

FALL 2023 COURSE SYLLABUS
BCH 4024: INTRODUCTION TO BIOCHEMISTRY AND MOLECULAR BIOLOGY
COURSE COORDINATOR: Dr. Lauren G. Douma

- **Course Coordinator Contact:** LDouma@ufl.edu OR Lauren.Douma@medicine.ufl.edu
- **DRC Accommodation Letters and Inquiries:** BIOCH-MAIL-BCH4024@mail.ufl.edu
- **Student Hours:** Tuesday afternoons throughout the semester are reserved for students to meet with Dr. Douma to discuss grades, accommodations, studying habits, and other administration-related inquiries. The link to reserve a 15-minute one-on-one meeting with Dr. Douma is located on the Canvas homepage.
- **Credit:** four (4) hours
- **Course Objectives:** BCH 4024 provides a survey of the structure, function, and metabolism of amino acids, proteins, carbohydrates, lipids, and nucleic acids. It introduces concepts in molecular biology, including replication, gene regulation, transcription, translation, and control of cell growth.
- **Prerequisites:** Organic Chemistry (CHM 2210 and 2211, CHM 2215 and 2216, or their equivalents at other universities). CHM 2200 is not an acceptable prerequisite.
- **Recommended Text:** *Lehninger Principles of Biochemistry, 8th edition*, by David L. Nelson and Michael M. Cox. New York: Macmillan Learning, 2021. Textbooks may be bought at the Health Center Bookstore (Room MG-15) and online as e-books. Used copies of the 7th edition are widely available.
- **Meeting Times and Places:** Lectures are Mondays, Tuesdays, Wednesdays, and Fridays (4th or 6th period) in the second-floor Stetson MSB (Medical Sciences Building) Auditorium (Room N2-200). The lecture schedule is on pages 7-9 of the syllabus. Announcements will be made in class or on Canvas. Students are responsible for checking Canvas regularly for important announcements.
- **Attendance:** We want to emphasize that attendance is central to success in this course. Students who regularly attend class and seek assistance or clarification score higher in BCH4024 than those who do not. Office hours for lecturers will be announced in class and posted on Canvas. ****Lectures will NOT be recorded, and there are NO Zoom options available****
- **Supplemental Instruction:** The SI Program is a free, facilitator-led group study in which a trained peer, who has previously excelled in BCH4024, leads weekly tutoring sessions to review challenging course material. We strongly encourage students to participate in the SI Program. During the first week of class, an announcement containing all details regarding SI sign-up will be posted. All SI sessions will be held online via Zoom. We also offer Zoom “walk-in” tutoring sessions and Q&A on Campuswire available to all students in the course. SI Leaders are NOT permitted to provide recorded lectures for students.
 - Campuswire link: <https://campuswire.com/p/G24983B86>
 - Join code (you must use your UFL email address): 2588
- **Web Page:** This syllabus, expanded policies, and other information about BCH4024 are available on [Canvas](#). The syllabus is also available at: <http://biochem.med.ufl.edu/academics/undergraduate-courses>. The professors reserve the right to change the syllabus/schedule at any time.

- **Lecture Notes:** ALL faculty lecture notes for this course are available **ONLY** at the Canvas site under “Modules.” All other course-related files are also there. There is no approved course package.
- **DRC Accommodations:** Students requesting accommodations for testing must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student. It is the student’s responsibility to send their letter of accommodations to BIOCH-MAIL-BCH4024@mail.ufl.edu at least 3 business days before the first exam.
- **Tests and Grading:** All exams will be administered through Canvas using Honorlock. BCH4024 is designated an assembly exam course. UF registrar has assigned us the following exam dates and times:
 - Exam 1 (100 pts): Wednesday, September 20 at 8:20 PM
 - Exam 2 (100 pts): Tuesday, October 17 at 8:20 PM
 - Exam 3 (100 pts): Monday, November 13 at 8:20 PM
 - Exam 4 (100 pts): Wednesday, December 13 at **7:30 AM**

Students will have ninety (90) minutes for each exam. Each exam is worth 100 points, with a course total of 400 points. There will be 50 multiple-choice questions on each exam (2 points per question). Students' final letter grades will be determined solely based on performance on exams. Exams will cover the material discussed verbally in the lecture and presented on slides. There is **NO EXTRA CREDIT**. For more information see the BCH4024 Testing and Grading Policies in Canvas. The UF grading policy is available at <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

By agreement of the faculty, BCH4024 will not release exams to the entire class for review. Be assured that exams undergo a rigorous statistical review of every individual question. The faculty also consider student concerns voiced *immediately* after exams. Adjustments to the answer key may occur and extra points will be awarded based only on the results of the faculty assessment. Dr. Douma is willing to review exams with individual students who submit a request via email (LDouma@ufl.edu) within a week after the exam. There is **no** possibility of additional points once grades are posted.

