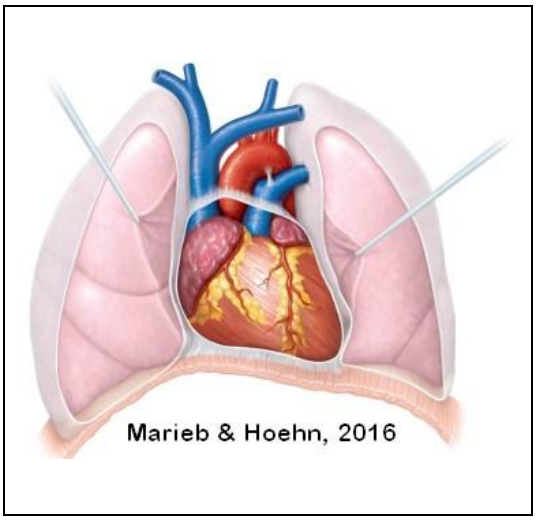
Syllabus for Biology 242: Human Anatomy & Physiology II

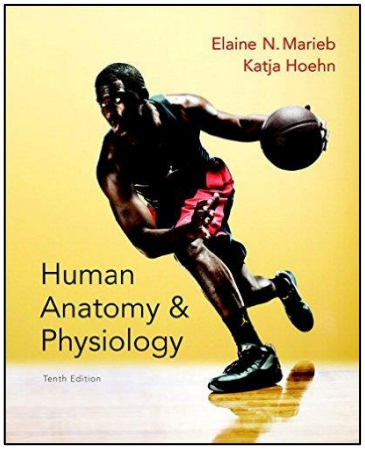


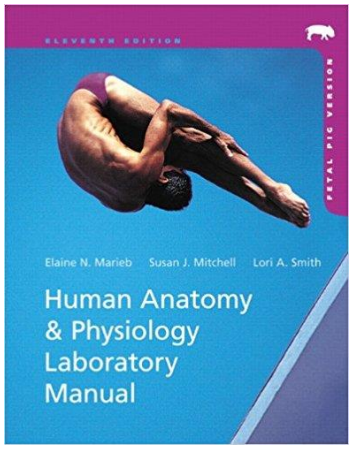
Overview

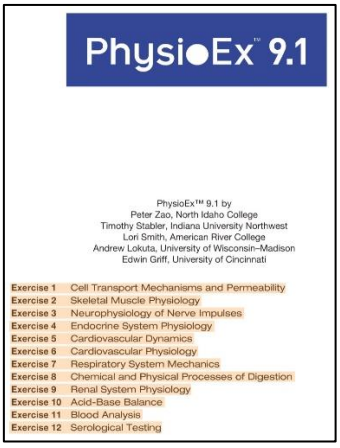
BBIO 242 is the second half of a two-quarter series in human anatomy and physiology. While BBIO 241 covered the integumentary, skeletal, muscular, and nervous/sensory systems, BBIO 242 focuses on the endocrine, reproductive, circulatory, respiratory, digestive, and urinary systems. BBIO 241 and 242 are designed for pre-nursing students and will include clinically relevant examples when possible.

Basic requirements

- Prerequisite: Successful completion of BBIO 241.
- Lectures: 8:45 to 11:15 on Tuesdays and Thursdays in Room 031 of building UW1.
- Labs: 11:45-1:45 or 2:15-4:15 on Mondays and Wednesdays in Room 267 of Discovery Hall.
- Textbook: *Human Anatomy & Physiology* (10th edition/2016) by Marieb & Hoehn.
- Lab manual: *Human Anatomy & Physiology Lab Manual*, **FETAL PIG version, 11th edition (2014)** by Marieb, Mitchell, and Smith. You can buy or rent access to a new or used physical or online version. This item and the next one (PhysioEx) can be purchased as a bundle or separately.
- Access to the PhysioEx 9.1 laboratory simulations, which are part of the website MasteringAandP.com. (The course ID for MasteringAandP.com is: CROWTHER2017SUMMER.)
- Consistent access to Canvas, the Internet, and a printer.







Instructor-student communication

- Course website in Canvas: https://canvas.uw.edu/courses/1153086. All important course information will be posted there!
- Messages: Outside of class and office hours, I usually communicate with students via email address crowther@uw.edu. Canvas messages work too.

- "Office" hours:
  - Mondays before lab: 10:30-11:30am, Discovery Hall 267 (knock on the door)
  - Tuesdays after lecture: 11:15-11:45am, UW1 commons
  - Wednesdays after lab: 4:15-5pm, Discovery Hall 267 (knock on the door)
  - Thursdays after lecture: 11:15-11:45am, UW1 commons
  - … and by appointment.

