Let’s get to the heart of the matter!

BIOL F112X (4 credits)
University of Alaska Fairbanks
Summer 2012
Dr Jill Russell & Sophie Chowdhury
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Part I: Syllabus

1. Description of Human Anatomy & Physiology II

Human A & P II is an Integrated view of human structure and function for students in pre-professional allied health programs, biology, physical education, psychology and art. Examines circulatory, respiratory, digestive, excretory, endocrine and reproductive systems. The course discusses biological concepts and principles as a foundation for understanding normal developmental changes as well as pathological alterations. Includes clinical correlations in health practice. Lecture, Lab. Animal dissections required. This course manual is modeled after Dr. Abel Bult-Ito’s A & P manual.

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<thead>
<tr>
<th>Lecture Instructor</th>
<th>Jill Russell, Ph.D.</th>
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<tr>
<td>Office:</td>
<td>to be announced</td>
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<tr>
<td>E-mail:</td>
<td><a href="mailto:jill_russell@mail.msj.edu">jill_russell@mail.msj.edu</a></td>
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<tr>
<td>Office hours:</td>
<td>M/T/W/R after lecture or by appointment</td>
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<tr>
<th>Lab Instructor</th>
<th>Sophie Chowdhury</th>
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Course Meeting Times and Locations

Lectures: M/T/W/R 10:00am- 11:50am
Lecture room: 
Laboratories: M/T/W/R 12:30pm- 3:50pm
Laboratory Room: 


Course Website

Course materials and announcements will be posted on the course website on Blackboard. This utility is available via the UAF website. Students are expected to regularly log on to the A & P website site to keep current with course materials lecture notes, and course announcements. This utility provides many ways for students to communicate among themselves and with the teacher.
Student Objectives: General objectives for this semester are to gain an appreciation of the integrity of the human body and to gain a strong understanding of the unifying theme in biology – homeostasis. BIOL 112 emphasizes the importance of neural communication in the immediate and long-term maintenance of homeostasis. The course also covers how body systems function to maintain homeostasis on a moment-to-moment basis through cells, tissues, organs, and organ systems. Our goal is to provide you with information that will help you when facing medical situations in your future. By having an understanding of how the body works, you will be better suited to make informed decisions regarding your health, the health of your family, and the health of the people you serve.

Learning Outcomes and Performance Indicators
Although BIOL 112 is primarily focused on learning biological content, you will also be asked to make connections to Global/Citizenship, Ethics, Interdependence / Interdisciplinarity, Sociocultural Relationships, Communication, and Critical/Creative Thinking. Each lecture will include discussions of health, disorders, aging, exercise and development to provide students with real life application and everyday relevance of each organ system.

The basic goals of this course are to understand the following concepts:
A. Homeostasis is at the cellular level.
B. Each organ system works to maintain homeostasis.
C. The integration of structures and functions of the various tissues and organ systems in the body is the basis for how you behave, feel, perceive your surroundings, and learn about the concepts presented in this course.
D. The importance of fluid and electrolyte balance in the cell.
E. The fundamental concepts of biological sciences.
F. How scientific research addresses contemporary societal problems and how scientific knowledge is used in the development of public policy.

In the area of interdependence/interdisciplinarity, successful understanding of A&P will require you to demonstrate a capacity to think inclusively and integrate knowledge and concepts across disciplines, utilizing content you bring from other courses and life experience. Competence in critical thinking will enable you to perform well on tests by evaluating class material beyond rote memorization. Group work as occurs in laboratory settings also requires you to display effective communication skills, leadership skills, ethical behavior, and cooperative learning, with sensitivity to the needs and learning styles of your fellow classmates. Successful performance in BIOL 112 will also require that you demonstrate competent communication skills in laboratory and test/quiz situations.

In summary, it is our hope that through this course you will: understand the connections within human A & P; see the relationship of this material to what you already know; take the skills and competencies you learn in this class and apply them in your life. An understanding of the course material will make you more scientifically literate, and help you become a more informed citizen, parent, patient and clinician.

