Biomedical Engineering and Physiology

BME 5401 Section 0064
Class Periods: M, W, F; period 5; 11:45 AM – 12:35 PM
Location: FLI 0101
Academic Term: Fall 2025

Instructor:
Name: Jamal Lewis
Email Address: jlewis@bme.ufl.edu
Office Phone Number: (352)392-1598
Office Hours: M, 3:30 – 5 PM, WERT 490

Teaching Assistant/Peer Mentor/Supervised Teaching Student:
Please contact through the Canvas website

- Name: Molly Dobrow, email address: m.dobrow@ufl.edu, office location: TBA, office hours: TBA

Course Description
Physiology of cells, bones, and the circulatory system from a biomaterial, biomechanics, cellular, and tissue engineering perspective. Intellectual property and technology transfer included (3 Credits).

Course Pre-Requisites / Co-Requisites
Upper-level biology and enrollment in BME graduate program or permission of the instructor.

Course Objectives

1. To teach the student about physiological systems of the human body and their homeostatic control.
2. To teach the student to be able to discuss and answer questions about physiological systems of the human body.
3. To teach the student to apply knowledge learned about physiological systems of the human body to biomedical engineering research.

Materials and Supply Fees
N/A

Required Textbooks and Software

- Title: **Vander's Human Physiology**
- Author(s): **Eric Widmaier, Hershel Raff and Kevin Strang**
- Publication date and edition: **15th Edition**
- ISBN number: **978-1259903885**

Required Computer
Recommended Computer Specifications: https://it.ufl.edu/get-help/student-computer-recommendations/
HWCOE Computer Requirements: https://www.eng.ufl.edu/students/advising/fall-semester-checklist/computer-requirements/

Course Schedule
The full course schedule is provided in an additional document ("BME5401-Fall-2025-Schedule") which is accessible on the course canvas site.

- Homeostasis (Chapter 1)
- Chemical Composition of the Body and Its Relation to Physiology (Chapter 2)
- Cellular Structure, Proteins, and Metabolic Pathways (Chapter 3)
- Movement of Solutes and Water Across Cell Membranes (Chapter 4)
- Cell Signaling in Physiology (Chapter 5)
- Neuronal Signaling and the Structure of the Nervous System (Chapter 6)

- Sensory Physiology (Chapter 7)
- Consciousness, the Brain, and Behavior (Chapter 8)
- Muscle (Chapter 9)
- Control of Body Movement (Chapter 10)
- The Endocrine System (Chapter 11)
- Cardiovascular Physiology (Chapter 12)
- Respiratory Physiology (Chapter 13)
- The Kidneys and Regulation of Water and Inorganic Ions (Chapter 14)
- The Digestion and Absorption of Food (Chapter 15)
- Regulation of Organic Metabolism and Energy Balance (Chapter 16)

Important Dates

Friday, September 26th ***Exam 1 (11:45 AM, FLI 0101)***
Friday, November 7th ***Exam 2 (11:45 AM, FLI 0101)***
Friday, December 9th ***Exam 3 (10:00 AM, FLI 0101)***

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Take-home Quizzes (3)	10 each	20%
Quizzes (3)	10 each	20%
Exams	100 each	60%
		100%

Grading Policy

The following is given as an example only.

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

Academic Policies & Resources

To support consistent and accessible communication of university-wide student resources, instructors must include this link to academic policies and campus resources: https://go.ufl.edu/syllabuspolicies. Instructor-specific guidelines for courses must accommodate these policies.

Commitment to a Positive Learning Environment

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University's core values.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Coordinator
- HWCOE Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
- Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@ufl.edu