

BIOL 242: Human Anatomy and Physiology II

Fall 2013 Syllabus

Instructor: Joel Dahms
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Office: IB 2426C
Office hours: By appointment

Class meeting times:

Mon 6:00- 9:20 in AS1521 (lecture)

Wed 6:00- 9:20 in AS1615 (lab)

Course Website: <http://facweb.northseattle.edu/jdahms/biol241/242.htm>

Required texts

- *Human Anatomy and Physiology, Ninth Edition*, Elaine N. Marieb & Katja Hoehn, Pearson Benjamin Cummings, 2012. ISBN (for bundle): 9780321743268
- *Human Anatomy & Physiology Laboratory Manual, Main Version, Ninth Edition, Update*. Elaine N. Marieb & Susan J. Mitchell, Pearson Benjamin Cummings, 2011. ISBN: 9780321765604

Optional Texts

- *An Atlas of Histology*. Shu-Xin Zhang, Springer, 1999.
- *Brief Atlas of the Human Body*, Second Ed., Matt Hutchinson et al., Pearson Benjamin Cummings, 2007.
- *Study Guide for Human Anatomy and Physiology*, Eighth Ed., Elaine N. Marieb & Katja Hoehn, Pearson Benjamin Cummings, 2009.
- *The Anatomy Coloring Book*, Third Ed., Wynn Kapit and Lawrence M. Elson, Benjamin Cummings, 2001.
- *The Physiology Coloring Book*, Wynn Kapit, Robert I. Macey, and Lawrence Meisami, Second Ed., Benjamin Cummings, 2000.

Grading

| | |
|--------------------|-------------------|
| Exams (5) | 400 points |
| Lab Practicals (2) | 200 points |
| Lab Exercises | 150 points |
| Assignments | 50 points |
| TOTAL | 800 points |

Grades will be assigned as follows:

| <u>Percent</u> | <u>Grade</u> | <u>Decimal Grade</u> | <u>Percent</u> | <u>Grade</u> | <u>Decimal Grade</u> |
|----------------|--------------|----------------------|----------------|--------------|----------------------|
| 95 - 100% | A | 3.9 - 4.0 | 65 - 69 | C | 1.9 - 2.1 |
| 90 - 95 | A- | 3.5 - 3.8 | 60 - 64 | C- | 1.5 - 1.8 |
| 85 - 89 | B+ | 3.2 - 3.4 | 57 - 59 | D+ | 1.2 - 1.4 |
| 80 - 84 | B | 2.9 - 3.1 | 53 - 56 | D | 0.9 - 1.1 |
| 75 - 79 | B- | 2.5 - 2.8 | 50 - 52 | D- | 0.7 - 0.8 |
| 70 - 74 | C+ | 2.2 - 2.4 | < 50% | E | 0.0 |

Note: a 4.0 grade requires a 96%

Commitment

Anatomy and Physiology is a course that requires a strong commitment in order to succeed. It is not an easy course: the subject-matter is difficult and learning the terminology can be like learning a foreign language. To successfully complete this course you must commit to attend all lectures and laboratory sessions and plan on spending at least an additional 25 hours per week of studying time. This will include not only reading the text but also several hours per week studying laboratory materials (e.g., microscope slides, models) for practical quizzes. Additional resources such as computerized review programs, audiovisual materials and student tutors are available during the **open laboratory** sessions (see below).

Attendance

Students should attend every class session, *especially* since the class only meets twice a week; missing even one class session can leave you way behind. If you miss a class session, it is *your responsibility* to obtain the lecture notes, handouts, assignments or other materials distributed in class. If you must miss class due to illness or other unexpected circumstances, you should notify the instructor as soon as possible to make special arrangements.

Lectures

Due to the amount of information covered in the course, lectures cannot cover all the relevant material. Students will be responsible for all the material in the chapters covered unless otherwise noted. However, in order to help students determine what to focus on, **objectives** for each unit are available on the course website.

Objectives

There will be five units in BIOL 242, each with an exam at the end. The objectives for each unit are available on the course website. The objectives are designed to give students a list of learning outcomes for each unit, and to serve as a study guide for the exams and quizzes. They cover *most* of the things you need to know; however, they are not exhaustive.

