

# BIOLOGY 2325 - HUMAN ANATOMY

## COURSE INFORMATION

Anatomy is an enjoyable topic that is not conceptually difficult, however, from the perspective of time commitment it is rigorous. It requires a considerable amount of work coupled with the ability to use the applied knowledge to solve problems and synthesize answers. Work on the course daily, do not get behind, and you can succeed while having a rewarding learning experience.

### LECTURES

This anatomy course incorporates a wide array of pedagogy, from excellent lecture-oriented instruction and pre-lecture movies, to problem-based learning, interactive discussions, and dynamic hands-on collaborative laboratory sessions. Throughout the course students create their own textbook that is specific to the course of study. For this reason, students who attentively participate in lecture sessions have a distinct advantage. All written examinations are based on the material covered in lecture, with all material being equally important and fair game.

### MISSING LECTURE

The summer Human Anatomy class is listed as an In-Person course. The definition of an In-Person course is ***“A traditional, campus-based, fully in-person class with a scheduled room and meeting time.”*** If for any reason you miss lecture, you should acquire the missed lecture notes from a classmate and read the assigned material from the textbook that accompanies the course. If you have any questions I will be more than happy to meet with you either during my office hour or by arrangement. I will address the reasons for this more thoroughly on the first day of class.

### BOOKS AND SOFTWARE

**The Human Anatomy Course Pack by Mark Nielsen, which includes the following:**

*Human Anatomy Lecture Manual*, 6th edition by Mark Nielsen — Invaluable outline of all lectures containing the illustrations used in lecture; this course would be very difficult without it. The slides that you see during lecture will be available on the course website as .pdf files. You can either preview the lecture slides before you come to class, review the lecture slides as you study your notes, or use them if you miss lecture.

*Human Anatomy Study Guide and Workbook*, 6<sup>th</sup> edition by Mark Nielsen — This book contains information and exercises to help you succeed in the course. If you use it daily, you will be well prepared for the examinations in the course. It also contains a model of the pelvis/perineum that you will build for points toward your lab score.

The *Human Anatomy Course Pack* can be purchased at the Bookstore or directly from Kendall Hunt Publishing Company (<https://he.kendallhunt.com/product/human-anatomy>).

**Textbook resource pack includes the following:**

*Principles of Human Anatomy* and WileyPlus Web Link, 15<sup>th</sup> edition by Jerry Tortora and Mark Nielsen. This is the online textbook resource and web link that will contain the weekly homework assignments. The online site called WileyPlus has lots of features to help you learn anatomy.

*Real Anatomy* by Mark Nielsen and Shawn Miller — This is a web-based program that allows you to dissect a cadaver on your computer. It contains over two thousand images that can be studied, labeled, and rotated. It essentially allows you to take the lab home with you as you study and prepare for lab. Access to this program is through WileyPlus.

**Web-based materials:**

*Human Anatomy Interactive Atlas* by Shawn Miller and Mark Nielsen — this is an online product that you register for using the product key in the *Human Anatomy Lecture Manual* (<https://www.anatomylab.com>). It contains interactive photos of cadavers that will help you prepare for the lab quizzes and the final practical examination. The *Human Anatomy Interactive Atlas* is designed to allow you to interactively quiz yourself as you study anatomy. All laboratory quizzes are visual quizzes based on the images in this software.

*Human Anatomy Lab Manual*, 6th edition by Mark Nielsen — This book is available on the Canvas and contains all the information you will need as you prepare for the weekly lab quizzes. It will provide optional exercises to use with *Real Anatomy* to help you get the most from your laboratory experience. Each lab chapter provides lists of structures you will study using the Human Anatomy Interactive Atlas to prepare for lab quizzes and will help you preparation for the final practical exam.

### OTHER MATERIALS

Obtain good quality colored pencils in pure or bright colors (e.g., red, blue, green, etc.). Anatomy is a visual subject and color is used during lecture presentations to label the illustrations on each slide. It will be to your advantage to color-code drawings in the lecture manual. Colored pencils will also be **REQUIRED** for coloring and drawings on examinations; it is your responsibility to have them.

