ANATOMY AND PHYSIOLOGY II
Biology F214X, 4 Credits
Spring, 2017 FE1

Course Description
Biology 214X, together with it’s companion course, Biology 213X, will provide you with an understanding of the structure and function of the human body. You can build on this foundation by taking additional undergraduate courses, by pursuing graduate or professional studies, and by reading scientific and technical literature. This course is required for students entering the AAS nursing program at UAA/UAF, the BS nursing program at UAA, the dental hygiene program at UAA or UAF, and the radiologic technology programs at UAA/UAF. There are many other allied health programs that will require a 2-semester human A&P course, such as physical therapy, occupational therapy, physician’s assistant and medical technology. This course is not required by medical schools. This course meets a core curriculum requirement at UAF.

Course Prerequisites
Successful completion of Biology 213X or the equivalent.

Course Information
Lecture: Monday 5:30-8:30 PM
Location: Murie Auditorium

Lab: Wednesday 6-9 PM.
Location: Murie 303

Professor
Sandy Lewis
Office: Murie 113D
Phone: 907-474-2693
Email: sglewis@alaska.edu
Office hours: Monday 2-3 and 4:30-5:15, Wednesday 2-3, and other times by appointment. The professor encourages students to meet during office hours and/or to make appointments as necessary.

Teaching Assistants
Your TAs will be instructing lab sections. They meet regularly with the professor with the common goal to ensure that each lab receives the same information and that all labs are synchronized with the lectures as much as possible. Your TA will be holding office hours to assist whenever you have questions or need extra help learning A&P.
Biology 214X TAs:

Michelle Johannsen-email: mmjohannsen@alaska.edu  
Casey Clark-email: ctclark@alaska.edu  

Textbooks

Required textbooks are the same for both Fall F213X, and spring semester, S214X.  
*Human Anatomy and Physiology*, 10th Edition, by Elaine N. Marieb and Katja Hoehn,  

By Elaine N. Marieb, Susan J. Mitchell, an Lori A. Smith  
Published by Pearson Education ISBN 978-0-321-97135-7  

In addition, the online resource “Mastering A and P” is required. This comes with the  
package of books available through the UAF bookstore. It can also be purchased separately at the Mastering website as soon as it is opened by your instructor.  

Students who choose to use a different textbook or an earlier edition of the required text, will still be held accountable for any information in the required textbook. It is advised that you have a class contact with whom you may share a required textbook or lab manual.  

We will also be using the Visible Human Dissector (VHD) program by Touch of Life Technologies. These will be installed on the computers in lab. If you wish to purchase your own VHD, you can contact [www.toltech.com](http://www.toltech.com) in Colorado.  

Course Objectives

The primary objective of this course is for you to gain a solid understanding of basic human anatomy and physiology of the systems covered in Biology 214, and to relate the systems previously covered in Biology 213 to the Biology 214 material. Following successful completion of both Biol 213 and 214, you should have a good understanding and greater appreciation of basic human anatomy and physiology and the interrelationships of all of the body systems, and understand common clinical applications within each of the systems. In addition this course should facilitate your understanding of the scientific process. It is also my hope that you will enhance your ability to learn this type of science and develop more efficient study skills to ensure your success in future science courses.  

Student learning outcomes

These basic student learning outcomes were developed by the Human Anatomy and Physiology Society (HAPS). Anatomy and physiology courses across the country ask the same outcomes of their students. These broad student learning outcomes cover the fundamental content and processes in anatomy and physiology. As we explore individual organ systems, you will be provided with deeper and more specific learning outcomes.
1. Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology.
2. Recognize the anatomical structures and explain the physiological functions of the body systems.
3. Recognize and explain the principle of homeostasis and the use of feedback systems to control physiological systems in the human body.
4. Use anatomical knowledge to predict physiological consequences, and use knowledge of function to predict the features of anatomical structures.
5. Recognize and explain the interrelationships within and between anatomical and physiological systems of the human body.
6. Synthesize ideas to make a connection between knowledge of anatomy and physiology and real-world situations, including healthy lifestyle decisions and homeostatic imbalances.
7. Demonstrate laboratory procedures used to examine anatomical structures and evaluate physiological functions of each organ system.
8. Interpret graphs of anatomical and physiological data.

