

BCH 5413 – Syllabus and Class Schedule -- Fall 2020

Eukaryotic Molecular Biology and Genetics

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This course is designed for graduate or advanced undergraduate students desiring a higher-level survey course in molecular biology that is beyond an introductory course. Lectures and discussions will emphasize modern molecular, biochemical, and genetic approaches to solving problems of current interest in molecular biology. Students should have a working knowledge of introductory molecular biology such as that covered in Lehninger's Principles of Biochemistry; or Mathews & Van Holde, Biochemistry, etc. *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.**

CREDIT: Three (3) hrs

TEXTBOOK: *Molecular Biology*, by R.F. Weaver, 5th Edition, 2012. Reading assignments refer to this edition of the textbook. 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/>).

LECTURES: Due to the coronavirus pandemic, the on-campus version of this course is being held via zoom. You will have the unique opportunity to attend the live lecture being held according to the schedule below, typically MWF from 1:55 PM – 2:45 PM. ***You are not required to attend!*** All lectures will be recorded and posted to the canvas webpage as they become available.

WEB PAGE: All lecture notes, lecture videos, announcement, and supplemental instructional material will be posted on the UF Canvas website under “BCH5413: at the academic technology website (<http://lss.at.ufl.edu/>). The course is organized into three units under the *modules* tab in canvas. Each unit is further divided into individual lectures. Each lecture will consist of a .pdf file of the PowerPoint slides used in the lecture and a video recording of the lecture. The .pdf file will be posted prior to the scheduled time for the lecture (see below) and the recording will be posted as soon as it becomes available. At the end of each unit, a set of review questions for the exam will be provided. Please note that the exams are NOT cumulative.

Please note that all course content and lecture materials are legally the intellectual property of the individual course faculty members and the University of Florida. The materials for the course are only available at the UF “Canvas E-learning site”.

ONLINE Q&A HELP: Throughout the semester, students may submit written questions on the lecture material under the *discussion* link on the course website in Canvas. For each unit, there will be two discussion threads. The first discussion thread is “Unit # - TA”. Newly submitted questions will be answered online in writing by our teaching assistant (TA) Chris Fields (chr21711@ufl.edu), in a timely manner. Only questions pertaining to lecture content associated with the next exam will be answered. The questions and answers will be available to the entire class by clicking on the *discussion* link for each unit. The TA will answer as many questions as possible in a one-hour session each day. The day prior to each exam, the TA will answer submitted questions for up to two hours. Additionally, exam study questions are available at the end of each unit module. The TA will answer questions that pertain to the study guide in the unit discussion. The second discussion thread is “Unit # - Students”. Use this discussion thread for questions or discussion of topics between students.

This discussion thread will be monitored and the TA or course coordinator may comment for direction and/or clarifications.

How to use the Discussion for Q&A: Under the Discussion link and the relevant Unit #, click on “reply”, then type your question in the indicated box; be sure to click on “Post Reply” to submit the question. The TA will then answer all question from that session by replying. For a new question, again click on “reply” immediately under the unit # discussion heading.

QUIZZES: There will be **six (6) quizzes** in this course. Quizzes will be administered roughly every two weeks and according to the schedule below. Each quiz will cover only the material within the associated section of lectures. Quizzes are not cumulative.

Quizzes are **one hour long** and must be completed within a continuous 1-hour window once the quiz is started. Quizzes are completely multiple choice and are aimed at keeping you on task with the course and improving your overall grade. You **are allowed** to use your book and notes 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 for the entire week leading up to the due date and you are free to take the quiz anytime within that time frame.

Quizzes are worth a total of 100pts, 20pts each with the lowest score dropped.

EXAMS: There will be three (3) exams in this course. The exams will be held according to the schedule below (Oct 8, Nov 12, and Dec 17). Exams will cover material within the associated lectures. The exam will consist of a combination of multiple choice and short answer questions. The third exam is 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 internet 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 Eastern Standard Time until 4:00AM EST the following morning. 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.

There will be **NO MAKE-UP EXAMS** in this course. Every student is expected to complete each exam only on the scheduled day during the posted time frame and within the time allotted. The only exception will be for true medical emergencies, and written documentation from a physician, hospital, etc. will be required for such circumstances. 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.

GRADING: Grades will be determined entirely by the total points from all three (3) exams and the top five (5) quiz scores. Because this is a graduate level course, the average for each exam will be a “B”. To make the grading process more transparent and allow students to assess their performance during the course, we will provide an approximate grading scale after each individual exam. However, be mindful that your final grade is determined by the cumulative total of all three exams and five quizzes and is affected by the distribution of final scores for the entire class. In determining the final grading curve for the entire course, 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 UF grading policy is available at: <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>.

Final grades for the course are accessible at One.UF; we DO NOT post final grades on the Canvas website.

NECESSARY TIME COMMITMENT AND MANAGEMENT: As a distance learning class, it is expected that each student manages his/her own time. Recognize, however, the BCH5413 is considered a demanding 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 three hours of lecture, take notes, study, and prepare for quizzes and exams.

CONTACT INFORMATION: For any communication with the course coordinator and/or the TA, please put BCH5413 in the subject line to help ensure your message is not overlooked.

