



Biology 2420-71 Human Physiology
Summer 2024
Tuesday and Thursday 6:00-8:00 PM
Sandy, UT campus, Room 201

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Teaching assistants

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Office hours

Class materials

Text: Human Physiology by Stuart Fox 16th ed, optional but a very good reference

Point Solutions license. Use the TurningPoint Registration information in Modules under Course Information to link your subscription to the course.

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Text: Human Physiology by Stuart Fox 16th ed

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Course Description

Principles of human function.

Course Outcomes

The objective of this course is to learn how the human body works. To this end we will cover how the body maintains homeostasis, how it responds to stimuli, and how various diseases disrupt these processes. To reach these expected learning outcomes this course will:

- Describe how cells take in nutrients and generate and store energy
- Describe how cells communicate
- Describe the basics of hormonal control
- Describe how the brain perceives and sends information
- Describe how the senses of sight, hearing, smell and touch work

- Describe how the circulatory system delivers nutrients and oxygen to tissues
- Describe how the respiratory system takes in oxygen and removes carbon dioxide
- Describe how the renal system works to maintain fluid and salt balance

Course prerequisites: A basic understanding of general biology and introductory chemistry is expected. Therefore, the minimum recommended prerequisites are General Biology and General Chemistry I.

Teaching and Learning Methods

We will be meeting in-person on Tuesdays and Thursdays, from 3:30-5:30 PM. **It is strongly recommended that you attend class regularly.** Students that attend in-person and stay for the entire period typically do much better. Lecture topics that will be covered are listed in the syllabus by dates. Prerecorded versions for each lecture will be posted to the Canvas course website on or before the date shown on the course syllabus. Depending on your computer display, all the recorded lectures for each date may not be displayed. Click on the date to see all of the prerecorded lectures for that date. There will be an assigned lecture on each day we meet except on test days. Most of the prerecorded lectures are broken up into 30 to less than 60-minute blocks to make it easier to watch and take breaks if desired. Please be aware that many of the lectures have multiple parts. Be sure to watch all parts. Copies of the lecture slides and study questions for each lecture will be posted on Canvas.

The summer session has fewer contact days than the fall and spring sessions and therefore moves a bit faster. In an effort to help you study for this course, the format will be as follows. On the first day of class, before the lecture, I will go over how the course will be conducted and explain what you need to start doing as of the first day of class. For example, the prerecorded lectures for Biomolecules, Metabolism and Glycolysis, and The TCA Cycle and Oxidative Phosphorylation will be available by the first day we meet. You should watch the prerecorded lectures for those two topics before we meet on the next class day. On the second in-class day, I will go over the main and most important points from those lectures and the study questions. The objective is to give you a chance to hear many of the topics twice, once from the prerecorded lectures before coming to class and a second time live in class. While listening to each prerecorded lecture, you should try to answer some of the study questions. This will help you focus on the material. During in-class time, I will go over all of the study questions so that you can check your answers and get the answer to any questions you missed. The study questions are not graded. They are to help you focus on the material.

This format will be followed for the entire semester. We will always be reviewing the main points and going over the study questions for the previous prerecorded lecture material posted in the syllabus. All discussion/review sessions will be recorded and posted to Canvas. **Students typically do better on tests when they prepare and respond to questions during class time rather than just wait for someone else to give the answer.** Trying to answer a question is a good way to stay engaged. **Many students prefer not to respond in class. Give it a try. Don't worry about not knowing the answer.** That is what the discussion/review session is for. I will often pose additional questions in class. Students that have taken the class say this format helped them focus on the material and reduced their study time.

Class drop (delete) and withdrawal policy: It is your responsibility to be aware of the deadlines associated with dropping or withdrawing from the course and exercise your right to drop or withdraw from the course by those deadlines, if you deem it necessary. The dates included in the syllabus are deemed to be correct however, you need to verify any date to ensure they are correct. Instructors do not have the ability to withdraw or drop students after these deadlines.