We will use the following approaches to achieve the learning outcomes:
1. **Lecture and discussion.** In lecture, we will talk about the basic concepts in A&P. Opportunities for discussions will be available on a regular basis. An important source for this information is from the textbook and lab manual. These are excellent resources and you will want to keep them as references. I will try to get the lecture notes up on Blackboard at least a day in advance of lecture.

2. **Hands-on experience.** In the laboratory, we will study human organ systems and metabolic and physiological processes discussed above by dissection, (microscopic & models) observation, and experimentation. Trying to get from the laboratory exercises a feeling for the set of specific facts presented, an understanding of the procedures used, and experience in extrapolating to new information and processes will be very important.

This manual will act as your guide for this course. In it is a description of the course requirements, lecture and laboratory topics, and reading assignments, as well as general information to help you get the most out of this class. You should bring it to each class and refer to it regularly throughout the semester.

Your minimal responsibilities for this course are defined in the Course Requirements section below. Be aware, however, that your performance on quizzes, exams and laboratory practicals often depends on how well you integrate all of the different kinds of information you receive from lectures, discussions, laboratory exercises, and your own experiences. Therefore, do not think of those assignments as separate entities but rather as parts of a jigsaw puzzle; together the complete concepts emerge.

**Disabilities Services**
The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will closely work with the Office of Disabilities Services (203 WHIT, 474-7043 or 474-1827 TTY; email: fydso@uaf.edu) to provide reasonable accommodation to students with disabilities. To ensure that everyone has equal opportunities to succeed in this course, please let me know if we need to accommodate any disabilities that you may have. Any information you provide will be held strictly confidential.

**Support Services**
Computer labs in 301 Bunnell and 407 Bunnell are available for your use, including printing. For general support services, please contact Student Support Services, 508 Gruening Building, Phone: 474-6844, E-mail: fysssp@uaf.edu.

**Electronics in the classroom**
No laptops are allowed in the classroom. No electronics like iPods, music players, and alike are allowed in the classroom. Cell phones need to be turned off. Any violation of this policy will result in confiscation of your electronic gadget without recourse.
2. Course Requirements

To do well in this course you must attend all class and laboratory meetings. Your grade will be based on the following criteria:

1. Exams 55%
2. Lecture Quizzes 10%
3. Lab Quizzes 7%
4. Laboratory Practicals 18%
5. Class Participation in Lecture & Lab 10%

Total: 100%

Lecture Exams
Five exams will be given (see Section 4). Exams will cover any material presented in all lecture meetings from the beginning of the course (exam 1) or since the last exam (exams 2-4). The final exam will cover any material presented in all class meetings since the last exam (exam 4). These materials include assigned readings fully or partially discussed in class. Assigned readings not at all discussed during class meetings will not be part of the exams, unless indicated otherwise. The questions will be multiple choice, matching, and true/false.

If you are not able to attend the final exam on Thursday, August 16th from 10:00am-11:50 am, you must let me know as soon as possible in advance; only emergency situations (e.g., serious illness (doctor’s note required), and death in the family) will be considered. So, oversleeping, forgetting the final exam date, scheduling fights home, or scheduling a doctor’s appointment during the final exam time are NOT valid reasons and will NOT be considered. NO final exam makeup will be offered.

Lecture Quizzes: Ten lecture quizzes will be given (see Section 4) and you can drop the lowest one. Each lecture quiz will be based on the big picture of Homeostasis at the cellular level, the relationship of form and function, and information previously covered in lecture and chapter readings. The questions will all be short answer or fill in the blank.

Class participation in Lecture
Attending lectures and actively engaging in the material is crucial for successful completion of this course. Students are expected to attend classes regularly. They must meet the requirements of the course as set by the instructor and stated in the course syllabus (MSJ UG Catalog). Students who come into class after attendance has been taken will be considered absent. Unexcused absences will result in loss of class participation credit. Only emergency situations (e.g., serious illness (doctor’s note required), death in the family) will be considered excused absences. So, scheduling a doctor’s appointment during class time is not considered an excused absence.
3. Lab Policies

Objectives
The laboratory component of BIOL 112 is designed to meet several objectives. One is to provide students with experiences in making scientific observations of physiological phenomena. This typically involves the use of the scientific method, electronic equipment, and group effort. For the most part, scientific study is done by groups of investigators, rather than individuals working alone. In this course, you will use a hands-on approach and work in small groups to conduct experiments designed to illustrate the physiological concepts presented in lecture. You will also explore some of the bio-ethical and environmental issues facing society today and discuss their social and economic impact.