**By the end of the semester you should be able to:**

1. Describe the composition of blood and clinical significance of blood components and hematological values.
2. Explain and demonstrate the process of blood typing and the theory supporting the process.
3. Explain the process of coagulation and fibrinolysis.
4. Describe the anatomy and physiology of the cardiovascular system and its interrelationship to other body systems.
5. Describe the anatomy and physiology of the lymphatic system.
6. Explain the basic principles of the immune system.
7. Describe the anatomy and physiology of the respiratory system and demonstrate how to measure and compute major respiratory volumes and capacities.
8. Describe the anatomy and physiology of the digestive system.
9. Describe the anatomy and physiology of the urinary system and illustrate ways in which the urinary system ties together all other systems of the body
10. Be able to perform a complete urinalysis and understand the clinical significance of UA results.
11. Describe the anatomy and physiology of the reproductive systems.
12. Explain the major ways in which the endocrine system works to regulate each of the systems of the human body.
13. Apply knowledge of each system covered to causes and treatments of select diseases/disorders and understand basic diagnostic methods which apply to those disease processes.
14. Apply knowledge from Biology 213X (homeostasis, histology, skeletal, muscular, etc.) to the systems covered in Biology 214X.

**Instructional methods**

Lectures will include traditional lecture style, taking notes by hand, drawing and labeling, on-screen visuals, discussions, demonstrations, and videos. Laboratory
activities occur primarily in groups (except for lab practical exams and quizzes) and include microscopy, dissection, varying hands-on activities, research activities, online assignments, and other various learning technologies online.

Reading and studying the text prior to lecture, taking your own notes, asking questions for clarification, and actively participating in class activities and discussions all will contribute to your success in this class.

Lab is essential to learning anatomy and physiology. It is where you translate 2-dimensional photos in the book, board and screen, into 3-dimensional reality. It is where you apply the principles that you learned by reading, listening, looking, and interactively discussing.

Blackboard online site will be a primary means of communicating, completing some assignments and tracking your grades. It will also be used to convey routine and emergency information, as necessary.

Mastering A and P, Pearson’s online learning system, comes with the required text. It contains a wealth of learning and review experiences, and will be used to enhance learning anatomy and physiology. Mastering A and P can be accessed at https://www.masteringaandp.com. The course ID is BIOLF214XSPRING2017.

Attendance and Class Expectations

Lecture

Attendance is required in lecture and will be taken from time to time. Each missed lecture documented by a roll call, sign-in sheet, quiz, etc will result in a 5 point deduction in your final score. If you must miss lecture, you are still fully responsible for all information given during a lecture period. **This includes all announcements.** For example: if it is announced in lecture that a quiz will be given during the next lecture class, all students are expected to come prepared for the quiz. Any student not taking the quiz will receive a zero for that quiz. Therefore, you are advised to establish a contact person in the class from whom you may get information in the event you must miss a class. It is expected that students will not miss any class sessions except for emergencies. Successful students attend lecture regularly.

Please arrive on time for lecture. If you are late, you are required to sit in the back, to minimize disruption of lecture. Guests may be accommodated in lecture, but please let the instructor know ahead of time. Children are only allowed in class when there is an emergency, and that emergency must be discussed with the instructor before class. It is the student's responsibility to determine whether or not the subject matter is appropriate for the child that he or she must bring to class in an emergency. The instructor may overrule the parent in this decision, if necessary. In this class we have discussions (sometimes with mature subject matter), graphic videos and other media that are inappropriate for children of some ages. ALL students with a child in class due to an emergency (previously approved)
must sit in the back row and provide the child with crayons, pencils and paper, etc. so that the child is not disruptive in any way, otherwise the student and child will be asked to leave immediately, and without discussion. Guests and children are not allowed in lecture during exams.

Lab

Attendance in lab is mandatory. Missing the hands-on learning experiences offered in a lab setting, can generally not be made up. Twenty points will be deducted from your total lab score for each missed lab. You must attend the lab section for which you are registered, however in the event of an emergency, and with permission of both TAs involved, you may arrange to have one missed lab, due to an unavoidable emergency made up during another lab section associated with 1:00 PM lecture section. Keep in mind that TAs may not overload a lab section in order for you to make up a lab. This is for safety purposes.

In labs, you are expected to arrive on time and will sign in at the time that you arrive. Arriving to lab more than 10 minutes late may result in a 5 point deduction in your lab score, depending on the circumstance. Plan on staying for the entire lab. You must sign out when you leave lab. Leaving lab early will result in a 5 point deduction in your lab score. Your TAs will make decisions regarding the official required ending time for labs.

All students are expected to be respectful toward each other, and toward their instructors.

Absolutely no food or drink is allowed in lab. Only covered drinks (no food) are allowed in the lecture hall.