Incomplete policy: According to University of Utah regulations, an incomplete grade can only be given if all

three of the following requirements are met: 1. You are passing the class (at least a C), 2. You have finished 80% of the class (the first three midterm exams), 3. Something beyond your control has prevented you from finishing the class, such as serious illness. Only very rarely do students meet these requirements. You can read about the University policy here: <http://registrar.utah.edu/handbook/incomplete.php>. Incomplete grades cannot be used to allow students to take a class a second time without paying tuition. An incomplete grade does not erase the scores from your current exams. It only allows you to take the final exam at a later date.

University Policies

Academic integrity: You are expected to be honest in your academic studies. **Academic dishonesty of any type during the semester will result in a failing grade for the exam or quiz, and may result in a failing grade for the course.** Academic dishonesty includes the use of cheat-sheets, note cards, dictionaries, or books during an exam or quiz. Looking at another student's exam or transmitter during a quiz is cheating. Using a programmable calculator, smart phone, notebook computer, or tablet computer during a quiz or exam also qualifies as cheating. During exams and quizzes, you are only allowed a single non-programmable calculator and a pen. Blank scratch paper, if requested, is also permissible. During quizzes absolute silence must be maintained and your eyes should be on the screen the entire time. All instances of academic dishonesty are recorded in the University database, which is shared by all academic units on campus. If you are caught copying from another student, you will receive a zero for that test.

The Americans with Disabilities Act. The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

University Safety Statement. The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

Addressing Sexual Misconduct. Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Student Mental Health Resources

- *Rates of burnout, anxiety, depression, isolation, and loneliness have noticeably increased during the pandemic. If you need help, reach out for [campus mental health resources](#), including counseling, trainings and other support.*

- Consider participating in a [Mental Health First Aid](#) or other [wellness-themed](#) training provided by our Center for Student Wellness and sharing these opportunities with your peers, teaching assistants and department colleagues

Diverse Student Support. Your success at the University of Utah is important to all of us here! If you feel like you need extra support in academics, overcoming personal difficulties, or finding community, the U is here for you.

Student Support Services (TRIO)

TRIO federal programs are targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities.

Student Support Services (SSS) is a TRIO program for current or incoming undergraduate university students who are seeking their first bachelor's degree and need academic assistance and other services to be successful at the University of Utah.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

Student Support Services (TRIO)

801-581-7188

trio.utah.edu

Room 2075

1901 E. S. Campus Dr.

Salt Lake City, UT 84112

American Indian Students

The AIRC works to increase American Indian student visibility and success on campus by advocating for and providing student centered programs and tools to enhance academic success, cultural events to promote personal well-being, and a supportive “home-away-from-home” space for students to grow and develop leadership skills.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

American Indian Resource Center

801-581-7019

diversity.utah.edu/centers/airc

Fort Douglas Building 622

1925 De Trobriand St.

Salt Lake City, UT 84113

Black Students

Using a pan-African lens, the Black Cultural Center seeks to counteract persistent campus-wide and global anti-blackness. The Black Cultural Center works to holistically enrich, educate, and advocate for students, faculty, and staff through Black centered programming, culturally affirming educational initiatives, and

retention strategies. For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

Black Cultural Center

801-213-1441

diversity.utah.edu/centers/bcc

Fort Douglas Building 603
95 Fort Douglas Blvd.
Salt Lake City, UT 84113

Students with Children

Our mission is to support and coordinate information, program development and services that enhance family resources as well as the availability, affordability and quality of child care for University students, faculty and staff. For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

Center for Childcare & Family Resources

801-585-5897

childcare.utah.edu

408 Union Building
200 S. Central Campus Dr.
Salt Lake City, UT 84112

Students with Disabilities

The Center for Disability Services is dedicated to serving students with disabilities by providing the opportunity for success and equal access at the University of Utah. They also strive to create an inclusive, safe, and respectful environment. For more information about what support they provide and links to other resources, view their website or contact:

Center for Disability Services

801-581-5020

disability.utah.edu

162 Union Building
200 S. Central Campus Dr.
Salt Lake City, UT 84112

Students of Ethnic Descent

The Center for Ethnic Student Affairs offers several programs dedicated to the success of students with varied cultural and ethnic backgrounds. Their mission is to create an inclusive, safe campus community that values the experiences of all students.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

Center for Ethnic Student Affairs

801-581-8151

diversity.utah.edu/centers/cesa/

235 Union Building
200 S. Central Campus Dr.
Salt Lake City, UT 84112

English as a Second/Additional Language (ESL) Students

If you are an English language learner, there are several resources on campus available to help you develop your English writing and language skills. Feel free to contact:

Writing Center

801-587-9122
writingcenter.utah.edu
2701 Marriott Library
295 S 1500 E
Salt Lake City, UT 84112

English Language Institute

801-581-4600
continue.utah.edu/eli
540 Arapeen Dr.
Salt Lake City, UT 84108

Undocumented Students

Immigration is a complex phenomenon with broad impact—those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles that prevent you from engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center.

Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families.

For more information about what support they provide and links to other resources, view their website or contact:

Dream Center

801-213-3697
dream.utah.edu
1120 Annex (Wing B)
1901 E. S. Campus Dr.
Salt Lake City, UT 84112

LGBTQ+ Students

The LGBTQ+ Resource Center acts in accountability with the campus community by identifying the needs of people with a queer range of [a]gender and [a]sexual experiences and responding with university-wide services.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

LGBTQ+ Resource Center

801-587-7973

lgbt.utah.edu (Links to an external site.)

409 Union Building
200 S. Central Campus Dr.
Salt Lake City, UT 84112

Veterans & Military Students

The mission of the Veterans Support Center is to improve and enhance the individual and academic success of veterans, service members, and their family members who attend the university; to help them receive the benefits they earned; and to serve as a liaison between the student veteran community and the university.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

Veterans Support Center

801-587-7722

veteranscenter.utah.edu (Links to an external site.)

418 Union Building
200 S. Central Campus Dr.
Salt Lake City, UT 84112

Women

The Women's Resource Center (WRC) at the University of Utah serves as the central resource for educational and support services for women. Honoring the complexities of women's identities, the WRC facilitates choices and changes through programs, counseling, and training grounded in a commitment to advance social justice and equality.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

Women's Resource Center

801-581-8030

womenscenter.utah.edu

411 Union Building
200 S. Central Campus Dr.
Salt Lake City, UT 84112

Inclusivity at the U

The Office for Inclusive Excellence is here to engage, support, and advance an environment fostering the values of respect, diversity, equity, inclusivity, and academic excellence for students in our increasingly global campus community. They also handle reports of bias in the classroom as outlined below:

Bias or hate incidents consist of speech, conduct, or some other form of expression or action that is motivated wholly or in part by prejudice or bias whose impact discriminates, demeans, embarrasses, assigns stereotypes, harasses, or excludes individuals because of their race, color, ethnicity, national origin, language, sex, size, gender identity or expression, sexual orientation, disability, age, or religion.

For more information about what support they provide and links to other resources, or to report a bias incident, view their website or contact:

Course Schedule

<u>Date</u>	<u>day</u>	<u>Lecture Topic</u>	<u>Suggested Chapter readings</u>
05/14	T	Introduction to Human Physiology, Chemistry for Human Physiology, Biomolecules CHOs and lipids Start watching outside of class the prerecorded lectures on Biomolecules proteins and Nucleic acids, Metabolism and Glycolysis and the TCA Cycle and Oxidative Phosphorylation Suggested readings Chapter 2 and Chapter 4	
05/16	H	Live discussion/review of 05/14 recorded lectures and go over study questions Start watching recorded lectures on Membrane Function and Chemical Messengers Suggested reading Chapter 6 pp 148-149, Chapter 7 pp 188-196	
05/17 Last day to add w/out a permission code and last day to wait list			
05/21	T	Live discussion/review of 05/16 recorded lectures and go over study questions Start watching outside of class the recorded lectures on the Endocrine System part 1, part 2 and part 3, and Regulating Blood Glucose Levels Suggested reading Chapter 11 pp 316-347	
05/22		Last day to add, drop, audit and elect CR/NC classes	
05/23	H	QUIZ #1 Live discussion/review of 05/21 recorded lectures and go over study questions Start watching recorded lectures on Nervous System part 1 and part 2 Suggested reading Chapter 7 pp161-188	
05/28	T	Review for exam #1	
05/30	H	Exam 1 over material through the Endocrine system	
06/04	T	Live discussion/review of 05/23 recorded lectures and go over study questions Start watching recorded lecture on Synaptic Transmission Suggested reading Chapter 7 pp197-198	

- 06/06 H **QUIZ #2**
Live discussion/review of 06/04 recorded lectures and go over study questions
Start watching recorded lectures on The Brain part 1, part 2 and part 3
Suggested reading Chapter 8 pp205-230
- 06/11 T Live discussion/review of 06/06 recorded lectures and go over study questions
Start watching recorded lecture on The Sensory System part 1
Suggested reading Chapter 10
- 06/13 H **QUIZ #3**
Live discussion/review of 06/11 recorded lectures and go over study questions
Start watching recorded lectures on Vision part 2a and part 2b
Suggested reading Chapter 10
- 06/18 T **Review for exam #2**
- 06/20 H **Exam 2 over material from the Nervous system through The Sensory System part 1**
- 06/21 **Last day to withdraw from class**
- 06/25 T Live discussion/review of 06/13 recorded lectures and go over study questions
Start watching recorded lectures on hearing part 3a and taste and smell part 3b
Suggested reading Chapter 10
- 06/27 H **QUIZ #4**
Live discussion/review of 06/25 recorded lectures and go over study questions
Start watching recorded lectures on Autonomic nervous system and motor neurons
Suggested reading Chapter 9 pp243-259
- 07/02 T Live discussion/review of 06/27 recorded lectures and go over study questions
Start watching recorded lectures on Muscle contraction part 1, muscle physiology part 2a and part 2b
Suggested reading Chapter 12
- 07/04 **July 4th, no class**
- 07/09 T **Exam 3 over material from the Vision through Autonomic and motor nervous systems**
- 07/11 H **QUIZ #5**
Live discussion/review of 07/02 recorded lectures and go over study questions
Start watching recorded lectures on The Heart part 1 and part 2
Suggested reading Chapter 14 pp417-427
- 07/16 T Live discussion/review of 07/11 recorded lectures and go over study questions
Start watching recorded lectures on the Respiratory system part 1 and Mechanics of breathing part 2
Suggested reading Chapter 16

- 07/18 H **QUIZ #6**
Live discussion/review of 07/16 recorded lectures and go over study questions
Start watching recorded lecture on Gas exchange
Suggested reading Chapter 16
- 07/23 T Live discussion/review of 07/16 recorded lectures and go over study questions
Start watching recorded lectures on The Kidneys
Suggested reading Chapter 16
- 07/25 **QUIZ #7**
H Live discussion/review of 07/23 recorded lectures and go over study questions
Start watching recorded lectures on Circulatory system part 1 and part 2
Suggested reading Chapter 13 pp430-434, Chapter 14 pp462-478
- 07/26 [Last day to reverse CR/NC option](#)
- 07/30 T Live discussion/review of 07/25 recorded lectures and go over study questions
Watch recorded lectures on the GI Tract
- 07/31 W Review for the final
- 08/02 F **Final exam over material from The Respiratory Tract through The Kidneys**