***Note: This syllabus is subject to change (except for coursework dates/times). I will notify the class should any changes be made.***

## Office Hours

Beginning the second week of class I will hold office hours on Mondays and Wednesdays in the anatomy lab to answer any questions you might have regarding lecture material. I will also be available by appointment if you are unable to attend regular office hours. Additionally, each TA will hold weekly office hour in the anatomy lab (times will be posted on Canvas. I encourage you to take advantage of office hours to get your questions answered and to study anatomy. **DON'T BE AFRAID TO ASK QUESTIONS!**

## EXAMS

All exams count toward your final grade in this class, this means that you **WILL NOT** be able to drop any of the exams. The following statement appears in the course information box for BIOL 2325, Section 001 in the Summer 2022 Class Schedule:

*Due to the accelerated pace of this course during Summer semester students are required to take all lecture exams, lab quizzes, and lab exams on the day and time scheduled on the syllabus.*

So, it should have been understood **BEFORE** you registered for this class that all **exams must be taken on the day and time they are scheduled**.

The two midterm exams will cover specific parts of the course but the final exam is a little different. Not only will it cover the material since the second exam but it will also have a comprehensive component to it, making it a more significant exam in terms of its point value (see final exam breakdown below). In addition, there will be weekly quizzes in the lab as well as soft tissue and bone practical quizzes, and a final comprehensive practical examinations (see laboratory schedule). The point distributions are as follows:

Midterm 1	100 points
Midterm 2	100 points
Final Exam	140 points: Approximately 80 points from the material covered after the exam 2, approximately 30 points from the material covered prior to exam 1, and approximately 30 points from the material covered between exam 1 and 2.
Homework	55 points (11 @ 5 points each)
Laboratory	155 points (see point breakdown below)

This testing format provides for an equal evaluation of all parts of the course, with no emphasis being placed more strongly in one area over another.

## EVALUATION OF STUDENT PERFORMANCE

To pass this course, you must earn a cumulative average of 45%:

18.2%	Exam 1 - 100 points
18.2%	Exam 2 - 100 points
25.4%	Final Exam - 140 points
10.0%	Homework - 55 points 11 assignments worth 5 points each
28.1%	Laboratory Grade - 155 points: 10 lab quizzes @ 5 points each = 50 points Pelvic model = 5 points Soft tissue practical quiz = 10 points Bone practical quizzes (2) 20 points Final practical examination = 70 points

The grading breakdown is as follows:

90.0—100%	A
88.5—89.9%	A-
84.5—88.4%	B+
80.0—84.4%	B
77.5—79.9%	B-
70.0—77.4%	C+
60.0—69.9%	C
50.0—59.9%	C-
45.0—49.9%	D
0.00—44.9%	E

**Total points possible = 550**

All grades are final. There will not be any opportunities to change your grade after you have completed the course. If you have been accepted into a professional program and your entry depends on passing this course, then you must achieve the necessary grade. Under no condition will make-up work or exam re-takes be given.

## COURSE CONTENT ACCOMMODATIONS POLICY

I do not grant content accommodation requests as the course content fulfills legitimate pedagogical goals.

# **BIOLOGY 2325 - HUMAN ANATOMY**

## **EXPECTED LEARNING OUTCOMES**

The undergraduate Biology programs at the University of Utah provide students the knowledge base, skills, and resources needed to prepare them for careers in the Biological Sciences, or for enrollment and success in post-graduate education opportunities in numerous graduate or professional schools such as, biology, medicine, dental, veterinary, pharmacy, nursing, physical therapy, occupational therapy, and physician assistant programs. Within the department of biology, the human anatomy course is specifically designed to serve the needs of students in biology, and from many other departments on campus, as they prepare for futures in medical, dental, allied health, exercise sports science, and athletic training careers. In fact, it is designed for the educated person who is interested in becoming more knowledgeable about their most important possession—their own body.

### **SPECIFIC LEARNING OUTCOMES**

- **Structure and Function**

Students will be able to think critically about structure-function relationships as they build a strong foundation knowledge of the structure of the human body.

- **Developmental and Evolutionary Patterns**

Students will be able to apply developmental patterns and evolutionary concepts to simplify the learning of anatomical structure and use these patterns to critically analyze the structure-function relationships of the human body.

- **Transmission, Flow, and Interpretation of Anatomical Information**

Students will be able to utilize the extensive language of anatomy to explain the important structural relationships and functional significance of the human body in biological and medical contexts.

- **Body Systems**

Students will be able to explain how the hierarchical organization of the human form, from cells, to tissues, to organs, to body systems account for the structural and functional features at all levels of organization and function in the human body.

- **Ability to Apply Scientific Reasoning**

Students will be able to apply critical thinking skills using the problem solving skills of science to diagnose and solve anatomical problems related to the structure and function of the human body.

