BCH5413 – Eukaryotic Molecular Biology and Genetics
Distance Learning Section – Fall 2024

Coordinator: Dr. Deborah Smith
Online Instructor
Email: dsmith43@ufl.edu
Office hours: Zoom by appointment using bookings
Biochemistry Office: Academic Research Building (ARB) R3-234
Biochemistry Phone: (352)294-8404

Course Professors: Recorded lectures are delivered by seven University of Florida Professors.

Dr. Michelle Gumz
Associate Professor
Dept of Physiology & Aging

Dr. Nancy Denslow
Professor
Dept. Veterinary Medicine

Dr. Lauren Douma
Assistant Professor
Dept. Biochemistry & Molecular Biology

Dr. Jianrong Lu
Associate Professor
Dept. Biochemistry & Molecular Biology

Dr. Ming Xie
Assistant Professor
Dept. Biochemistry & Molecular Biology

Dr. Melike Caglayan
Assistant Professor
Dept. Biochemistry & Molecular Biology

Dr. Deborah Smith (Course Coordinator)
Instructional Assistant Professor
Dept. Biochemistry & Molecular Biology

Please Note that for the distance learning course all content related questions are directed to Dr. Smith and the Graduate Assistants.

Course Objectives

- Identify and describe the fundamental principles of molecular biology and genomics.
- Interpret experiments that demonstrate the mechanisms of fundamental molecular processes.
- Develop skills in critical thinking and communication through the analysis and discussion of the basic processes of cells.
- Recognize the connection between molecular processes of cells and their impact on human health

Prerequisites: A working knowledge of basic biochemistry. *We do not recommend this course for students who have not had an introductory course in molecular biology* (e.g., BCH 4024 or its equivalent). **BCH 5413 is a prerequisite for BCH 6415, Advanced Cellular & Molecular Biology.**

Necessary Time Commitment and Time Management: As a distance learning class, it is expected that each student manages his/her own time. Recognize, however, the BCH5413 is considered a rigorous course and will require a substantial and diligent time commitment to do well. The on-campus course is a three-hour per week lecture course. University of Florida guidelines recommend three (3) hours of study for each one (1) hour of lecture to do well. Students in the distance learning course should therefore set aside enough time each week to listen to at least three hours of lecture, take notes, study, and prepare for quizzes and exams. There is a calendar available in the class introductory information and announcements will be made to assist you in organizing your time.

Recommended Textbooks: There are two textbooks recommended as readings for the course. All lecture slides and supplemental instructional material will be posted on the UF Canvas website under BCH 5413 at the Academic Technology web site (http://lss.at.ufl.edu/) and will provide all of the information required for the course. These readings provide an additional resource to assist you in understanding the concepts covered in the lecture.

- ***Molecular Biology*, by R.F. Weaver, 5th Edition, 2012.** The textbook is optional but supplies important information that can facilitate learning the key concepts for the course. Reading assignments for the first two sections of the course refer to this edition of the textbook.
- ***Molecular Cell Biology* by Lodish et al, 6th (2008) or 7th (2013) edition.** This textbook is also optional. Readings for the last section of the course refer to this textbook.

Canvas 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: The course content is delivered as a series of recorded lectures by seven University of Florida Professors. Each lecture is accompanied by a set of review questions. All lectures are available from the beginning of the semester, but the graded assignments follow a set schedule. There is a recommended lecture schedule available in the introductory module to assist you in aligning the lectures with the graded assignments and your own circumstances. The lectures and review questions provide all of the information required for the graded portions of the course, although the optional textbooks can provide background information to assist you in understanding the material.

Grading Policy: Grades will be determined by the total points from all four (4) exams, the top seven (7) quiz scores, and seven (7) graded discussions Points are distributed as follows:

Assignment Type	**Points**	**Percentage of Final Grade**
Homework	60	10%
Quizzes	105	20%
Exams	400	70%
Total	**565**	**100%**

The default grading scale for the course is A ≥ 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 ≤ 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.

This is a graduate level course and therefore, the letter grades are assigned on a scale based upon the performance for the entire section. To make the grading process more transparent and allow students to assess their performance during the course, you will be provided with an approximate grading scale after each individual exam. However, be mindful that your final grade is determined by the cumulative total of all four exams, seven quizzes and four discussions, and is affected by the distribution of final scores for the entire class. In determining the final grade, and effort will be made to avoid having a small difference in points determining a higher or lower grade. Thus, a difference of one or two points on any single exam is unlikely to affect your final grade. Information on the UF graduate school grading policy is available at: https://gradcatalog.ufl.edu/graduate/regulations/.

