

Spring 2024 **TENETATIVE** Course Syllabus
BCH5905 - Medical Metabolism
Distance Learning Section

Please note: This is a **TENTATIVE** syllabus. This course is still under development. The topics, schedule, and grading may still have minor adjustments.

Course Director: Dr. Deborah Smith
Assistant Instructional Professor
Email: dsmith43@ufl.edu
Office hours: Zoom by appointment using bookings
Biochemistry Office: Academic Research Building (ARB) R3-234
Biochemistry Phone: (352)294-8404

Credits: 3

Dates & Times Fully online and synchronous
Tuesdays – 1:55 – 2:45pm (period 7)
Thursdays – 1:55 – 3:50pm (periods 7 & 8)

Course Objectives

- Understand the fundamental principles of human metabolism
- Connect the basic principles of metabolism to the causes, symptoms, and treatments of metabolic disorders
- Develop skills in critical thinking, problem solving and communication through analysis and discussion of the metabolic pathways and case study scenarios
- Learn to analyze and evaluate primary research articles in the metabolism field
- Recognize the impact of metabolism on human health

Prerequisites: GMS5905: Fundamentals of Biochemistry & Molecular Biology

Required Textbook: Lehninger Principles of Biochemistry, 8th edition with Achieve. This text is offered through UF All Access. We will be using Achieve for homework assignments and quizzes.

Web Page: Course material is available on the Canvas E-Learning site: <https://elearning.ufl.edu/>. Access lecture videos and slides by clicking the respective exam module button on the course homepage. Lectures videos are the property of UF and cannot be downloaded. Weekly announcements can be found by clicking “Announcements.” **Students are expected to keep up-to-date with all information communicated through the announcements.**

Course Design: In this course, metabolism will be taught in the context of medical situations. Clinical cases will be presented and discussed. Lectures will provide appropriate background to understand the basic metabolic pathways involved in each case and why disruption of the pathways leads to patient symptoms. As a final project, students will create their own case study scenario.

Grading Policy: Students' final letter-grades will be determined based on performance on guided question homework assignments, three examinations, and a final project. Points are distributed as follows:

Assignment Type	Points	Percentage of Final Grade
Homework	75	10%
Exams	300	65%
Final Project	125	25%
Total	500	100%

Final grades will be calculated as a percentage of the total possible points earned. The grading scale for this course is based on the performance of the entire class on all assignments.

The default grading scale for the course is A \geq 90, A- 87-89.9, B+ 84 – 86.9, B 80 – 83.9, B- 77 – 79.9, C= 74 – 76.9, C 70 – 73.9, C- 67 – 69.9, D+ 64 – 66.9, D 60 – 63.9, D- 57 – 59.9, E \leq 56.9. The scale may be shifted downward based on course performance, but will never be shifted upwards. Updated grading scales will be provided after each exam.

Information on the UF graduate school grading policy is available at:

<https://gradcatalog.ufl.edu/graduate/regulations/>.

Honorlock: Exams will be administered using the Honorlock Chrome extension. Honorlock will provide a scientific calculator when an exam requires one. For all exams you must use Chrome web browser, a computer that is connected to the internet, and a webcam which can be turned to give a 360° view of your testing room if requested. You must be the only person in your testing room. Scratch paper is permitted, but you must show the front and back of the paper at the beginning of the exam. Ensure you have a stable internet connection. If your connection is dropped, the exam timer will not stop. *In case of technical issues during an exam, contact Honorlock support IMMEDIATELY! Use the chat feature within Honorlock or go to link below.*

Install Honorlock: <http://www.honorlock.com/extension/install>

Honorlock technical support: <https://honorlock.com/support/>

A practice Honorlock quiz is available all semester within the “Quizzes” section to ensure that students have the appropriate technology in place prior to the first exam.

Make-up exams: Make-up exams will be granted ONLY for emergencies. Students must provide adequate documentation of a need to miss an exam and receive approval by Dr. Smith. Vacations are not a valid reason to miss an exam. The make-up exams are specific to the missed exam, not cumulative.

Course Communications: Students are responsible for regularly checking announcements for important updates. Questions about course organization & operation, including grades, should be directed to Dr. Smith using the Canvas email system.

How to send a message on Canvas: <https://community.canvaslms.com/t5/Student-Guide/How-do-I-send-a-message-to-a-user-in-a-course-in-the-Inbox-as-a/ta-p/502>

Attendance Policy: As an online, synchronous course, attendance is expected. Students are expected to keep up with the lectures schedule and complete all assignments on a schedule (sample schedule provided below). If a student cannot complete an assignment when scheduled, the student must contact the professor and make appropriate arrangements. Excused absences must be consistent with university policies in the [Graduate Catalog](#) and require appropriate documentation. Additional information can be found in [Attendance Policies](#).

Students Requiring Accommodations: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the [Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. [Click here for guidance on how to give feedback in a professional and respectful manner](#). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. [Summaries of course evaluation results are available to students here](#).

University Honesty Policy: UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” [The Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use: All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy: Students who participate in live online office hours or review sessions with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited. There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see the [Notification to Students of FERPA Rights](#).

Campus Resources:

Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS): Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or police.ufl.edu.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.

Library Support, Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

[Student Complaints Campus](#)

[On-Line Students Complaints](#)

Course Outline for Medical Metabolism
TENTATIVE Spring 2024 Schedule

- 1 Jan 8 Introduction to Course
Introduction to the Case Study Approach
Overview of Carbohydrate Metabolism
- 2 Jan 15 MLK Holiday
G6P dehydrogenase complex case / Glycolysis Lecture
Guided Questions on case and treatments
- 3 Jan 22 Pyruvate kinase case / Guided Questions on case and treatments
Electron Transport Poisons Case / Electron Transport Lecture
- 4 Jan 29 Guided Questions on case and treatments
Warburg Metabolism Case / Regulation of Carbohydrate Metabolism Lecture
Guided question on case and cancer treatments
- 5 Feb 5 Glycogen Storage Case / Glycogen Lecture
Guided questions on case and treatments
Review
- 6 Feb 12 **Exam 1**
Overview of Lipid Metabolism
Fatty Acids and Cancer Case
- 7 Feb 19 Hypercholesterolemia / Cholesterol synthesis lecture
Guided questions on case and treatments
ApoE and astrocytes case / lipoproteins lecture
Guided questions on case and treatments
- 8 Feb 26 Hypertension case and questions
Tay Sachs case and questions
Fabry's Disease / lipid breakdown lecture
- 9 March 4 Guided Questions on case and treatments
Review
Exam 2
- 10 March 11 – Spring Break
- 11 March 18 Overview of Protein Metabolism
PKU case / Phenylalanine metabolism lecture
Guided Questions and treatments
- 12 March 25 Asparagine synthetase deficiency / Asparagine metabolism lecture
Guided questions and treatments
Vegetarian Diet – Guided questions

- | | | |
|----|----------------------|---|
| 13 | April 1 | Hartnup Disease / amino acid transport lecture
Guided questions and treatments
Gout / Nitrogen metabolism lecture |
| 14 | April 8 | Guided question and treatments
Review
Exam 3 |
| 15 | April 15 | Thiamine Deficiency Case Analysis |
| 16 | April 22 | Metabolomics / Final Case Project |
| 17 | April 29 – Exam Week | – Final project Due |