Lab Assignments
The lab schedule is located in section 3 of this syllabus. All items pertaining to Lab are located in the right hand column of the syllabus and are in red. You will work in pairs in the laboratory. Students will perform activities each week based on the exercises in the lab manual. The laboratory assignments will consist of completion of worksheets in the lab manual. In order to take full advantage of the time you have in the lab classroom, please complete as much of the lab worksheet as possible BEFORE you arrive in lab. Instead of collecting and grading the worksheets in the lab manual each week, students will complete the worksheets during lab, show the instructor the completed worksheets at the end of the laboratory period and will then be allowed to view the answer key to check their answers. Students will keep lab worksheets as a study guide for the lab practicals.

Lab Quizzes: There will be a 10 pt quiz at the end of each lab. Students must have lab worksheets completed in order to take the quiz.

Laboratory Practicals
Five laboratory practicals will be given (see course manual section 3 for dates). These will cover information from the previous two laboratory sessions. Questions will be in reference to actual specimens (microscopic or gross), drawings, models, or photographs and, among others, will ask for specific information on identity, function, and relationship to other structures. Students will circulate between stations during the lab practical and will have the opportunity to revisit each station once all students have cycled through.

Lab Policies
The following are the expectations of the students:

- Students are expected to come to lab prepared to perform lab, and to **read the instructions for the lab ahead of time**.
- **A student who is 10 minutes late for class will be considered absent.** (We have a lot to accomplish, and cannot stop to catch someone up)
- Attend every lab. **If a student misses more than one lab, the student will be dropped from lab and will receive an F in lecture.**
- **Excused absences:** If you will not be able to attend lab, you must provide documentation (doctor’s note or parent’s note in the case of a funeral) proving that you were unable to attend lab that day.
• If you oversleep or are feeling ill on the day of lab and you miss lab, you MAY NOT make up the lab by attending a different lab section.
• Scheduling a doctor’s appointment during lab time is NOT considered an excused absence.
• **Missed lab quizzes and practicals may not be made up.**
• **Practicals begin at the start of the assigned lab time and the door will be closed at that time. Entry to the practical will not be allowed once practical has started.**
• Because of the hectic Summer Session schedule, there will be no time to hold open labs outside of the regularly scheduled lab period. Therefore, it is imperative that students use their lab time wisely and fully examine every specimen/model during lab.

**General Lecture Exam, / Laboratory Practical Information**

While taking quizzes, exams and laboratory practicals, you are not allowed to use any reference materials, calculators, notes, or help from others. However, you are strongly encouraged to study for exams with classmates and have a free exchange of information and ideas. Scantron and other answer sheets from exams will be returned in class and the exams and answer keys will be available for review in Dr Russell’s office. We will try to grade the exams and laboratory practicals within one week.

I urge you to read through your exam and bring to my attention any errors made in totaling your points. I also encourage you to see me about a re-grade if you feel that I have misgraded or misinterpreted your answer. Exams should be a learning exercise for all of us and are designed to measure your understanding of the material and core concepts. If you would like a re-grade you should return your test to me by following this procedure:

1. Consult the exam key to see what I accepted for full credit.
2. Explain in writing why you are requesting a re-grade.
3. Give your exam and explanation to me no later than one week after the exams or laboratory practicals have been returned.

**If you are not able to attend a lecture quiz, exam, lab session or lab practical because of a school sponsored function, you must let me know, in writing, via email, at least one week in advance and set up a time to take the quiz/exam/practical early.** If you miss a lecture exam, or lab practical due to an emergency situation (e.g., serious illness (doctor’s note required), death in the family), you must contact the instructor as soon as possible and provide proof of emergency if you would like to take the exam or practical. If you do not follow these steps, you will not be allowed to take the quiz/exam or practical. So, scheduling a doctor’s appointment during the time of a lecture quiz, exam, lab or lab practical is NOT a valid reason and will NOT be considered. **NO lecture exam/quiz or lab quiz/practical makeup will be offered.**

**Grading**

The class will be graded on a straight percentage basis:

- 90-100% = A
- 80-89% of total points = B
- 70-79% of total points = C
- 60-69% of total points = D
- below 60% of total points = F
I will not grade on a curve. This means that in principle everyone will be able to get an A in this course (but of course everyone will also be able to get an F). However, I am confident that you will work hard enough to avoid this scenario.