Assignment Descriptions:

PERUSALL REVIEW QUESTIONS (60pts):

- There is an introductory syllabus assignment (4pts) that must be completed and cannot be dropped.
- There eight review questions assignments worth 8 points each. These assignments cannot be made up, but one score will be dropped.
- Perusall review questions for the next section will open after the previous exam ends and will close at 11:59pm two days before the matching quiz. That provides one extra day for graduate assistants to respond to any final comments and questions.
- You earn credit towards the point value by engaging with the assignment in the following ways:
    - Providing high quality answers to the review questions, or questions posed by your classmates.
        - You will receive most of the credit for this action.
        - Keep in mind that your answers need to be dispersed throughout the assignment. (Do not answer the first five questions on the first page, answer one question on each page)
        - You will NOT receive credit for answering the same question as a classmate unless you add to the answer. Perusall may give you credit automatically, but I will do my best to delete credit for any repeat answers.
    - Returning to the assignment multiple times (at least 5)
    - Engaging with the assignment for a total of 20 minutes or more. Keep in mind that you must be engaging with the assignment, you can't just open it and go do something else for 20 minutes.
    - Upvoting classmate answers that were helpful to you or by being upvoted by a classmate (at least 5 times total).
- You will see your score go up as you engage with the material, but your score will not go above 8pts. You can, however, continue to engage as much as you would like.
- When you open Perusall through canvas, you will find additional introductory information.
- If you would like a response, or have a question about a classmate response, you will need to tag me so I know to take a look.

PERUSALL NOTES (No credit):

- In addition to the review questions, I have posted the ppt slides for each lecture in Perusall.
- This is a space where you can ask questions and make helpful comments about each lecture.
- If you would like a response to anything here, you will need to tag me so I know to respond.

QUIZZES (105pts):

- There will be eight (8) open book quizzes in this course. Quizzes cannot be made up, but one score will be dropped.
- Quizzes will be administered according to the course schedule. Each quiz will cover only the material within the associated section of lectures. Quizzes are not cumulative.
- Quizzes are **75 minutes long** and must be completed within one continuous 75-minute window once the quiz is started. The exam will consist of a combination of self-graded questions (multiple choice, select all that apply, matching, etc). You **are allowed** to use your book, notes, and other resources, but no individuals during the quizzes. You **do not** have to schedule quizzes with honorlock. If you have listened to the lecture, taken notes and are organized at the time of the quiz, you should do well. Quizzes will be available 8am EDT on the opening date until 11:59pm EDT on the closing date. You are free to take the quiz anytime within that time frame.

EXAMS (400pts): There will be four (4) exams in this course.

- The exams will be held according to the course schedule. Exams will cover material within the associated lectures. The exam will consist of a combination of self-graded questions (multiple choice, select all that apply, matching, etc). The exams are not cumulative. Each exam is worth 100pts.

- Exams will be administered using an online proctoring service, HonorLock. Note that this service requires a computer that is connected to the interned and has a web-cam; ***the web-cam is required***. You will find instructions and a practice HonorLock Quiz (no point value) at the end of the modules in canvas. Make sure to read the instructions and take the practice quiz well before exam 1. ***The exam will not be reopened for technical difficulties!*** Exams will be available from 8:00AM EDT until 11:59pm EDT the following evening. It is anticipated that this schedule will provide sufficient latitude to meet the demands of varying student schedules and different time zones. Exams are 2 hours long and must be completed within one continuous 2-hour window once the exam is started.
- **Make-up exams**. Every student is expected to complete each exam within the posted time frame and within the time allotted. Exceptions will be made for true emergencies. Written documentation is required for such circumstances and must be approved by Dr. Smith in advance of the exam.
- Students requesting special-needs classroom accommodations must first register with the Dean of Students Office, which will provide documentation to the student, who then must provide this documentation to the course coordinator in the first week of the course.

General Information

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.