Labs

For BIOL 242, most laboratory exercises must be completed in the laboratory. After completion of each lab exercise you are expected to answer the questions found in the back of the lab book titled "Review Sheet" and turn them in during class the following week. **NOTE: you must turn in the actual pages torn out of a laboratory manual; no photocopies will be accepted.** If you purchase the electronic version of the lab manual, you may print out your lab reports and turn them in. In BIOL 242, most labs will also have additional handouts that require you to draw microscope slides and answer a few related questions. These will be due the week following the lab, along with the Review Sheet. Students who miss a laboratory exercise may try to make arrangements to complete the activities during open lab time in order to get credit for that exercise, however this option is not available for "wet" labs such as dissections. Students who report data obtained from another student will receive the grade of 0 for that exercise.

Open laboratory

There will be specified times each week that the laboratory room will be open to students and staffed by student tutors who have taken this class before. During these times, you may be able to make up missed labs (except “wet” labs), study lab materials for upcoming quizzes and exams, and have your questions answered by the student tutors. The schedule of open lab times should be available during the first week of the quarter.

Exams

There will be five exams: the first four will be worth 75 points each and the fifth exam will be worth 100 points. They will be composed of multiple-choice questions, matching, short answer, fill-in-the-blank, and short essay questions and may also include diagrams for you to label. A new, unwrinkled Scantron form and a #2 pencil will be needed for each of these exams. These are available at the campus bookstore or the coffee shop. It is assumed that each student will do their own work. Cheating is unacceptable and will be referred to the Vice President of Student Affairs for disciplinary action. **NOTE: Exams may not be rescheduled or made-up due to tardiness or absence. Students with extraordinary circumstances should discuss them with the instructor as soon as the situation occurs.**

Lab Practicals

There will be two lab practical tests, one in week 6 and one in week 11, each worth 100 points. These are designed to test your “practical” ability to identify tissues and structures from slides, models, or diagrams. Consult the **Lab Practical Study Guide** (attached) for details on what you are expected to know for each practical.

Assignments

Assignments consisting of in-class group activities or individual homework such as case studies will make up 50 points of your grade. There will 2-4 during the quarter as determined by available time. I will provide more details about these as the quarter progresses.

BIOL 242 Lecture & Lab Schedule – Fall 13

| Week | Date | Lecture Topics - Chapters Covered | Date | Lab Exercises |
|--------------|----------------------------|--|----------------------------|--|
| 1 | Mon 9/23 | Introductions Endocrine System – 16 | Wed 9/25 | Lab Safety & Introduction Lab #27-Endocrine System |
| 2 | Mon 9/30 | Blood – 17 | Wed 10/2 | Lab #29-Blood Blood typing “Who Done It” handout |
| 3 | Mon 10/7 | Cardiovascular: Heart - 18 | Wed 10/9 | Lab #30-Heart Lab #32-Blood Vessels Heart dissection |
| | | ● Exam 1 (Chaps 16, 17) | | |
| 4 | Mon 10/14 | Cardiovascular: Vessels - 19 | Wed 10/16 | Lab #33-Cardiovascular Phys. |
| 5 | Mon 10/21 | Lymphatic System - 20 Immune System - 21 | Wed 10/23 | Lab #35-Lymphatic System |
| | | ● Exam 2 (Chaps 18, 19) | | |
| 6 | Mon 10/28 | Respiratory System - 22 | Wed 10/30 | Lab #36-Respiratory Anatomy Pluck demo |
| | | | | ● Practical 1 |
| 7 | Mon 11/4 | Digestive System – 23 | Wed 11/6 | Lab #38-Digestive Anatomy |
| | | ● Exam 3 (Chaps 20-22) | | |
| 8 | Mon 11/11 | No class – Veterans’ Day | Wed 11/13 | Exercise 8 – Digestive Physiology (Bring your PhysioEx CD) Lab #40-Urinary Tract Anatomy Kidney dissection |
| 9 | Mon 11/18 | Nutrition, Metabolism, & Body Temp – 24 Urinary System – 25 | Wed 11/20 | Lab #41-Uranalysis |
| 10 | Mon 11/25 | Fluid, Electrolyte, & pH Balance – 26 | Wed 11/27 | Lab #42-Reprod Anatomy Lab #43-Reproductive Physiology |
| | | ● Exam 4 (Chaps 23, 24) | | |
| 11 | Mon 12/2 | Reproductive System – 27 Development - 28 | Wed 12/4 | Lab#44 – Embryonic Development |
| | | | | ● Practical 2 |
| Final | Mon 12/9 | ● Exam 5 (Chaps 25-28) | | |

