***Anatomy and Physiology (Biology 212; 2019)***

**Instructor: Ted Wilson PhD**Office: 232 Pasteur Hall Phone: 507-457-2485 Email: twilson@winona.edu
Website: [http://course1.winona.edu/twilson](http://course1.winona.edu/ewilson)

**Textbook:** Anatomy and Physiology, Saladin 6th **or 7thth Edition**, McGraw Hill Inc.

**Course Description:** This is the second half of a year-long sequence of anatomy and physiology designed for health sciences bound students. This course emphasizes the physiology of organ systems and how the systems interact with each other in health, disease and ultimately death. Specifically we will examines the function and interactions of the circulatory, respiratory, renal, endocrine, digestive and reproductive systems. A lot of what we do in this second semester involves using information learned in the first semester, hence A and P 211 is a prerequisite and we will not review things covered in 211.

**USP Natural Science Requirements:** This course provides students with the opportunity to practice scientific inquiry through hands-on investigations and to analyze and report the results of those investigations and satisfies 4 credits of USP Natural Science. This course satisfies the following outcomes:

a.       understand how scientists approach and solve problems in the natural sciences;

b.       apply those methods to solve problems that arise in the natural sciences;

c.        use inductive reasoning, mathematics, or statistics to solve problems in natural science;

d.       engage in independent and collaborative learning;

e.        identify, find, and use the tools of information science as it relates to natural science;

f.         critically evaluate both source and content of scientific information;

g.       recognize and correct scientific misconceptions.

***Additionally this course will provide students the opportunity to practice scientific inquiry through hands-on investigations and to analyze and report the results of those investigations.***

Laboratory activities include some active physiology, human cadaver work, and may require the handling/collection of small blood/urine samples from yourself/others. We will focus on the interdependence between form and function, and the relationships among these organ systems. This knowledge will provide much of the foundation for understanding both normal and abnormal changes in the structure and function of the human body. The laboratory activities are timed to roughly correlate with the materials taught in lecture. Laboratory activities include physiological experiments, dissection of cats and human cadavers, and computer-based simulation programs. It is the responsibility of the student to bring an updated copy of each week’s Lab Manual to the lab in Stark! You will not be permitted to leave lab to print a manual and you may be docked 5 pts for failure to bring the lab with you.

Grading will be based on numerical scores at the end of the semester. The curve is set for you and it is up to you to apply yourself towards the grade you desire. There is no significant extra credit offered in this course and no exam scores are dropped, so take every exam ***VERY*** seriously! All exams will be closed book. Cheating on any test or quiz results in an “F” for the course, please do not force the instructor to enforce this policy. If you observe cheating taking place, please let the instructor know immediately.

**Final Grades and their percentages: A=+90% B=+80% C=+70% D=+60% F=under 60%**

Lecture Exams: 3X50pts; Final Exam 1X75pts; Lecture quizzes (15-20 points); Lab Exams: 3X50pts; Lab Write-up for Urinary Tract/Digestive Physiology: 20 pts (5pts extra credit possible for exceptional work); Pre-lab quizzes 5 pts/each. Pre-lab quizzes will cover material in the lab for each week, you will need to read the lab material closely to prepare for these quizzes. No make-ups will be given for these 5 pts lab quizzes.

**Attendance and Participation:** Attendance will not be recorded in lectures, it is simply your responsibility to know the material covered and poor attendance invariably means failing test scores. When possible, lecture outlines will be provided for you at my website to assist your note taking. Your active participation in lectures is GREATLY encouraged and participation will greatly improve your course performance. If you are close to the next higher grade (on the border-line and within 0.5%) at the end of the semester, the instructor reserves the right to consider bumping your grade up. The most important thing will be whether you participated and made positive contributions to lecture and the lab. Did you ask questions and answer questions. Your participation will improve the outcome for all students in the course.

