

**BCH 6206: ANALYSIS OF METABOLIC CONTROL
FALL 2020**

Final Schedule

M, W, F - Period 2 (8:30 AM - 9:20 AM), via Zoom.

Attendance at the scheduled times is expected; classes will be recorded.

In this course, we will discuss metabolism at a more advanced level than in the introductory courses, with a focus on "how we know, what we know". Students are expected to have performed with a B or better in an introductory course in Biochemistry. Courses such as BCH 4204, CHM 4207, CHM 3218, BCH 3025 or GMS 6001 are considered appropriate introductory courses for BCH 6206.

The text, "Biochemistry" by Voet and Voet (4th Edition), will serve as a general reference. This is available in the Health Science Center Bookstore. Older versions are also acceptable, although the pages of interest may be somewhat different from the 4th edition. Outside reading in primary journals, reviews, and special monographs will be assigned when appropriate. There will be a heavy reliance on class notes throughout the course.

Each lecture title (syllabus is on e-learning) represents the general area to be covered. The first five weeks or so are devoted to discussing the tools that we use to study metabolism. The second five weeks or so are devoted to signaling, and carbohydrate and lipid catabolism. The final five weeks are devoted to selected topics in lipid/steroid synthesis, and amino acid and nucleic acid metabolism.

EXAMINATION SCHEDULE

There will be three 3-hour examinations. All three will be composed of essay, short answer, and other question types. Reviews will be scheduled throughout the semester.

				<u>Room</u>
Tuesday	10/6	6:00 - 9:00 PM	(Lectures 8/31 - 9/30)	(Zoom online)
Tuesday	11/3	6:00 - 9:00 PM	(Lectures 10/5 - 10/28)	(Zoom online)
Monday	12/7	9:00 AM - 12:00 PM	(Lectures 10/30 - 12/4)	(Zoom online)

CLASS COORDINATOR

Dr. Matthew Merritt, Associate Professor (Biochemistry) R3-226B matthewmerritt@ufl.edu
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CORE INSTRUCTORS

Dr. Daniel Purich, Professor (Biochemistry) R3-126 dlpurich@ufl.edu 294-8400

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E-learning in Canvas: <http://lss.at.ufl.edu>

Click on Canvas and enter your Gatorlink user name and password; go to BCH 6206.

2020 Tentative Lecture Topics for BCH 6206

	Date	Topic	Instructor
WEEK 1	M 8/31	Metabolism: Why is it so relevant?	Purich
	W 9/2	The Tools of the Metabolist	Purich
	F 9/4	Thermodynamics: K_{eq} & ΔG_{actual}	Purich
WEEK 2	M 9/7	Labor Day, no classes	
	W 9/9	Enzyme Kinetics	Purich
	F 9/11	Metabolic Inhibitors I: Rational Design	Purich
WEEK 3	M 9/14	Metabolic Inhibitors II: Pathway analysis	Purich
	W 9/16	Radioactive tracers: Pathway kinetics & protein turnover	Purich
	F 9/18	Metabolic Control Analysis: Pathway flux, pacemakers, etc.	Purich
WEEK 4	M 9/21	Metabolomics: Introduction & Basic concepts	Merritt
	W 9/23	Metabolomics: Techniques: and Instrumentation	Merritt
	F 9/25	Metabolomics Data: Forms, formats, and uses	Merritt
WEEK 5	M 9/28	Measuring flux in living systems	Merritt
	W 9/30	Metabolomics Research: Overview	Merritt
	F 10/2	Homecoming, no classes	
WEEK 6	M 10/5	Enzyme Cooperativity & Allosteric transitions (this and following lectures will be on the 2nd exam)	Purich
	Tu 10/6	First Exam (6-9 PM) (includes the first 13 lectures: 8/31-9/30)	
	W 10/7	Signaling: G-protein receptors	Zarrinpar

	Date	Topic	Instructor
	F 10/9	Signaling: tyrosine kinase receptors	Zarrinpar
WEEK 7	M 10/12	Signaling: lipid receptors & Lipid rafts	Zarrinpar
	W 10/14	Regulation of glycolysis	Khemtong
	F 10/16	Regulation of gluconeogenesis	Khemtong
WEEK 8	M 10/19	Regulation of glycogen turnover	Khemtong
	W 10/21	Hexosamine biosynthesis and function	Ragavan
	F 10/23	Regulation of the TCA cycle	Ragavan
WEEK 9	M 10/26	Energy conservation	Ragavan
	W 10/28	F ₁ F ₀ ATP synthase	Cain
	F 10/30	Circadian rhythms and central pathway regulation (this and following lectures will be on the 3rd exam)	Gumz
WEEK 10	M 11/2	Fatty acid oxidation	Gumz
	T 11/3	Second Exam (6-9 PM) (includes 11 lectures: 10/5-10/28)	
	W 11/4	Fatty acid biosynthesis	Gumz
	F 11/6	Prostaglandin metabolism	Gumz
WEEK 11	M 11/9	Cholesterol metabolism	Gumz
	W 11/11	Veteran's Day, no classes	
	F 11/13	Lipoprotein metabolism	Gumz
WEEK 12	M 11/16	Amino acid metabolism: AA assimilation & degradation	Purich
	W 11/18	Amino acid metabolism: Urea cycle	Purich
	F 11/20	Amino acid metabolism: Formation of nonessential AA's	Purich
WEEK 13	M 11/23	Purine biosynthesis, turnover, and salvage	Purich

	Date	Topic	Instructor
	W 11/25	Thanksgiving Holiday, no classes	
WEEK 14	M 11/30	Pyrimidine biosynthesis, One-carbon metabolism, & ribonucleotide reductase	Purich
	W 12/2	ZOOM Lipid/Sterol Review	Gumz
	F 12/4	ZOOM Nitrogen Review	Purich
WEEK 15	M 12/7	Third Exam (9AM-12PM) (includes 14 lectures:10/28-12/4)	

Grading

The course grade will be determined by the summation of the scores on the three exams. The assigned grade will be made based on comparison to the class average.

Makeup Exams

Exams can be made up with prior approval of Dr. Merritt. Special arrangements can be made in case of documented emergency.

Accommodations for Students with Disabilities

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.

Cheating and Plagiarism

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. [Click here to read the Honor Code](#). 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.

Health and Wellness

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care](#) website to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the [Counseling and Wellness Center](#) website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the [Student Health Care Center](#) website.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information.](#)

On-Line Students Complaints: [View the Distance Learning Student Complaint Process.](#)

Online Course Evaluations:

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.a.ufl.edu/students/>. 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 <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.