Lab Practical Study Guide

Fall 2013

Practicals will be administered at the beginning of class and will test your knowledge of both gross anatomy and microscopic anatomy (histology). Each of the two practical tests will be worth 100 points and will include identification of microscope slides, models, and figures, as well as additional questions from the lab assignments. You will be given class time to learn all of the information listed below prior to each practical, however you may also wish to make use of the open lab times during the quarter to review the material for additional preparation. **This guide is subject to change throughout the quarter** so be sure to get any updates from me during laboratory as to exactly what is to be covered.

For Practical #1 (Wednesday, October 30th) you should be able to do the following:

Endocrine System

- Identify on a slide the following tissues: thyroid, adrenal (identify zones of cortex, and medulla), pituitary (identify anterior and posterior and its constituents), pancreas (identify Islets of Langerhans)
- Identify thyroid, adrenals, spleen and pancreas on a model or figure.

Blood

- Look at a slide and tell me that it is blood, whether it is normal or abnormal. Know how to identify some specific abnormalities (sickle cell anemia, leukemia, mononucleosis).
- Identify the following cells microscopically: red blood cell, lymphocyte, neutrophil, macrophage.
- Correctly identify blood type using the testing we did in class (A, B, and Rh).

Heart

- Identify the following structures: the right and left atria, right and left ventricles, semilunar valves, tricuspid and bicuspid valves, chordae tendineae, papillary muscles, pulmonary arteries and veins, inferior and superior vena cava, right brachiocephalic trunk, left carotid and subclavian arteries, and aorta (ascending and descending).

Arteries and Veins

- Identify the following arteries/veins on a model: inferior and superior vena cava, left and right pulmonary arteries and veins, thoracic and abdominal aorta, common carotid, subclavian, brachiocephalic, coronary, celiac, renal, axillary, brachial, radial, ulnar, mesenteric, iliac, peroneal, femoral, popliteal, tibial, jugular, celiac, splenic, gastric, hepatic and saphenous.
- Distinguish an artery from a vein on a slide.

Lymphatic/Immune

- Identify the following tissues microscopically: lymph node, Peyer's patch, tonsil, spleen, thymus.

For practical test #2 (Wednesday, December 4th) you should be able to do the following:

Respiratory

- Identify lung tissue microscopically and determine whether it is normal or abnormal. Identify the trachea.
- Identify the following structures on a model: trachea, larynx, bronchi, bronchioles, nasal cavity, nasal conchae, pharynx, lungs. Be able to calculate IRV, ERV, TV, and VC when given the proper information.

Digestive

- Identify the following tissues microscopically: esophagus, stomach (identify region), small intestine (identify section), liver, pancreas, and large intestine. Be able to identify the following structures on a model or diagram: esophagus, stomach, small intestine (parts), large intestine (parts), pancreas, liver, gall bladder, salivary glands.

Urinary

- Identify the following tissues microscopically: kidney, urinary bladder, ureter/urethra. Be able to identify a glomerulus microscopically.
- Identify the following structures on a model: loop of Henle, distal/proximal convoluted tubules, Bowman's capsule, glomerulus, afferent/efferent arteriole, renal pyramids, renal cortex/medulla, ureter, bladder.
- Identify normal ranges for the following urinary parameters: pH, glucose, blood, specific gravity, ketones, protein. Be able to suggest possible reasons for abnormal parameters.

Reproductive

- Identify the following tissues microscopically: testes (seminiferous tubules), epididymis, ovary (including the stages), sperm, mammary gland, prostate gland. Be able to identify stages of a follicle within an ovary.
- Identify the following structures on a model or figure: testes, epididymis, ejaculatory duct, vas deferens, prostate gland, bladder, urethra, ovary, uterine tube, uterus, cervix, clitoris, vagina, bladder, urethra