Skills and outcomes

By the end of this course, you should be able to:

- Identify gross and microscopic components of the endocrine, reproductive, circulatory, respiratory, digestive, and urinary systems.
- Provide examples of functional trade-offs: how specializations for performing some functions limit the performance of other functions.
- Explain how basic clinical techniques can detect problems in the endocrine, reproductive, circulatory, respiratory, digestive, and urinary systems.
- Explain how the endocrine, reproductive, circulatory, respiratory, digestive, and urinary systems illustrate the 15 core concepts of physiology[1]: homeostasis, cell membrane, cell-cell communication, interdependence, flow down gradients, energy, structure/function, scientific reasoning, cell theory, physics/chemistry, genes to proteins, levels of organization, mass balance, causality, and evolution.
- Demonstrate understanding of the above in a variety of formats, e.g., class discussions, group worksheets, laboratory practicals, and written quizzes and exams.
- Improve your own learning and studying through the use of metacognition.

Instructor

Lectures and labs will be taught by me, Dr. Greg Crowther. I am fascinated by this material both as a scientist and as a long-distance runner. (My Ph.D. research was on energy metabolism in exercising leg muscles.) In general, the best ways to reach me are via email (crowther@uw.edu) and/or via Canvas messages. Much more information about me – more than you could ever want to know – is available at my faculty website, http://faculty.washington.edu/crowther/, which includes my teaching philosophy (http://faculty.washington.edu/crowther/Teaching/philosophy.shtml) and my collection of A&P songs (http://faculty.washington.edu/crowther/Misc/Songs/).

Schedule

Dates of quizzes, exams, and labs will not change unless the campus closes unexpectedly (e.g., due to bad weather). Other aspects of the schedule may be adjusted as the quarter progresses. Relevant sections of the lab manual (Marieb, Mitchell, and Smith, 2014) and the textbook (Marieb & Hoehn, 2016) are listed for each lab and lecture, respectively. The extent to which these should be considered "reading assignments" will be discussed in class.

[1] Joel Michael, William Cliff, Jenny McFarland, Harold Modell and Ann Wright (2017). *The Core Concepts of Physiology: A New Paradigm for Teaching Physiology.* New York, NY: Springer.

Week	Monday lab (11:45-1:45 or 2:15-4:15, DH-267)	Tuesday lecture (8:45-11:15, UW1-031)	Wednesday lab (11:45-1:45 or 2:15-4:15, DH-267)	Thursday lecture (8:45-11:15, UW1-031)
6/19-6/23	Course introduction, review of BBIO 241	Endocrine system (Ch. 16)	Pig Dissection 3 (Endocrine Organs) + PhysioEx 4 (Endocrine System Physiology)	Endocrine system (Ch. 16)
6/26-6/30	Ex. 27 (Functional Anatomy of the Endocrine Glands) + Ex. 28 (Endocrine Wet Labs and Human Metabolism)	Reproduction (Ch. 27)	Ex. 42/44 (Reproductive Anatomy)	**Quiz**; Reproduction (Ch. 27)
7/3-7/7	Pig Dissections 7-8 (Urogenital Systems)	No lecture! (UW holiday); homework on Blood (Ch. 17)	Ex. 29 (Blood)	**Quiz**; Cardiovascular System: The Heart (Ch. 18)
7/10-7/14	Ex. 30 (Anatomy of the Heart)	Cardiovascular System: Blood Vessels (Ch. 19)	Ex. 31 (Conduction System of the Heart and Electrocardiography)	**Quiz**; Respiratory System (Ch. 22)
7/17-7/21	Review time (no new lab)	**Lab Test (in lab)**	Ex. 33 (Human Cardiovascular Physiology: Blood Pressure and Pulse Determinations)	**Lecture Test**
7/24-7/28	Ex. 36 & Pig Dissection 5 (Respiratory System) + PhysioEx 7 (Respiratory System Mechanics)	Respiratory System (Ch. 22)	Ex. 37 (Respiratory System Physiology)	**Quiz**; Digestive System (Ch. 23-24)
7/31-8/4	Ex. 38 & Pig Dissection 6 (Digestive System)	Digestive System (Ch. 23-24)	Ex. 39 (Digestive System Processes: Chemical and Physical)	**Quiz**; Urinary system (Ch. 25-26)
8/7-8/11	Ex. 41 (Urinalysis and ECF Regulation)	Urinary system (Ch. 25-26)	More Urinary System Physiology	**Student presentations**
8/14-8/18	Review time (no new lab)	**Lab Test (in lab)**	Review time (no new lab)	**Lecture Test**

Diversity and disabilities

UW-Bothell provides a supportive environment for all students, including students with disabilities. If you have a disability that affects your performance in this course, or if you think you might, please contact UW-Bothell's office of Disability Resources for Students (DRS). In particular, if you need special accommodations for taking quizzes and tests, please set those up with DRS as soon as possible. You are also encouraged to talk to me if your performance in the course is being affected by factors other than disabilities – for example, stereotypes regarding gender, ethnicity, age, sexual orientation, etc.