Note: Be aware that the grading scale above will be used without exception. Therefore, for example 89.9% will result in a final grade of B and 59.9% will result in a final grade of F. The 0.1% difference may seem like a small difference, but since it is based on many separate grades, it truly reflects a level of performance that does not warrant a higher grade. Being on the right side of the cut-off is your responsibility!

How to Get Information on Human Anatomy & Physiology
Human anatomy & physiology website that accompanies the textbook can be found at: http://connect.mcgraw-hill.com/connect/hmSectionHomePortal.doc. This web site can be accessed with access codes in your textbook. Please be aware that access to these resources may have expired if you use used copies of the textbook and laboratory manual. There are many websites that provide excellent information on the different body systems - use them. You may also get great pictures and illustrations on Google images, etc.
# Part II: General Course Information

## 4. Tentative Lecture & Lab Schedule, Readings, Quizzes, Practicals & Exams

### Biology 112X, Tentative Lecture & Lab Schedule, Summer 2013

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Lecture Topic</th>
<th>Reading</th>
<th>Lecture Quiz</th>
<th>Lab Exercises</th>
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<td>July 8</td>
<td>Mon</td>
<td>Introduction, Endocrine system</td>
<td>Chapter 17</td>
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<td>Exercise 28</td>
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<tr>
<td>July 9</td>
<td>Tue</td>
<td>Endocrine System</td>
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<td>July 10</td>
<td>Wed</td>
<td>Endocrine System</td>
<td>Chapter 18</td>
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<td>Exercises 29-30</td>
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<td>July 11</td>
<td>Thurs</td>
<td>Blood</td>
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<tr>
<td>July 15</td>
<td>Mon</td>
<td><strong>Exam 1</strong>, Heart</td>
<td>Chapter 19</td>
<td></td>
<td>Exercise 31</td>
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<td>July 16</td>
<td>Tues</td>
<td>Heart</td>
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<td>July 17</td>
<td>Wed</td>
<td>Hemodynamics</td>
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<td><strong>Lab Practical 1</strong>: Exercise 32</td>
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<td>July 18</td>
<td>Thurs</td>
<td>Hemodynamics</td>
<td>Chapter 20</td>
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<td>July 22</td>
<td>Mon</td>
<td><strong>Exam 2</strong>, Lymphatic System</td>
<td>Chapter 21</td>
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<td>Exercises 34-36</td>
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<td>July 23</td>
<td>Tues</td>
<td>Lymphatic system</td>
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<td><strong>Lab Practical 2</strong>: Exercises 37-38</td>
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<td>July 24</td>
<td>Wed</td>
<td>Respiratory system</td>
<td>Chapter 22</td>
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<td>July 25</td>
<td>Thurs</td>
<td>Respiratory System</td>
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<td>July 29</td>
<td>Mon</td>
<td><strong>Exam 3</strong>, Digestive System</td>
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<td>July 30</td>
<td>Tues</td>
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<td><strong>Lab Practical 3</strong>: Exercises 44-45</td>
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<tr>
<td>July 31</td>
<td>Wed</td>
<td>Nutrition and Metabolism</td>
<td>Chapter 24</td>
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<td>Aug 1</td>
<td>Thurs</td>
<td>Nutrition and Metabolism</td>
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<td>Aug 5</td>
<td>Mon</td>
<td><strong>Exam 4</strong>, Urinary System</td>
<td>Chapter 25</td>
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<td>Aug 6</td>
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<td>Aug 7</td>
<td>Wed</td>
<td>Fluids &amp; Electrolytes</td>
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<td>Thurs</td>
<td>Fluids &amp; Electrolytes</td>
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<td>Aug 12</td>
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<td>Tues</td>
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<td>Aug 14</td>
<td>Wed</td>
<td>Development</td>
<td>Chapter 29</td>
<td>Lab Practical 5</td>
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<td>Aug 15</td>
<td>Thurs</td>
<td>Exam 5</td>
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5. How to Get the Most Out of the Course

1. **Twenty hours each week is the minimum amount of time you will have to commit to this course in order to do well.** Three hrs in lectures, 9 hrs study related to lecture content, 2 hrs in lab, & 6 hrs study related to lab content.

