
<td>Feb 21/22</td>
<td>Lab Quiz #1 (50 points)</td>
<td>Ex 47, Ex 49</td>
</tr>
<tr>
<td></td>
<td>Anatomy of the heart and blood vessels</td>
<td></td>
</tr>
<tr>
<td>Feb 28/29</td>
<td>ECG, Blood pressure</td>
<td>Ex 50, Ex 51</td>
</tr>
<tr>
<td>Mar 7/8</td>
<td>Lab Quiz #2</td>
<td>Ex 56a, Handouts</td>
</tr>
<tr>
<td></td>
<td>Spirometry, anatomy of respiratory system</td>
<td></td>
</tr>
<tr>
<td>Mar 20/21</td>
<td>Digestive system anatomy, enzymatic digestion</td>
<td>Ex 59, Ex 60a</td>
</tr>
<tr>
<td>Mar 27/28</td>
<td>Nutrition, diet analysis (HW)</td>
<td>Handouts</td>
</tr>
<tr>
<td>Apr 3/4</td>
<td>Lab Quiz #3</td>
<td>Handouts</td>
</tr>
<tr>
<td></td>
<td>Metabolic rates</td>
<td></td>
</tr>
<tr>
<td>Apr 10/11</td>
<td>Anatomy urinary system, urinalysis (HW)</td>
<td>Ex 62, Ex 63, Ex 64a</td>
</tr>
<tr>
<td>Apr 17/18</td>
<td>Genetics, heredity (HW)</td>
<td>Ex 70</td>
</tr>
<tr>
<td>Apr 24/25</td>
<td>Anatomy of reproductive system</td>
<td>Ex 65, Ex 66, Ex 67, Ex 68a</td>
</tr>
<tr>
<td>May 3/4</td>
<td>Lab Quiz #4</td>
<td></td>
</tr>
<tr>
<td>Day</td>
<td>Date</td>
<td>Event</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>W</td>
<td>Mar 27</td>
<td>Exam 3</td>
</tr>
<tr>
<td>Lab 9 - Nutrition, diet analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Mar 29</td>
<td>Metabolism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>935-946</td>
</tr>
<tr>
<td>M</td>
<td>Apr 1</td>
<td>Metabolism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>947-954</td>
</tr>
<tr>
<td>W</td>
<td>Apr 3</td>
<td>Metabolism, thermoregulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>954-973</td>
</tr>
<tr>
<td>Lab 10 - Lab Quiz #3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Apr 5</td>
<td>Urinary System</td>
</tr>
<tr>
<td></td>
<td></td>
<td>979-991</td>
</tr>
<tr>
<td>M</td>
<td>Apr 8</td>
<td>Urinary system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>991-1008</td>
</tr>
<tr>
<td>W</td>
<td>Apr 10</td>
<td>Urinary System, Fluid and electrolyte balance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1009-1034</td>
</tr>
<tr>
<td>Lab 11 - Anatomy urinary system, urinalysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Apr 12</td>
<td>Fluid and electrolyte balance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1034-1052</td>
</tr>
<tr>
<td>M</td>
<td>Apr 15</td>
<td>Exam 4</td>
</tr>
<tr>
<td>W</td>
<td>Apr 17</td>
<td>Meiosis, heredity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1134-1141</td>
</tr>
<tr>
<td>Lab 12 - Genetics, heredity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Apr 19</td>
<td>Reproductive system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1059-1077</td>
</tr>
<tr>
<td>M</td>
<td>Apr 22</td>
<td>Reproductive system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1077-1091</td>
</tr>
<tr>
<td>W</td>
<td>Apr 24</td>
<td>Reproductive system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1091-1103</td>
</tr>
<tr>
<td>Lab 13 - Anatomy of reproductive system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Apr 26</td>
<td>All Campus Day - No Classes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Apr 29</td>
<td>Embryo development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1109-1128</td>
</tr>
<tr>
<td>W</td>
<td>May 1</td>
<td>Pregnancy, parturition, lactation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1128-1134</td>
</tr>
<tr>
<td>Lab 14 - Lab Quiz #4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>May 3</td>
<td>Technologies related to reproduction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not in text</td>
</tr>
<tr>
<td>W</td>
<td>May 8</td>
<td>1-3 p.m. Final Exam (100 points since last exam, 100 points comprehensive)</td>
</tr>
</tbody>
</table>