- **Real World Application**

Students will not only be prepared to enter the medical, dental, nursing, allied healthcare, exercise science, and athletic training professions with the critical knowledge base of one of the most important tools they can have in their toolbox — human anatomy, but they will be prepared to better communicate with healthcare professionals about their own body and health and better understand their body as they deal with it on a daily basis for the remainder of their life.

## ADDITIONAL IMPORTANT INFORMATION

The following information provides students with a variety of important resources and facts about the course and the university in general:

### **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.

### **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).

### **Wellness Statement**

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at <https://wellness.utah.edu> or 801-581-7776.

### **Veterans Center**

If you are a student veteran, the University of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <https://veteranscenter.utah.edu>. Please also let me know if you need any additional support in this class for any reason.

### **LGBT Resource Center**

If you are a member of the LGBT community, I want you to know that my classroom is a safe zone. Additionally, the University of Utah has an LGBT Resource Center on campus. They are located in Room 409 in the Olpin Union Building. Hours: M-F 8-5pm. You can visit their website to find more information about the support they can offer, a list of events through the center and links to additional resources: <https://lgbt.utah.edu>. Please also let me know if there is any additional support you need in this class.

### **English as an Additional/Second Language**

If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center (<https://writingcenter.utah.edu>); the Writing Program (<https://writing-program.utah.edu>); the English Language Institute (<https://eli.utah.edu>). Please let me know if there is any additional support you would like to discuss for this class.

### **COVID Information**

Please refer to <https://healthcare.utah.edu/coronavirus> for up-to-date coronavirus policies, practices, and other information.

# BIOLOGY 2325 - HUMAN ANATOMY

## SUMMER TERM 2023

### Schedule of Lectures and Exams

**Lecture time and place:** M, W, F – 11:30 AM to 1:30 PM, Room 220, ASB (Aline Wilmot Skaggs Building).

**Note to students:** Print this schedule and keep it with you. The \* indicates that the laboratory will begin with a quiz.  
**You are responsible for all dates, times and places in this schedule.**

May	15	Introduction to Course; Histology
	17	Histology
	18	<i>No Laboratory Sessions the First Week - View Online Lab Introduction</i>
	19	Integument ( <b><i>last day to add without permission code</i></b> )
	22	Osteology; Arthrology
	24	Myology; Cardiovascular System ( <b><i>last day to add, drop (delete), elect CR/NC, audit class</i></b> )
	*25	<i>Lab 1 - see lab schedule for details</i>
	26	Cardiovascular System
	29	<b>HOLIDAY - NO CLASS</b>
	31	Cardiovascular System; Urinary System
June	*1	<i>Lab 2 - see lab schedule for details</i>
	2	Respiratory system; Digestive System
	5	Digestive System
	7	Nervous System
	*8	<i>Lab 3 - see lab schedule for details</i>
	9	<b>EXAM 1 - ASB 220 (bring your colored pencils!)</b>
	12	Nervous System
	14	Patterns of Organization - Body Wall; Anatomy of the Thorax
	*15	<i>Lab 4 - see lab schedule for details</i>
	16	Anatomy of the Thorax; Anatomy of the Abdomen
	19	<b>HOLIDAY - NO CLASS</b>
	21	Anatomy of the Abdomen; Reproductive Systems
	*22	<i>Lab 5 - see lab schedule for details</i>
	23	Reproductive Systems; Anatomy of the Pelvis and Perineum ( <b><i>last day to withdraw from class</i></b> )
	26	Anatomy of Pelvis and Perineum
July	28	Anatomy of the Back; Patterns of Organization - Limbs
	*29	<i>Lab 6 - see lab schedule for details</i>
	30	Anatomy of the Superior Limb - Brachial Plexus
	3	Anatomy of the Superior Limb - Scapular and Shoulder Muscles
	5	Anatomy of the Superior Limb - Brachial Muscles, Topography, and Vasculature
	*6	<i>Lab 7 - see lab schedule for details</i>
	7	<b>EXAM 2 - ASB 220 (bring your colored pencils!)</b>

- 10 Anatomy of the Superior Limb - Antebrachial and Hand Muscles
- 12 Anatomy of the Inferior Limb - Innervation; Hip Muscles, Medial Thigh Muscles, and Gait
- \*13 *Lab 8 - see lab schedule for details*
- 14 Anatomy of the Inferior Limb - Thigh Muscles, Vasculature, and Leg Muscles
  