2. Do the assigned readings before coming to class. This will help you understand the lecture material and see how a topic is going to be developed. It will also give you the necessary background to participate meaningfully in class discussions.

3. Establish a schedule of study that includes some time set-aside for review. Ex., as we discuss muscle function, review the anatomical organization of muscle tissue.

4. Never cram for a test. You will just get by in the course, and you will not to learn & understand the subject. Remember, you will only get out of the course what you put in to it.

5. Don't be embarrassed or afraid to admit that you are having difficulty. We should all work together to see that everyone learns. Please contact me, because I want this class to be a successful learning experience for everyone. I have office hours because I want to help you succeed; use me!

6. Read the laboratory exercise before coming to lab. This will allow you to concentrate on the substance of the exercise rather than on the procedures.

7. Do the lab work thoroughly and carefully. Don't just say to yourself, "Yeah, I understand it." Quiz yourself. Ask me or a friend to quiz you informally. That is one of the surest ways to determine if you really understand the material.

8. Learn the structures on the models and slides. Simply writing down the number of the structure for each model may help you locate it when studying, but it won't help you on a lab practical. How do you know if you have learned the material? Get the model or slide without any labels or keys and see if you can name all of the structures for the organ system being studied. If you can, great! If not, you don't know the material well enough to perform well on the practical.

9. Approach new terminology you will encounter by thinking about its derivation. You will discover that most of the terms can be understood with knowledge of relatively few Latin and Greek roots. Word roots, prefixes, suffixes, and combining forms and word roots are listed on the last two pages of the textbook. Avoid rote memorization.

10. Ask questions. This is the best way you have for clearing up confusing points and misunderstandings and to go beyond what we talked about in lecture. Learning to ask questions is the first skill that a scientist has to develop in order to find meaningful answers.

11. Have fun! Nothing works better than enjoying what you are doing. Please let me know at any time what I can do to improve the course.
6. Academic Honesty
(from the 2009-2010 MSJ Undergraduate Catalog)

The final responsibility for fulfilling the requirements of a course syllabus in each class, for meeting all program/degree requirements, and for complying with College regulations and procedures rests with the student.

Academic Honesty

The ultimate goal of the learning experience is that one develops his or her own synthesis of knowledge, based on seriously reading and understanding the work of others; the work of others must therefore be meticulously documented as the basis for one’s own; plagiarism, the dishonest use of others’ work, invalidates the meaning of the academic experience.

Students and faculty will avoid allowing or actively participating in acts that violate the community trust (examples: faculty will investigate suspicious documentation; students will refuse requests to cooperate with cheating and plagiarism). So that we may all agree about what behaviors honesty includes, the following contexts are provided as examples.

1. Honesty on examinations, tests and quizzes.
2. Honesty by actions: The student who values integrity will not provide work or materials for another student to copy and submit as his or her own.
3. Honesty on written, oral, computer, artistic, and scientific assignments.
4. Honesty in the use of computer databases and files: The student who values integrity will generate his or her own material and will refuse to copy other students’ disk files, databases and other electronically stored material;

Students have a responsibility to comprehend and practice the honest academic behaviors that are stated and implied in this document without exception and to consult an appropriate professional resource in any case about which they are uncertain or unclear.

When an instructor has reason to believe that the academic honesty policy has been violated, the following consequences are possible:

- receiving a failing grade for the assignment; receiving a failing grade for the course or, the student be dismissed from the College.

For more information see: http://www.msj.edu/view/academics/catalogs--class-schedules/undergraduate-catalog/academic-policies/student-responsibility.aspx