- For questions regarding course organization and operation, including exams and grades should be directed to the course coordinator: **Deborah Smith** at dzies@ufl.edu.
- For questions regarding course content and clarification, please use the discussion link on canvas first, so all students may see the questions and response. If additional help is needed then contact the TA: Chris Fields at chr21711@ufl.edu.

COURSE SCHEDULE

Reminder: The on-campus version of this course is being held via zoom. You have the unique opportunity to attend the live lecture being held according to the schedule below, typically MWF from 1:55 PM – 2:45 PM. *You are not required to attend!* All lectures will be recorded and links will be posted to your canvas webpage as they become available. *All times are Eastern Standard Time.*

<u>DATE</u>	<u>DAY</u>	<u>TOPIC</u>	<u>INSTRUCTOR</u>
Aug. 31	Mon	(1) DNA/RNA Structure	Dr. Smith
Sep. 2	Wed	(2) Chromatin Structure; DNA-Prot Interacts.	Dr. Smith
4	Fri	(3) DNA/RNA Blotting	Dr. Gumz
7	Mon	NO CLASS – LABOR DAY	
9	Wed	(4) PCR; Arrays	Dr. Gumz
11	Fri	(5) Cloning I – Vectors, cDNA	Dr. Gumz
14	Mon	(6) Cloning II – Genomic	Dr. Gumz
16	Wed	(7) DNA Sequencing	Dr. Smith
Quiz 1		covers above lectures (1 – 7)	opens Thursday Sept 17 at 8am closes Wednesday Sept 23 at 11:58pm
18	Fri	(8) Site-directed mutagenesis	Dr. Douma
21	Mon	(9) Recombinant Protein Expression	Dr. Gumz
23	Wed	(10) Genome Manipulation, Transgenics, Cloning I	Dr. Smith
25	Fri	(11) Genome Manipulation, Cloning II	Dr. Smith
28	Mon	(12) Prokaryotic Transcription I	Dr. Jenquin
30	Wed	(13) Prokaryotic Transcription II	Dr. Jenquin
Quiz 2		covers lectures (8 – 13)	opens Thursday Sept 31 at 8am closes Wednesday Oct 7 at 11:58pm
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Oct. 2	Fri	NO CLASS - HOMECOMING	
5	Mon	(14) Eukaryotic Transcription I	Dr. Jenquin
7	Wed	(15) Eukaryotic Transcription II	Dr. Jenquin
EXAM 1		Thursday October 8th (Lectures 1-13)	HonorLock
9	Fri	(16) Eukaryotic Transcription III	Dr. Jenquin
12	Mon	(17) Epigenetics I	Dr. Lu
14	Wed	(18) Epigenetics II	Dr. Lu
16	Fri	(19) RNA Processing I	Dr. Xie
19	Mon	(20) RNA Processing II	Dr. Xie
Quiz 3		covers above lectures (14 – 20)	opens Tuesday Oct 20 at 8am closes Monday Oct 26 at 11:58pm
21	Wed	(21) Translation I	Dr. Denslow
23	Fri	(22) Translation II	Dr. Denslow
26	Mon	(23) Translation III	Dr. Denslow
28	Wed	(24) Protein Transport/Modifications	Dr. Denslow
30	Fri	(25) RNA-mediated Gene Regulation	Dr. Gumz
Nov. 2	Mon	(26) DNA Replication I	Dr. Xie
4	Wed	(27) DNA Replication II	Dr. Xie
6	Fri	(28) DNA Replication III	Dr. Xie

Quiz 4

covers above lectures (21 – 28)

opens Saturday Nov 7 at 8am
closes Friday Nov 13 at 11:58pm

9 Mon (29) DNA Repair I Dr. Caglayan

11 Wed **NO CLASS – VETERAN’S DAY****EXAM 2 Thursday November 12th (Lectures 13 – 28)****HonorLock**

13 Fri (30) DNA Repair II Dr. Caglayan

16 Mon (31) DNA DSB Repair and recombination Dr. Lu

18 Wed (32) Cancer – Cell Cycle I Dr. Lu

20 Fri (33) Cancer – Cell Cycle II Dr. Lu

Quiz 5 covers above lectures (29 – 33)opens Saturday Nov 21 at 8am
closes Friday Nov 27 at 11:58pm

23 Mon (34) Cancer – Signal Transduction I Dr. Lu

25, Wed **NO CLASS – THANKSGIVING HOLIDAY**27 Fri **NO CLASS – THANKSGIVING HOLIDAY**

30 Mon (35) Cancer – Signal Transduction II Dr. Lu

Dec. 2 Wed (36) Cancer – Tumor Viruses & Oncogenes Dr. Lu

4 Fri (37) Cancer – Tumor Suppressors Dr. Lu

7 Mon (38) Cancer – Chromosomal Abnormalities Dr. Lu

9 Wed (39) Cancer – Cancer Hallmarks Dr. Lu

Quiz 6 covers above lectures (34 – 39)opens Thursday Dec 10 at 8am
closes Tuesday Dec 15 at 11:58pm**EXAM 3 Tuesday Dec 15th (Lectures 29 – 39)****HonorLock**