- 17 Anatomy of the Inferior Limb - Leg Muscles, Foot Muscles
- 19 Patterns of Organization - Head and Neck; Anatomy of the Head and Neck - Neck Muscles
- \*20 *Lab 9 - see lab schedule for details*
- 21 Anatomy of the Head and Neck - Somitic Muscles, and Pharyngeal Arch Muscles
  
- 24 **HOLIDAY - NO CLASS**
- 26 Anatomy of the Head and Neck - Anatomy of the Mouth; Anatomy of the Eye
- \*27 *Lab 10 - see lab schedule for details*
- 28 Anatomy of the Head and Neck - Anatomy of the Eye (*last day to reverse CR/NC*)
  
- 31 Anatomy of the Head and Neck - Anatomy of the Ear
- Aug. 2 Anatomy of the Head and Neck - Anatomy of the Ear; Cranial Nerves
- 3 **FINAL PRACTICAL EXAM - see lab schedule for details**
  
- 4 **FINAL COMPREHENSIVE WRITTEN EXAM (bring your colored pencils!)**  
From 10:30 AM –12:30 PM in ASB 220

**Instructor:** Shawn Miller

**Email:** smiller@biology.utah.edu

**Office Hours:** Monday and Wednesday in anatomy lab from 2:00 to 3:00 PM or by appointment.

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## SUMMER TERM 2023

### Schedule of Laboratories

**Laboratory sections:** Thursday – 10:00-12:00, 12:30-2:30, 3:00-5:00, 5:30-7:30

**Laboratory location:** South Biology, Room B03

**Note to students:** All laboratories begin with a quiz. You will use the Laboratory Manual (on Canvas) and the Interactive Atlas (on Anatomylab.com) to prepare for the weekly quizzes. Additional information is available in the laboratory introduction online. Practical quizzes and exams must be taken on the day for which they are scheduled. **There will be no exceptions to this policy** due to the logistics associated with setting up and proctoring practical quizzes and exams. Please print this schedule and keep it with you. **You are responsible for all the dates, times and places.**

May	18	<b>NO LAB SESSIONS THIS WEEK - <i>Read through Laboratory introduction on Canvas</i></b>
	25	Laboratory 1: Appendicular Skeleton
June	1	Laboratory 2: Introduction to Soft Tissues, Cardiovascular System
	8	Laboratory 3: Urinary, Respiratory, and Digestive Systems
	15	Laboratory 4: Axial Skeleton, and Nervous System
	22	Laboratory 5: Anatomy of the Thorax and Abdomen, Abdominal Vasculature
	29	Laboratory 6: Genital Systems, Pelvis/Perineum, and Epaxial muscles <b>Turn in Pelvis model (5 points)</b> <b>Soft tissue practical quiz (10 points)</b>
July	6	Laboratory 7: Anatomy of the Superior Limb <b>Superior Limb Bone Practical Quiz (10 points)</b>
	13	Laboratory 8: Anatomy of the Superior Limb
	20	Laboratory 9: Anatomy of the Inferior Limb <b>Inferior Limb Bone Practical Quiz (10 points)</b>
	22	<b>Saturday open lab sessions – times to be announced</b>
	27	Laboratory 10: Anatomy of the Inferior Limb
	29	<b>Saturday open lab sessions – times to be announced</b>
Aug	3	<b>Final Comprehensive Practical Exam:</b> All students must take the final comprehensive practical exam on this day during the laboratory section for which they are registered.



# AMENDMENTS

## **MAKE UP POLICIES:**

### **Lecture**

Refer to the “Missing Lecture” paragraph on the first page of the syllabus.

### **Labs and lab quizzes**

Full laboratory sessions cannot be made up.

### **Lab quizzes**

Students must get a permission slip from the instructor in order to make up missed lab quizzes. All missed lab quizzes must be taken at the end of the next lab the student attends, regardless of the number of missed quizzes. Under most circumstances, running late is not a valid excuse for missing a lab quiz. Make up quizzes may be different than the quiz that was administered at the beginning of lab, however, the quiz will still be based on the same information as the one administered during lab. All descisions regarding the make up of missed lab quizzes will be made by the instructor

### **Exams**

The course schedule states that all exams must be taken as scheduled on the syllabus and this information was discussed on the first day of class. Therefore students will only be able to take exams at different times under extenuating circumstances. A make up exams may be different than the one administered on the day for which it was scheduled in the syllabus. However, the exam will be based on the same information. All descisions regarding the rescheduling of exams will be made by the instructor.