Inclement weather and suspension of classes

Bad weather occasionally forces the campus to close. Updates on bad-weather situations are available via UW-Bothell's home page (www.uwb.edu) and its information line (425-352-3333). You may also sign up for text-message alerts (www.uwb.edu/alert/).

Use of animals in the laboratory

Over hundreds of years, our understanding of animal anatomy and physiology has advanced from the use of animals in dissections and experiments. Likewise, the laboratory component of this course includes such specimens as preserved pigs, sheep testes, and calf hearts. If you have concerns about this, please talk with me as soon as possible.

Assignments and grades

Your overall grade will depend on your performance on several different types of assignments, *approximately* according to the following distribution.

Tests (4 x ~100 points each)	400 points
Quizzes (5 x ~30 points each; lowest 1 dropped)	120 points
Lab worksheets & homework (~22 x ~10 points each)	220 points
Oral presentations	60 points
Approximate total	**800 points**

Intermediate calculations of your grade in Canvas may be misleading. If you are unsure of how you are doing, please ask me.

In general, quizzes and tests cannot be made up after being missed. If you miss a quiz, you will receive a 0 for it. However, your lowest quiz score will be dropped. Do not skip a particular quiz that you are able to complete – save your droppable 0 for an unavoidable absence.

In general, assignments will not be graded on a curve. If an assignment turns out to be unusually hard, I reserve the right to curve the scores upward for that assignment.

Final grades will be based on the percentage of total points earned, according to the chart below.

99% => 4.0	89% => 3.4	79% => 2.4	69% => 1.4
98% => 4.0	88% => 3.3	78% => 2.3	68% => 1.3
97% => 4.0	87% => 3.2	77% => 2.2	67% => 1.2
96% => 4.0	86% => 3.1	76% => 2.1	66% => 1.1
95% => 4.0	85% => 3.0	75% => 2.0	65% => 1.0
94% => 3.9	84% => 2.9	74% => 1.9	64% => 0.9
93% => 3.8	83% => 2.8	73% => 1.8	63% => 0.9
92% => 3.7	82% => 2.7	72% => 1.7	62% => 0.8
91% => 3.6	81% => 2.6	71% => 1.6	61% => 0.8
90% => 3.5	80% => 2.5	70% => 1.5	60% => 0.7

Collaboration, attribution, and academic honesty

For quizzes and exams, working with other students is NOT allowed (unless stated otherwise). For all other assignments, working together IS allowed (unless stated otherwise).

If you use a source other than the instructor or textbook – a website, classmate, library book, etc. – you must cite that source. Examples:

- You worked with a classmate on a homework assignment:
  - *Note: Phil, Jane, and I discussed questions #2, #3, and #4.*
- You quoted the exact words used by another source, **using quotation marks**:
  - *According to Wikipedia, "People with extensive, bilateral hippocampal damage may experience anterograde amnesia—the inability to form and retain new memories." (source: http://en.wikipedia.org/wiki/Hippocampus).*
- You gathered information from another source and put it in your own words:

- *Patients with severe lesions in their hippocampus cannot create new memories (source: http://en.wikipedia.org/wiki/Hippocampus).*

If you have any questions about appropriate attribution, please ask me.

Tips for success

- *Show up for everything*. While it's possible to learn material without coming to class, it's much harder that way! Give yourself the benefit of multiple passes through the material by studying at home AND coming to all lectures and labs.

- *Actively participate in everything.* Do all homework assignments. Take notes in class. Ask questions when you are confused. Ask questions when you are NOT confused but want to know more. Answer questions, even if you have to guess. Don't let your lab partner do all the fun stuff. Take charge of your education!

- *Practice metacognition.* Metacognition refers to students' thinking about how they think. This encompasses "knowing how to learn, being able to monitor their own understanding, being reflective about what they understand and do not understand, and being able to strategize about how to resolve their confusions."[2] We will talk more about this in class.

- *When preparing for tests, mutate my study guide questions.* This is more or less what I do when I write the tests. Ask yourself, "What would I say if he asks the question THIS way? Or what if he asks it THAT way?"

- *Get help when you're starting to struggle, not after weeks of confusion.* Let's solve small problems before they become big problems. Office hours and lab sessions are especially good times to check in with me.

- *Work together.* This can be done both online (via Canvas Discussion posts and Chats) and in person. Form study groups and help each other out! Just be sure that your submitted work reflects your own understanding and includes appropriate citations (see above).

- *Respect each other and me.* Respectful behavior includes: listening carefully when spoken to; giving others the space to think and to ask and answer questions; refraining from harsh or persistent criticism; avoiding language, attire, or movements that are likely to annoy or distract others; restricting conversations to those relevant to the course material; maintaining control over one's emotions; and giving me adequate time to respond to requests.

[2] Kimberly D. Tanner (2012), *CBE Life Sciences Education* **11**: 113-120.