Question: What did one DNA say to the other DNA?
   Answer: Do these genes make me look fat?

BIOL F111X (4 credits)
University of Alaska Fairbanks
Summer 2013
Dr Jill Russell
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Part I: Syllabus

1. Description of Human Anatomy & Physiology I

Human A & P I is an integrated view of human structure and function for students in pre-professional allied health programs, biology, physical education, psychology and art. This course covers cells, tissues and organs, skeletal and muscle systems, the nervous system, and integumentary system. The course discusses biological concepts and principles as a foundation for understanding normal developmental changes as well as pathological alterations. Lecture, lab, and animal dissections required. This course manual is modeled after Dr. Abel Bult-Ito’s A & P manual.

Lecture Instructor
Jill Russell, Ph.D.
Office: To be announced
E-mail: jrussell4@alaska.edu
Office hours: M/T/W/R 9am – 10am, after lecture or by appointment

Lab Instructors
Ms. Sophie Chowdhury
Office: To be announced
E-mail: Office hours: By appointment

Course Meeting Times and Locations
Lectures: T/W/R/F week one and then M/T/W/R for the remaining weeks
10:00am- 11:50am
Lecture room: ____________________________
Lab Sections: M/W 12:30pm-4:10pm
T/R 12:30pm-4:10pm
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 Blackboard 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 111 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 111 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 111 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 a variety of approaches to understand these concepts and 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 & lab**
No laptops are allowed in the classroom and lab. No electronics like iPods, music players, and
alike are allowed in the classroom and lab. 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.

Lecture Quizzes: Ten lecture quizzes will be given (see section 3 for dates). Each lecture quiz will cover terms from the list of root words that is posted on Blackboard. Since none of us are on top of our game every time we come to class, I will drop your lowest quiz grade.

Class participation
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. It is not my responsibility to notice who drags in late. 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. Attendance in lab is mandatory. Students who leave early from lecture or lab will be counted as absent and will receive no grade for work completed or quizzes taken that day.
Lab Policies

Objectives
The laboratory component of BIOL 111 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 schedule 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. Quizzes will be over topics just covered in lab. Students must have lab worksheets completed in order to take the quiz. We will drop your lowest quiz grade.

Laboratory Practicals
Three laboratory practicals will be given (see section 3). These will cover information from the previous 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 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 the 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 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.do. 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.

**Information on Dropping Classes**
You will find the drop dates for the current semester at: http://www.uaf.edu/summer/information/calendars/.
Part II: General Course Information
3. Tentative Lecture & Lab Schedule, Assignments & Exams

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Lecture Topic</th>
<th>Reading</th>
<th>Quiz</th>
<th>Lab Exercises</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 28</td>
<td>Tue</td>
<td>Introduction, Basic Concepts</td>
<td>Chapter 1</td>
<td></td>
<td>Exercises 1 &amp; 2 Intro &amp; Body Organization</td>
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<tr>
<td>May 29</td>
<td>Wed</td>
<td>Chemistry of Life</td>
<td>Chapter 2</td>
<td>A-B</td>
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<tr>
<td>May 30</td>
<td>Thur</td>
<td>Chemistry Of Life</td>
<td>Chapter 2</td>
<td></td>
<td>Exercises 3 &amp; 4 Microscopy &amp; Cells</td>
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<tr>
<td>Jun 3</td>
<td>Mon</td>
<td>Cells</td>
<td>Chapter 3</td>
<td>C-D</td>
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<tr>
<td>June 4</td>
<td>Tue</td>
<td>Cells</td>
<td>Chapter 4</td>
<td>E-F</td>
<td>Exercises 3 &amp; 4 Microscopy &amp; Cells</td>
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<tr>
<td>June 5</td>
<td>Wed</td>
<td>Exam 1 - Tissues</td>
<td>Chapter 5</td>
<td></td>
<td>Cell Membrane Functions</td>
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<tr>
<td>June 6</td>
<td>Thur</td>
<td>Tissues</td>
<td>Chapter 5</td>
<td>G-H</td>
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<td>Jun 10</td>
<td>Mon</td>
<td>Integumentary System</td>
<td>Chapter 6</td>
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<td>Jun 11</td>
<td>Tue</td>
<td>Bone Tissue</td>
<td>Chapter 7</td>
<td>I-K</td>
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<td>Jun 12</td>
<td>Wed</td>
<td>Exam 2 - Axial Skeleton</td>
<td>Chapter 8</td>
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<td>Jun 13</td>
<td>Thur</td>
<td>Axial &amp; Appendicular</td>
<td>Chapter 8</td>
<td>L-M</td>
<td>Exercises 9, 10 and 11 Axial &amp; Appendicular</td>
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<td>Jun 17</td>
<td>Mon</td>
<td>Appendicular &amp; Articulations</td>
<td>Chapter 8 &amp; 9</td>
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<td>Jun 18</td>
<td>Tue</td>
<td>Muscle Tissue</td>
<td>Chapter 11</td>
<td>N-O</td>
<td>Exercises 9, 10, 11, and 12 Bones &amp; Articulations</td>
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<td>Jun 19</td>
<td>Wed</td>
<td>Exam 3 - Muscular System</td>
<td>Chapter 10</td>
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<td>Jun 20</td>
<td>Thur</td>
<td>Muscular System</td>
<td>Chapter 10</td>
<td>P</td>
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<td>Jun 24</td>
<td>Mon</td>
<td>Nervous Tissue</td>
<td>Chapter 12</td>
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<td>Jun 25</td>
<td>Tue</td>
<td>Spinal Cord &amp; Nerves</td>
<td>Chapter 13</td>
<td>R-S</td>
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<td>Jun 26</td>
<td>Wed</td>
<td>Exam 4 - Brain &amp; Cranial N.</td>
<td>Chapter 14</td>
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<td>Jun 27</td>
<td>Thur</td>
<td>Brain and Cranial Nerves</td>
<td>Chapter 14</td>
<td>T-Z</td>
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<td>July 1</td>
<td>Mon</td>
<td>Autonomic Nervous System</td>
<td>Chapter 15</td>
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<td>July 2</td>
<td>Tue</td>
<td>Senses</td>
<td>Chapter 16</td>
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<td>Wed</td>
<td>Exam 5</td>
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5. How to Get the Most Out of the Course