**Helpful Resources**: A Photographic Atlas for Anatomy and Physiology 5th Edition by Graff and Crawley. Morton Publishing, Engelwood, Colorado. 2003 (buy this online at Amazon.com or the WSU bookstore may have a few copies). Suggested: a good medical dictionary of your choice will be helpful

**Studying Habits and Grades Received:** Most students find that they need to spend at least two hours of quality time (no T.V., radio, distractions) studying out of class for every hour of class/lab time to earn a grade of “B” or better. Some students need to spend much more time, and occasionally students get by with less. What is most important is that you find a way to succeed in learning the material and showing that you have learned the materials. The best way to learn is unfortunately variable from student to student, try different methods, and try to just ‘think" about what you have learned when you have the chance. While strict memorization can sometimes work ok in AP 211, it rarely works in AP 212. One of the best study habits of successful students is to create a study group that works together to learn the material, the professor is willing to help you form a group.

Best Suggestion for a Great Grade: All lecture notes are available online ahead of time. Print them and study them BEFORE you come to class. **USE OF LAPTOPS during lecture is prohibited.** Yes they work for a small minority of students, but most folks just plain learn more easily when they don’t have the distraction of other people' computer. **The biggest reason they are prohibited in lecture is that the people that sit behind you in lecture are distracted and prevented from learning.**

Students will also benefit by regularly attending and participating in the **Supplemental Instruction** sessions. Materials covered in these sessions is intended to support what has been learned in the lecture. The hours for these supplemental instruction sessions will be determined in the first week of class.

**Students with Special Needs:** Some students have disabilities that prevent them from succeeding in a course with traditional learning/testing/evaluation methods. If you are a person who has a documented need for special academic accommodations, please contact both Dr. Ted Wilson and possibly one of the following: WSU Disability Resource Center at 136 Howell Hall (Phone: 457-2391 voice; 457-2409 TTY) or Student Counseling Center 110 Gildmeister Hall (Phone: 457-5330). Making arrangements for non-traditional needs is your responsibility and must be coordinated with the instructor. **A and P Tutors are available** at Academic Assistance Center: 3rd Floor, Room 301 Library. Winona State University’s Writing Center. Located in Minné 348 and staffed primarily by graduate assistants in English, the Writing Center offers WSU students free, individualized instruction in all aspects of writing.

**Supplemental Instruction:** There will be Supplemental Instruction sessions that are open to all AP 212 students.

 Attendance of these sessions is free (paid for as part of a Learning for the 21st Century Grant), voluntary and intended to help students review the lecture material and to work on developing study skills that are needed for success in AP 212. When a student does not understand lecture or lab material this is a good place to get help. Students are also advised to see the instructor directly for help.

**Proper Human Cadaver Use Required to take this course: All students must watch this required Cadaver Use Video and read/complete/sign the State of MN Cadaver Exchange agreement and abide by its requirements.**

**http://mediamill.cla.umn.edu/mediamill/embedqt/22354**

No cell phones and/or cameras are allowed in the laboratory. Videotaping or photographing the human anatomical material is strictly prohibited without the prior consent of the University of Minnesota’s Anatomy Bequest Program Proposal Review Committee, including but not limited to any images which will published or distributed.

Students shall track all human anatomical material by keeping the donor’s acquisition number tag with the donor at all times.  If the tag becomes disassociated from the donor, the course director should be contacted immediately.  All tissue removed from the donor during dissection must be retained, identified with the donor’s acquisition number and tracked.  Bins will be provided for appropriate storage of any removed tissues, and should stay with the donor at all times.

Anatomical material must not be removed from the dissecting laboratory.

Unauthorized access to the lab is not permitted – i.e. dissection and/or study of the donors without the permission of the instructor is forbidden.  Additionally, individuals not enrolled in the course are not permitted to view the donors without permission by the instructor and fulfillment of all stated requirements.

Disrespectful language, improper handling, or any other behavior deemed inappropriate in regards to the donor or dissection process will not be allowed or tolerated.  Both conversational and written language relating to the donor and donor dissection by human anatomy students lab must be respectful and discrete. Any information about the donor including the donor’s demographical, social or medical history is confidential and students are not allowed to disclose this information.

The use of the Internet in general, and social media sites in particular, including, but not limited to,  Facebook,  MySpace, Twitter, etc., by students as a venue for discussing any aspect of the donor or donor dissection is strictly prohibited.