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 asynchronous course, there is no attendance policy. However, students are expected to keep up with the lectures schedule and complete all assignments as scheduled. 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

BCH 5413 – Class Schedule – Fall 2024

Lecture	Topic	Instructor
1	DNA & RNA Structure	Dr. Deborah Smith
2	Chromatin & Chromosomes	Dr. Deborah Smith
3	Blotting	Dr. Michelle Gumz
4	PCR & Microarrays	Dr. Michelle Gumz
Quiz 1	**Lectures 1 – 4 Opens 8:00am on Friday August 30th through 11:59pm on Saturday August 31st**	
5	Cloning I – Vectors, cDNA	Dr. Michelle Gumz
6	Cloning II - Genomic	Dr. Michelle Gumz
7	DNA Sequencing	Dr. Deborah Smith
8	Site Directed Mutagenesis	Dr. Lauren Douma
9	Recombinant Protein Expression	Dr. Michelle Gumz
Quiz 2	**Lecture 5 – 9 Opens 8:00am Tuesday Sept 10th through 1:59pm on Wednesday Sept 11th**	
Exam 1	**Lecture 1 – 9 Opens 8:00am on Friday Sept 13th through 11:59pm on Saturday Sept 14th**	
10	Genome Manipulation I	Dr. Deborah Smith
11	Genome Manipulation II	Dr. Deborah Smith
12	Prokaryotic Transcription I	Dr. Lauren Douma
13	Prokaryotic Transcription II	Dr. Lauren Douma
Quiz 3	**Lecture 10 – 13 Opens 8:00am Sunday Sept 22nd through 11:59pm on Monday Sept 23rd**	
14	Eukaryotic Transcription I	Dr. Deborah Smith
15	Eukaryotic Transcription II	Dr. Deborah Smith
16	Eukaryotic Transcription III	Dr. Deborah Smith
17	RNA Processing I	Dr. Ming Xie
18	RNA Processing II	Dr. Ming Xie
Quiz 4	**Lecture 14 – 18 Opens 8:00am on Thursday Oct 3rd through 11:59pm on Friday Oct 4th**	
Exam 2	**Lectures 10 – 18 Opens 8am on Saturday Oct 6th through 11:59pm on Sunday Oct 7th**	
19	Translation I	Dr. Nancy Denslow
20	Translation II	Dr. Nancy Denslow
21	Translation III	Dr. Nancy Denslow
22	Translation IV	Dr. Nancy Denslow
23	RNA-mediated Gene Regulation	Dr. Lauren Douma
Quiz 5	**Lecture 19 – 22 Open 8:00am on Friday Oct 18th through 11:59pm on Saturday Oct 19th**	
24	Epigenetics I	Dr. Jianrong Lu
25	Epigenetics II	Dr. Jianrong Lu
26	DNA Replication I	Dr. Ming Xie
27	DNA Replication II	Dr. Ming Xie
28	DNA Replication III	Dr. Ming Xie
Quiz 6	**Lectures 23 – 28 Open 8:00am on Wednesday Oct 30th through 11:59pm Thursday Oct 31st**	
Exam 3	**Lectures 19 – 28 Open 8:00am on Sunday Nov 3rd through 11:59pm on Monday Nov 4th**	
29	DNA Repair Mechanisms I	Dr. Melike Caglayan
30	DNA Repair Mechanisms II	Dr. Melike Caglayan
31	DNA Double Stranded Break Repair and Recombination	Dr. Jianrong Lu
32	Cancer - Cell Cycle I	Dr. Jianrong Lu
33	Cancer - Cell Cycle II	Dr. Jianrong Lu
Quiz 7	**Lectures 29 – 33 Open 8:00am on Friday Nov 15th through 11:59pm on Saturday Nov 16th**	
34	Cancer - Signal Transduction I	Dr. Jianrong Lu
35	Cancer - Signal Transduction II	Dr. Jianrong Lu
36	Cancer – Tumor Viruses & Oncogenes	Dr. Jianrong Lu
37	Cancer – Tumor Suppressors	Dr. Jianrong Lu
38	Cancer – Chromosome Abnormalities	Dr. Jianrong Lu
39	Cancer – Cancer Hallmarks	Dr. Jianrong Lu
Quiz 8	**Lectures 34 – 39 Open 8:00am Thursday Dec 5th through 11:59pm Friday Dec 6th**	
Exam 4	**Lectures 29 – 39 Open 8:00am on Sunday Dec 8th through 11:59pm on Monday Dec 9th**	