

**BCH 6206: ADVANCED METABOLISM
FALL 2023**

Final Schedule

**M, W, F - Period 2 (8:30 AM - 9:20 AM), Academic Research Building, R3-265.
Attendance at the scheduled times is expected. Lectures are not available online.**

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 (5th 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 5th 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 exams will be composed of essay, short answer, and other question types. Reviews will be scheduled throughout the semester.

				<u>Room</u>
Tuesday	9/26	6:00 - 9:00 PM	(Lectures 1-14)	ARB R3-265
Tuesday	10/24	6:00 - 9:00 PM	(Lectures 15-24)	ARB R3-265
Wednesday	12/6	6:00 - 9:00 PM	(Lectures 25-39)	ARB R3-265

CLASS COORDINATOR

Dr. Matthew Merritt, Associate Professor (Biochemistry)	R3-226B	matthewmerritt@ufl.edu
		294-8397

CORE INSTRUCTORS

Dr. Daniel Purich, Professor (Biochemistry)	R3-126	dlpurich@ufl.edu	294-8400
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Dr. Charlie Khemtong, Associate Professor (Endocrinology)	R4-108	273-8646
	chalermchai.khemtong@medicine.ufl.edu	

Dr. Ramon Sun, Associate Professor (Biochemistry)	R3-216A	ramonsun@ufl.edu	294-8407
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Dr. Michelle Gumz, Professor (Medicine)	CG-92B	michelle.gumz@medicine.ufl.edu
		273-6887

Dr. Ali Zarrinpar, Professor (Dept. of Surgery)	1329 Bldg, Rm 2170	
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		265-0606

E-learning in Canvas: <https://elearning.ufl.edu>

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

2023 Tentative Lecture Topics for BCH 6206

	Date	Topic	Instructor
WEEK 1	W 8/23	1-Metabolism: Why is it so relevant?	Purich
	F 8/25	2-The Tools of the Metabolist	Purich
WEEK 2	M 8/28	3-Thermodynamics: K_{eq} & ΔG_{actual}	Purich
	W 8/30	4-Enzyme Kinetics	Purich
	F 9/1	5-Metabolic Inhibitors	Purich
WEEK 3	M 9/4	Labor Day, No Classes	
	W 9/6	6-Radio Tracers and Metabolic Control Analysis	Purich
	F 9/8	7- Signaling: G-protein receptors	Zarrinpar
WEEK 4	M 9/11	8- Signaling: tyrosine kinase receptors	Zarrinpar
	W 9/13	9- Signaling: lipid receptors & Lipid rafts	Zarrinpar
	F 9/15	10- Regulation of glycolysis	Khemtong
WEEK 5	M 9/18	11- Regulation of gluconeogenesis	Khemtong
	W 9/20	12- Regulation of glycogen turnover	Khemtong
	F 9/22	13- Metabolomics: Introduction & Basic concepts	Merritt
WEEK 6	M 9/25	14- Metabolomics: Techniques: and Instrumentation	Merritt
	T 9/26	<i>Exam 1 (6-9pm)</i> <i>Includes Lectures 1-13</i>	
	W 9/27	15- Metabolomics Data: Forms, formats, and uses	Merritt
	F 9/29	16- Measuring flux in living systems	Merritt
WEEK 7	M 10/2	17- Metabolomics Research: Overview	Merritt
	W 10/4	18- MALDI-MS	Sun
	F 10/6	Homecoming, no classes	

	Date	Topic	Instructor
WEEK 8	M 10/9	19- Spatial Biology	Sun
	W 10/11	20- The New Glycobiology	Sun
	F 10/13	21- Nutrients as signaling molecules	Merritt
WEEK 9	M 10/16	22- Hexosamine biosynthesis and function	Merritt
	W 10/18	23- Regulation of the TCA cycle	Merritt
	F 10/20	24- Energy conservation	Merritt
WEEK 10	M 10/23	25- Facilitated Transport	Merritt
	T 10/24	<i>Exam 2 (6-9pm)</i> <i>Lectures 14-24</i>	
	W 10/25	26- F ₁ F ₀ ATP synthase	Merritt
	F 10/27	27- Oxidative Phosphorylation	Merritt
WEEK 11	M 10/30	28-Circadian rhythms and central pathway regulation	Gumz
	W 11/1	29-Fatty acid oxidation	Gumz
	F 11/3	open	
WEEK 12	M 11/6	30-Fatty acid biosynthesis	Gumz
	W 11/8	31-Prostaglandin metabolism	Gumz
	F 11/10	Veteran's Day- No Classes	
WEEK 13	M 11/13	32-Cholesterol metabolism	Gumz
	W 11/15	33-Lipoprotein metabolism	Gumz
	F 11/17	34-Nitrogen metabolism: Digestion, Absorption & Malnutrition	Purich
WEEK 14	M 11/20	35-Nitrogen metabolism: AA assimilation & degradation	Purich
	W 11/22	Thanksgiving Break, No Classes	
	F 11/24	Thanksgiving Break, No Classes	
WEEK 15	M 11/27	36- Nitrogen metabolism: Urea cycle	Purich
	W 11/29	37- Nitrogen metabolism: Pyrimidine Nucleotide Biosynthesis	Purich

	Date	Topic	Instructor
	F 12/1	38- Nitrogen Metabolism: Purine nucleotide biosynthesis, salvage, and degradation	Purich
WEEK 16	M 12/4	39- Integration of Nitrogen Metabolism	Purich
	W 12/6	<i>Final Exam (6-9pm)</i> <i>Lectures 25-39</i>	

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.aa.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.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Syllabus Policy

The APC approved a recommended syllabi statement in response to House Bill 233 Intellectual and Viewpoint Diversity Act. The statement has been added to the University's syllabus policy.

As a reminder, the syllabi for all courses and sections offered each semester must be posted on publicly accessible websites. Syllabi must be posted at least three days prior to the first day of classes and must be retained on this site for at least three complete semesters (counting summer as a single semester).