Only those individuals enrolled in the class are allowed in labs (this includes infants). This regulation is for the health and safety of infants and young children.

Generally, all electronic devices must be turned off during lecture and labs, unless otherwise instructed. For example, photographing areas of hematology or urinalysis slides that you view with your microscopes is allowed. Internet searches will also be conducted from time to time. Your instructor or TA will inform you when you may use cell phones or other electronic devices in class.

All students are expected to be respectful toward lab specimens, equipment, bones, etc.

Academic Honesty

While learning is a collaborative effort, testing is not. Cheating in any way will not be tolerated. The work on your exams and quizzes is to be yours alone and to be done without aids. Cell phones on during exams is considered cheating. Caps are not allowed during exams. Allowing others to view your work is considered cheating. Organized and group cheating is not allowed. Plagiarism is not allowed. 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 further action. Please review the honor code stated in the UAF Catalog.

**Grading**

Apportionment for final grade for Biology 214X:

**Lecture**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points Possible</th>
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<tbody>
<tr>
<td>Tests #1-3</td>
<td>300 points</td>
</tr>
<tr>
<td>Final exam (comprehensive)*</td>
<td>100 points</td>
</tr>
<tr>
<td>Misc quizzes/assignments</td>
<td>60-100 points</td>
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<tr>
<td>Oral quiz</td>
<td>30 points</td>
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Total lecture points possible: 490-530 points

**Lab**

There will be 2 lab exams worth 100 points each. In addition, there will be lab quizzes worth from 10-15 points each up to a total of 50 points. Details regarding lab exams, quizzes, expectations in lab and most importantly lab safety* will provided by your teaching assistants during the first lab.

Lab total points: 250 points

Total 740-780 points

Grading Scale:

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<tr>
<th>Percentage Range</th>
<th>Grade</th>
<th>Grade Points</th>
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<tbody>
<tr>
<td>95-100%</td>
<td>A+</td>
<td>4.0</td>
</tr>
<tr>
<td>90-94%</td>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>89%</td>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>87-88%</td>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td>80-86%</td>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>79%</td>
<td>B-</td>
<td>2.7</td>
</tr>
<tr>
<td>77-78%</td>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td>70-76%</td>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>69%</td>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>60-68%</td>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>&lt;60%</td>
<td>F</td>
<td>0.0</td>
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Incompletes will only be assigned in the event of a serious, unexpected occurrence beyond the student's control. Incompletes will be assigned only to qualifying students who have
attended lecture and lab regularly and have completed at least two-thirds of the course material with at least a 70% average.

A no-basis grade (NB) will only be assigned if the student has never attended class and has never taken a test or quiz.

Extra-credit work is not accepted in this class. Some extra credit questions may be built into exams.

**Test Format**

Lecture exams 1-3 may contain any or all of the following types of questions: fill-in the blank, short answer, drawing and labeling, labeling and/or identification of drawings, matching, multiple choice. The final exam is comprehensive for Biology 213 and 214 courses and will consist of 100 multiple-choice questions. Lab exams will include both written and practical questions.

Your ability to communicate concepts clearly in writing is essential for your success in this course. This includes spelling terms correctly.

There are NO make-ups for missed tests unless a VALID excuse is discussed with the instructor PRIOR to the test. In the event of an emergency, please either email or call me before the time class begins so that you may be able to petition to take a make-up exam. Make-up exams are not the same as the exams given in class, and are likely to contain more essay questions than the class exam.

*Note Regarding Lab Safety*

Laboratory safety is our primary concern. Please listen closely to, and follow, the safety instructions given to you by your lab TA. You are responsible for reading, studying, and adhering to all safety rules and guidelines as they pertain to each anatomy and physiology laboratory.

**Class Etiquette**

- Be respectful of your fellow students and instructors. If you have comments or questions, please raise your hand. There will be times in lecture when you are encouraged to engage in class debates and discussion in small groups, otherwise talking and chatter is unacceptable.
- Please arrive on time and with the necessary supplies. If you must arrive late, please arrive quietly and sit toward the back or in an area which will be least distracting. It is advisable to arrive 7-10 minutes early on days in which a lecture exam or quiz will be given. If you arrive late and miss needed time to complete a tests or quiz you will not be given extra time to complete it.
- Stay for the entire class.
- If you are asked to leave class or an exam, for whatever reason, I will not discuss it with you until class is dismissed, so you are expected to leave quickly and quietly.
- Take your bathroom breaks between class, not during class (unless it’s a real emergency!).
- **Encourage each other!** Help each other to learn the material. If you are in the “giving of information” role, you will benefit as much as if you are in the “receiving of information” role.
- Do not bring children, friends or relatives to class unless you have checked with me ahead of time. **Visitors, including children, are not allowed in lab at any time.**
A Few Study Tips

1. Read each chapter in the text before it is covered in lecture. Pay particular attention to the diagrams, charts, graphs and tables, photos, and clinical applications of the material covered in the text. While you may not understand or retain everything you read, having become familiar with the concepts we will be covering in class will help you understand lectures much better.