Proper attire must be worn for all anatomical study.  This includes long pants or floor length skirt, full coverage t-shirts (short or long sleeve), and closed-toed shoes.

The laboratory must remain clean.  Laboratory tables and counters should be thoroughly washed after each lab, and the floors should be kept free of spills and wastes

***Anatomy and Physiology 212: Lecture and Laboratory Schedule***

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| Week | Monday Wednesday Friday | **Laboratory Schedule** |
| 1/14 | Endocrine System | **Lab 1 Endocrine anatomy and function** |
|  | 17 17 17 (5pt pre-lab quiz)If you did not carefully read about the autonomic nervous system in CH15 last semester, be sure to do so before reading CH 17. This lecture link may help with the review. | ***Please be sure to down load the Endocrine Lab BEFORE coming to lab next week.*** |
| 1/21 | Endocrine System and Blood | ***No Lab due to Monday Holiday*** |
|  | **No Lecture/lab MLK Jan 21st** 17 18**If you have Monday lab make it up on Tue, Wed or Thur as open lab format*****FRIDAY: Endocrine assignment due in class*** | ***Don’t forget open lab.*** |
| 1/28 | Blood and the anatomy of the heart |  |
|  | 18 18 19**MONDAY 20 pt quiz CH17 at end of lecture** | **Lab 2 Blood: collection and clinical analysis** |
| 2/4 | Cardiac function |  |
|  | **Wednesday Test #1: CH 17 and 18** 19 19 | **Lab 3 Anatomy of Cardiovascular System**  |
| 2/14 | Circulation |  |
|  | 19 19 19 | **Lab Exam #1: Thursday Endocrine, Blood, Cardiac Anatomy Labs**  |
| 2/18 | Circulation and Respiratory System**Wednesday ECG Assignment Due (10 pts)***Friday 7am: ECG Help session in lecture room* | **Lab 4 Cardiac Physiology** |
|  | 19 20 20 |  |
| 2/25 | Respiratory System | **Lab 5 Respiratory Anatomy.****Examine fresh porcine tissues** |
|  | 20 20 **Labs Continue on University Assessment Day****Wednesday: 20 pt Quiz at end of lecture** |  |
| 3/ 4 | Respiratory System**WEDNESDAY**  **Test#2: CH 19 and 20**   | **Lab 6 Spirometry and Respiratory Physiology** |
|  |   22 Test 22  |  |
| ***3/11*** | ***SPRING BREAK*** | **Spring Break** |
| 3/18 | Respiratory System |  |
|  |  22 22 22Wednesday 7am: **Spirometry Help Session in lecture room**  **10 pt Spirometry Assignment Due Friday 5pm**   | **Lab 7 Exercise Physiology (Monday pre-lab quiz in lecture)** |
| 3/25 | Urinary System and regulation of water, salts, pH | **Lab Exam#2: Thursday Cardiac Physiology/ECG, Respiratory Anatomy, Spirometry, and Exercise Physiology** |
|  | **Monday 20 pt Quiz CH22 at end of class**22 22 23 |  |
| 4/1 | Electrolyte Regulation and Water Balance**10pt Kidney Assignment due Friday 5pm**  | **Lab 8 Urinary anatomy and urinalysis. Examine fresh porcine kidney tissues**  |
|  | 23 23 23 |  |
| 4/8 | Kidney and Lymphatics and Immune SystemCH 24 CH21 **10pt Kidney Assignment due Wednesday 5pm** | **Lab 9 Anatomy and physiology of digestion** |
| 4/15 | Monday CH21**Lab Tuesday and Wednesday only-no regular lab time**No Class Friday April 19th  | **Lab 10 Nutritional Physiology: Glycemic Response Lab**  |
| 4/22 | Digestion**Monday** **Test #3** **CH 21 (parts), 22, 23, and 24** 25 25 25 | **Lab 11 Anatomy and physiology of reproduction** |
| 4/29 | Metabolism 26 26 Semester Review | **Lab Exam #3 *THURSDAY******Urinary, Digestive, Reproductive and Nutrition labs*** |
|  | **Final Exam: 75 points: Unit 25 pts : CH 25 and 26** **Comprehensive 50 pts: All material covered during the semester**  |  |