1. **Thirty-six hours each week is the minimum amount of time you will have to commit to this course in order to do well.** Eight hrs in lectures, 24 hrs study related to lecture content, 4 hrs in lab, & 12 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

UAF students are subject to the Student Code of Conduct. In accordance with board of regents’ policy 09.02.01, UAF will maintain an academic environment in which freedom to teach, conduct research, learn and administer the university is protected. Students will benefit from this environment by accepting responsibility for their role in the academic community. The principles of the student code are designed to encourage communication, foster academic integrity and defend freedoms of inquiry, discussion and expression across the university community.

UAF requires students to conduct themselves honestly and responsibly, and to respect the rights of others. Conduct that unreasonably interferes with the learning environment or violates the rights of others is prohibited. Students and student organizations are responsible for ensuring that they and their guests comply with the code while on property owned or controlled by the university or at activities authorized by the university.

The university may initiate disciplinary action and impose disciplinary sanctions against any student or student organization found responsible for committing, attempting to commit or intentionally assisting in the commission of any of the following prohibited forms of conduct:

- cheating, plagiarism or other forms of academic dishonesty
- forgery, falsification, alteration or misuse of documents, funds or property
- damage or destruction of property
- theft of property or services
- harassment
- endangerment, assault or infliction of physical harm
- disruptive or obstructive actions
- misuse of firearms, explosives, weapons, dangerous devices or dangerous chemicals
- failure to comply with university directives
- misuse of alcohol or other intoxicants or drugs
- violation of published university policies, regulations, rules or procedures
- any other actions that result in unreasonable interference with the learning environment or the rights of others.

This list is not intended to define prohibited conduct in exhaustive terms, but rather offers examples as guidelines for acceptable and unacceptable behavior.
Honesty is a primary responsibility of you and every other UAF student. The following are common guidelines regarding academic integrity:

1. Students will not collaborate on any quizzes, in-class exams, or take-home exams that contribute to their grade in a course, unless the course instructor grants permission. Only those materials permitted by the instructor may be used to assist in quizzes and examinations.
2. Students will not represent the work of others as their own. A student will attribute the source of information not original with himself or herself (direct quotes or paraphrases) in compositions, theses, and other reports.
3. No work submitted for one course may be submitted for credit in another course without the explicit approval of both instructors.

Alleged violations of the Code of Conduct will be reviewed in accordance with procedures specified in regents' policy, university regulations and UAF rules and procedures. For additional information and details about the Student Code of Conduct, contact the dean of student affairs, visit www.alaska.edu/bor/ or refer to the student handbook that is printed in the back of the class schedule for each semester. Students are encouraged to review the entire code.

9. Student Behavioral Standards (from the 2007-2008 UAF Catalog)

Education at the university is conceived as training for citizenship as well as for personal self-improvement and development. Generally, UAF behavioral regulations are designed to help you work efficiently in courses and live responsibly in the campus environment. They are not designed to ignore your individuality but rather to encourage you to exercise self-discipline and accept your social responsibility. These regulations, in most instances, were developed jointly by staff and students. You should become familiar with campus policies and regulations as published in the student handbook.