2. Take notes during lecture. Do not try to write down everything said, word for word. Rather, outline general concepts and draw and label by hand any diagrams drawn for you by the instructor.

3. As soon after lecture as possible, go back to the textbook and clarify the concepts covered during lecture.

4. Study the material daily. Try to stay one step ahead of the syllabus. Since one concept builds on another in this course, you most definitely don't want to fall behind!

5. Establish study groups and/or find yourself a study partner. Study together as well as by yourself. Speak the “A&P” language out loud together. Create short written tests for yourself and your study partners.

6. Ask questions if you don't understand something.

7. Use the supplements accompanying your text. You should know by the end of the second week of classes which supplement is going to be most helpful for you. Everyone's learning style is a little different, so what works well for one student may not work well for another. Make an effort during the first part of the course to discover how you best learn this material.

8. Find time to have fun! Having some genuine “fun time/relax time/mindless energy time.” It will make your actual study time more productive.

Help is available

- Please take advantage of office hours. Professor Lewis and the TAs will have posted office hours as well as being available at other times by appointment. If you make an appointment with one of your instructors, you are expected to be on time for that appointment. If you must cancel, please do so at least 24 hours in advance if at all possible.

- Disability services provides assistance to any student with a documented disability. If you have a disability, please contact them (474-5655, 208 Whitaker Building) early in the semester. If you have documentation of your disability, please bring it to my attention as soon as possible so that I may provide the accommodations you need. Any student not taking a lecture exam or quiz with the class must adhere to the same rules as students in the class. Your test must begin the exam at the same time as the class exam and on the same day. The instructor reserves the right to give you an oral quiz on the material if it is suspected that your performance on the special needs exam is questionable.
• Student-athletes need to meet with me during the first week of class.

• If English is your second language, please see the instructor during the first week of class.

Anatomy and physiology is a highly relevant topic. Please feel free to bring in interesting articles, pertaining to course material, that you come across in reputable journals, web sites, etc.

I look forward to getting to know each of you as we continue working together to study and learn about our fascinating human bodies!
# Biology 214 Anatomy and Physiology II

Schedule - Spring 2017, for FE1

Professor: Sandy Lewis  
Office: Murie 113D  
Tel: 907-474-2693  
email: sglewis@alaska.edu

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates*</th>
<th>Chapter/Topic</th>
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<tbody>
<tr>
<td>1.</td>
<td>1/18</td>
<td>17. Blood</td>
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| 2.   | 1/23    | Blood (continued)  
18. Cardiovascular System: The Heart |
| 3.   | 1/30    | 19. Cardiovascular System: Blood Vessels & Hemodynamics |
| 4.   | 2/6     | Test #1  
20. The Lymphatic System and Lymphoid Organs and Tissues  
| 5.   | 2/13    | 21. Immune System (continued)  
Special lecture (required attendance)  
Lymphatic and immune system take-home handed out-due 2/20 at 5:30 PM |
| 6.   | 2/20    | 22. The Respiratory System |
| 7.   | 2/27    | 23. The Digestive System |
| 8.   | 3/6     | 23. The Digestive System (continued)  
24. Nutrition, Metabolism and Energy Balance  
Nutrition, metabolism and energy take-home handed out-  
Due on Monday, 3/27 at 5:30 PM. |
| 9.   | 3/13-3/17 | Spring Break! |
10. 3/20  Test #2
25. The Urinary System

11. 3/27  25. The Urinary System (continued)

12. 4/3  26. Fluid, Electrolyte and Acid-Base Balance (continued)

13. 4/10  27. The Reproductive Systems

14. 4/17  27. The Reproductive Systems (continued)
28. Pregnancy and Human Development
29. Heredity

15. 4/24  Test #3
Review for Final Exam

16. 5/1  Oral quiz/Review activities
5/3  Final Exam 5:45-7:45 PM

*Note: Dates in bold are test dates and dates for which points will be deducted for non-attendance.