Course Syllabus (tentative) BIOS 3755: Human Physiology
Fall 2026

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Office hours: TBD

Course description: This course is a comprehensive survey of fundamental human systems physiology. Beginning with processes at the cellular level, the course expands to tissue function, integration at organ level and finally multi-organ coordination of physiological processes that maintain homeostasis. Systems covered in detail include nervous and sensory, neuroendocrine, muscular, respiratory, gastrointestinal, cardiovascular and renal.

Course Goals and Learning Outcomes:

To introduce and establish an organizational framework for any future study in human physiology. Upon completion of this course, students will be able to demonstrate understanding of the following topics:

-a working knowledge of terminology in medical physiology.
-fundamental principles of normal function of tissues and organ systems of the human body.
-how physiological function follows anatomical form.
-how different physiological systems provide homeostasis for the human body.

Textbook: "**Vander's Human Physiology"**, 16th Ed., by: Widmaier, Raff, and Strang
Publisher: McGraw-Hill (new edition in June, available through GT Bookstore)
ISBN: 9781264451388
Electronic copy available for purchase or rent

Grading:

Midterm Exams (3 @ 15% each)	45%
Final Exam (comprehensive)	35%
Attendance/class short assignments	20%

Midterm exams are based on material presented in lecture. These exams are closed-book, closed-note with no "cheat sheets" allowed.

The **final exam** is comprehensive and drawn heavily on content (questions) included on the previous midterm exams.

Lectures: Attendance in lecture correlates strongly with performance in this course, and reading assigned chapters prior to lecture is encouraged and beneficial for lecture.

Consumption of food during class not permitted.

There will be a brief "intermission" during the two-hour class period. Any beverages consumed in class must be with a secure lid (no spillage, please).

Learning Management System (LMS): Resources for this course (including lecture slides) will be managed via CANVAS. The web site is canvas.gatech.edu.
Check CANVAS daily for important announcements and reminders.

Lecture Exams: Midterm exams will be administered during regular class periods (see detailed syllabus schedule). Exams will be multiple choice format, with an occasional short answer question.

Missed Exams: If you miss an exam for any reason, you will receive a grade of 0 (zero) on that exam unless you petition for a makeup exam within 24 h of the start of the missed exam, *and* your petition is approved. Your petition must be submitted in writing and must include documentation of a legitimate reason for missing the exam. You may submit your petition before the exam if you know your scheduling conflict in advance. Examples of legitimate reasons to miss an exam include a documented illness, illness or death in your immediate family, and participation in official university activities. If your petition is approved, the missed exam grade will not be included in calculating your final average. The weighted mean of your other exam scores will substitute for the missed exam, making the missed exam completely neutral in determining your final point total.

Attendance Policy: Attendance is necessary to earn any "in class" activity points (counting towards 20% of final grade). Unexcused absence from class results in a 5% reduction in final class average. Please note this class will proceeds through material at a faster-than-normal pace, hence attending class is essential for performing well.

Key dates: Pre-departure lectures Aug 24-28, 2:45 – 3:45 pm (ET), delivered via CANVAS Teams.
In-person classes 9:00 – 11:00 am Sep 3 – Oct 7.
Final Exam will be 1:00 – 4:00 pm Oct 13.

SYLLABUS

DATE	TOPIC	TEXT CHAPTERS*
Aug 24	Introduction to course, Homeostasis	1 (pp. 1-15)
Aug 25	Membranes, Osmosis & Ion Transport	4 (pp. 95-117)
Aug 26	Excitable Membranes	6 (pp. 136-146)
Aug 27	Action Potentials and Propagation	6 (pp. 147-157)
Aug 28	Synapses and Neurotransmitters	6 (pp. 158-171)
Sep 3	Organizing the Central Nervous System,	6 (pp. 172-188)
	Sensory Physiology I	7 (pp. 190-204)
Sep 4	Sensory Physiology II,	7 (pp. 205-234)
	Neuroendocrine Signaling Pathways	11 (pp. 321-338)
Sep 7	Skeletal Muscle: Structure & Organization	9 (pp. 258-261)
Sep 8	Coordinating Muscle Function,	9 (pp. 282-286)
	Other muscle: Cardiac and Smooth	9 (pp. 287-301)
Sep 9	EXAM 1: Intro thru Sensory Physiology	
	Mechanics & Physiology of Muscle Shortening	9 (pp. 262-277)
Sep 14	Introduction to Osmoregulation	14 (pp. 488-502)
	Renal Anatomy & Function	14 (pp. 503-519)
Sep 15	EXAM 2: Neuroendocrine thru Muscle Lectures	
Sep 16	Renal Regulation and Dynamics	14 (pp. 520-530)
Sep 17	Introduction to Cardiovascular System	12 (pp. 362-371)
	Physiology of the Heart	12 (pp. 372-389)
Sep 21	Hemodynamics & Exchanges	12 (pp. 390-418)
	Introduction to Respiratory System	13 (pp. 445-460)
Sep 22	Gas Exchange and Transport	13 (pp. 461-470)
Sep 23	Buffering the Blood and Ventilation Control	13 (pp. 471-487)
Sep 28	Overview of Digestive System	15 (pp. 531-538)
Sep 29	EXAM 3: Renal, Circulatory, Respiratory Lectures	
Sep 30	Organs of Digestion	15 (pp. 539-571)
Oct 1	Absorption & Regulation of Metabolism I	15 (pp. 539-571)
		16 (pp. 572-587)
Oct 5	Absorption & Regulation of Metabolism II	
Oct 6	Coordinating physiological energy demands	(no assigned reading)
Oct 7	Course Review	

Oct 13 FINAL EXAM, 1:00 am – 4:00 pm
Cumulative, includes Digestion and Metabolism lectures

***Current text edition. To be updated to new edition to be published June, 2026**

ACADEMIC INTEGRITY
Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct. Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

STUDENTS WITH LEARNING NEEDS AND SPECIAL ACCOMMODATIONS
If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain a letter of accommodation. Please also email me as soon as possible to set up a time to discuss your learning needs.

STUDENT-FACULTY EXPECTATIONS AGREEMENT
At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.