- **Honorlock:** Honorlock Chrome extension (<http://www.honorlock.com/extension/install>) will be used for all exams. Honorlock will provide a scientific calculator. You must use:
 - Chrome web browser and a webcam (external or internal). Cameras must be positioned to show your desk/scratch paper up to and including your head throughout the exam.
 - It is highly recommended to take exams on a computer that is **HARD-WIRED** to the internet to avoid loss of connection.
 - You must be the only person present in your testing room.
 - A pen/pencil and two (2) pieces of scratch paper are permitted, which will be shown to the proctor at the beginning of the exam.
 - No other items are permitted while taking the exams.

Cheating of any kind will NOT be tolerated and will be reported to the UF Honor Court.

ALL students must take the practice Honorlock quiz on Canvas before EVERY exam. Failure to take the quiz before an exam means you are accepting responsibility for any technical issues that occur.

UF libraries have rooms that can be reserved for exams (we recommend the Health Science Library): <https://ufl.libcal.com/reserve/>

- **Technical Issues:** If you experience technical difficulties during an exam, contact Honorlock support immediately: <https://honorlock.com/support/>. If you are experiencing issues accessing Canvas, contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- **Makeup Exams:** A make-up examination is available for students who miss **ONE** of the first three exams with the **PRIOR PERMISSION** of **DR. DOUMA**. Examples of valid reasons for missing an exam include illness, injury, or some unforeseeable academic scheduling conflict. Vacations ARE NOT a valid excuse for missing an exam.
 - **A DSO Instructor Notification is required for all makeup exam requests.** You can submit an instructor notification request here: <https://care.dso.ufl.edu/instructor-notifications/>
 - **You must also email Dr. Douma directly** confirming you have submitted a DSO instructor notification request and have read the makeup exam policy.
 - No student will be allowed to take more than one makeup exam.
 - Makeup exams will take place one week after the originally scheduled exams. Makeup exams are not cumulative and are designed for equal difficulty. Students failing to take an exam will receive zero points for that test.
 - No makeup exam is available for Exam 4, so to complete BCH4024, students must take Exam 4 as scheduled.
- **Honor Code:** 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 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 Dr. Douma.
- **Social Media:** Students sharing course materials or information through any large social media site, such as GroupMe or Chegg, is strictly **PROHIBITED**. Establishing or participating in a site will be considered a violation of the UF Honor Code. The Honor Code states, Section 3 Violations of the Student Honor Code Item 2, "Using any materials or resources, through any medium, which the Faculty has not given express permission to use and that may confer an academic benefit to the Student." (page 13). SI Leaders are the only individuals permitted to make GroupMe boards for BCH4024.
- **Course Communications:** Announcements are made through Canvas, and students are responsible for staying up-to-date. Dr. Douma will communicate with individuals using email to your *ufl.edu* account. We cannot use gmail, yahoo, or any other email for official business.

Each lecturer is responsible for his/her own material. Lecturers will announce their discussion hour format when their section begins. Discussion hours will provide students the opportunity to ask questions directly to the professor regarding material presented in the lectures.

- **BCH4024 Faculty Contact Information:**

- Dr. Lauren G. Douma, (“LGD”) and Course Coordinator
Office: R3-254 ARB
LDouma@ufl.edu or Lauren.Douma@medicine.ufl.edu
- DRC Accommodation Letters and Inquiries: BIOCH-MAIL-BCH4024@mail.ufl.edu
- Dr. Robert McKenna (“RMK”)
Office: LG-181 McKnight Brain Institute
rmckenna@ufl.edu
- Dr. Daniel L. Purich (“DLP”)
Office: R3-126 ARB
dlpurich@ufl.edu
- Dr. Mireille J. Aleman (“MJA”)
Office: ARB R3-116A ARB
mireille.aleman@ufl.edu

- **In-Class Recording:** Students are allowed to record video or audio of class lectures (A class lecture does NOT include assessments (quizzes, tests, exams), SI Sessions, private conversations between students in the class or between a student and the faculty or lecturer during a class session). However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited.

Specifically, students may not publish or share recorded lectures without the written consent of the instructor. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a lecture recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

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

- **Tips to Succeed in BCH4024:** Based on the experience of former BCH4024 students, we highly recommend that all students do the following if they want to be successful in BCH4024.
 - **Attend class in person.** Students who regularly attend class tend to perform significantly better than those that do not attend. Exam material includes slides and what is verbally stated in lecture.
 - **Read lecture slides before class.** You will get an idea of what will be covered in class. Also, you will not be overwhelmed by reading the slides for the first time while trying to listen to the lecturer.
 - **Review lecture slides & class notes the same day.** On the SAME day as a class, review the lecture slides once again and review the notes you took during class. There is a lot of information in this course, so you want to review a little bit every single day.
 - **Go to the professor's discussion hours.** Let us help you! The professors in this course are happy to help clarify concepts during their discussion hours. Additionally, questions asked may help you think about the course information differently. Seek out help early in the semester!
 - **Participate in the SI Program.** The SI Program is the most valuable resource for BCH4024. To make the most of your SI session, be sure to attend lecture and review the material BEFORE attending your session. Use Campuswire and Zoom “Walk-In” hours to get questions answered outside of your SI session (or if you are not in a SI group).
 - **Teach the material.** Teaching, or verbally explaining concepts, is one of the best ways to learn. Passive studying will not help you understand the material. In this course, you need to know the information AND understand the information so you can apply it to various situations.

- **Campus Resources:**

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](#).
- *University Police Department:* [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- *UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).

Academic Resources:

- *Honorlock technical support:* <https://honorlock.com/support>
- *E-learning technical support:* Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- *Career Connections Center:* Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- *Library Support:* Various ways to receive assistance with respect to using the libraries or finding resources.

**COURSE OUTLINE FOR
BCH 4024: INTRODUCTION TO BIOCHEMISTRY AND MOLECULAR BIOLOGY
FALL 2023**

* = Subject to change. Dates will be used as backup lecture days if needed (i.e., hurricane days).

<u>Date</u>	<u>Lecturer</u>	<u>Lecture Topic</u>
W 8/23	RMK	Biological Organization
F 8/25	RMK	Water, Molecular Interactions, and Acid-Base Chemistry
M 8/28	RMK	Amino Acids
T 8/29	RMK	Peptides and Peptide Bonds
W 8/30	RMK	Three-Dimensional Structure of Proteins
F 9/1	RMK	Protein Dynamics and Protein Folding
M 9/4		Labor Day (No Class)
T 9/5	RMK	Protein Separation and Purification
W 9/6	RMK	Protein Ligand Interactions
F 9/8	RMK	Enzyme Mechanism and Catalysis I
M 9/11	RMK	Enzyme Mechanism and Catalysis II
T 9/12	RMK	Enzyme Kinetics and Inhibition
W 9/13	RMK	Enzyme Regulation and Bioenergetics
F 9/15	DLP	Digestion and Amino Acid Absorption
M 9/18	DLP	Mobilization of Amino Acids
T 9/19	DLP	Ammonia Assimilation
W 9/20	DLP	Urea Cycle: Averting Ammonia Toxicity
E1	Wednesday, Sept. 20 at 8:20 PM	EXAM 1 [LECTURES FROM 8/23 to 9/13]
F 9/22	DLP	Biosynthesis of Nonessential & Specialized Amino Acids
M 9/25	DLP	Pyrimidine Nucleotide Biosynthesis & Ribonucleotide Reductase

T 9/26	DLP	Purine Nucleotide Biosynthesis, Degradation & Salvage
W 9/27	MJA	Lipids
F 9/29	MJA	Biological Membranes
M 10/2	MJA	Membrane Proteins
T 10/3	MJA	Membrane Protein Transporters
W 10/4	MJA	GPCRs
F 10/6		Homecoming (No Class)
M 10/9	MJA	Membrane Protein Signaling
T 10/10	MJA	Introduction to Metabolism
W 10/11	MJA	Glycolysis
F 10/13	MJA	Gluconeogenesis
M 10/16	MJA	Glycogen Metabolism
T 10/17		Exam Day (No Class*)
E2	Tuesday, Oct. 17 at 8:20 PM	EXAM 2 [LECTURES FROM 9/15 to 10/10]
W 10/18	MJA	Regulation of Carbohydrate Metabolism
F 10/20	MJA	Cellular Respiration
M 10/23	MJA	The Citric Acid Cycle
T 10/24	MJA	Electron Transport
W 10/25	MJA	Oxidative Phosphorylation
F 10/27	MJA	Introduction to Lipid Metabolism
M 10/30	MJA	Ketones and Fatty Acid Synthesis
T 10/31	MJA	Regulation of Fatty Acid Metabolism
W 11/1	MJA	Cholesterol Synthesis and Transport

F 11/3 LGD DNA Structure and Genome Organization
M 11/6 LGD DNA Replication
T 11/7 LGD DNA Replication
W 11/8 LGD Prokaryotic Transcription and Gene Regulation

F 11/10 Veteran's Day Observed (No Class)

M 11/13 Exam Day (No Class*)

E3 Monday, Nov 13 at 8:20 PM EXAM 3 [LECTURES From 10/11 to 11/6]

T 11/14 LGD Prokaryotic Transcription and Gene Regulation
W 11/15 LGD Eukaryotic Transcription and Gene Regulation
F 11/17 LGD Eukaryotic Transcription and Gene Regulation
M 11/20 LGD Post-transcriptional RNA Processing
T 11/21 LGD Translation

W 11/22 – F 11/24 Thanksgiving Break (No Class)

M 11/27 LGD Translation
T 11/28 LGD Molecular Biology Techniques
W 11/29 LGD DNA Damage & Repair
F 12/1 LGD DNA Damage & Repair
M 12/4 LGD Signal Transduction & Cell Cycle Control
T 12/5 LGD Cancer Biology
W 12/6 LGD Cancer Biology

E4 Wednesday, Dec. 13 at 7:30 AM EXAM 4 [LECTURES FROM 11/7 to 12/6]