

BCH 5413 ONLINE – Syllabus and Class Schedule -- Fall 2019

Eukaryotic Molecular Biology and Genetics

Drs. Nancy Denslow, Michelle, Gumz, Jianrong Lu, Amanda Welch,
and Thomas Yang (Course Coordinator)

This course is designed for graduate 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 introductory molecular biology (e.g., BCH 4024 or its equivalent).*

CREDIT: Three (3) hrs.

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

WEB PAGE: All lecture notes, lecture videos, announcements, supplemental instructional material, etc. will be posted on the UF Canvas website under “BCH 5413” at the Academic Technology web site (<http://lss.at.ufl.edu/>). The course material is organized into individual lectures under the **Modules** link in Canvas. Each Module corresponds to one lecture in the syllabus. All of the materials for each individual lecture (videos and handouts) are listed and available under the lecture title in *Modules*. The PowerPoint slides used in each lecture will be available for downloading as a PDF. All lectures and handouts for the entire course will become available at 8 a.m. on the first day of class so that students can proceed through the course at their own pace. The lecture schedule provided below is the recommended order and pacing for viewing lecture videos and also indicates the lectures covered by each scheduled exam. The exams are *not* cumulative and cover only the material since the previous exam. You will notice that the final nine lectures in the course are on the topic of cancer. These lectures are designed to integrate principles of molecular biology with those of cell biology and genetics in the context of an important human disease.

LECTURE NOTES: ALL faculty lecture notes for this course are available **ONLY** at the UF "Canvas E-Learning" site. All course-related files can also be found there. There is **NO** other approved course package.

Also, please be aware that all course content and lecture materials are legally the intellectual property of the individual course faculty members and the University of Florida.

ONLINE Q&A HELP SESSIONS: Each week throughout the semester, students may submit written questions on the lecture material under the **Discussion** link on the course website in Canvas. Every Monday throughout the semester, newly submitted questions will be answered online in writing by our teaching assistant (TA), **Christopher Fields** (chr21711@ufl.edu). Only questions pertaining to lecture content associated with the next exam will be answered during each help session. The questions and answers will be posted under the **Discussion** link for viewing by the entire class until the next exam. The TA will answer as many questions as he/she can in one hour per day. If the number of questions exceeds one hour, the TA will select questions to be answered based on the general relevance and interest to the entire class. In addition, the day prior to each exam, the TA will answer submitted questions for up to 2 hours. Also, study questions are available under the **Modules** link and located immediately after the final lecture covered by each exam (in files labeled “Exam 1 Study Questions”, “Exam 2 Study Questions”, etc.). The study questions are intended as a study guide, *not necessarily as sample exam questions*. The TA will also answer questions that pertain to the study questions for the next exam during the online Discussions. For each exam, a heading under the Discussion link entitled “Questions for TA’s” should be used for submitting questions. Please reserve this heading only for Q & A with the TA and not use this for discussions among students. Discussions among students should use different and separate headings.

How to use the Discussion for Q&A: Under the *Discussion* link and the relevant “Exam #”, 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 questions from that session by *Replying*. For a new question, again click on “Reply” immediately under the “Exam # Q&A Session” heading and proceed as just described.

EXAMS AND GRADING: There will be **three (3) exams** in this course. Exams will be held (see Lecture Schedule below) on **Wed Sept 25**, **Wed Oct 30**, and **Thurs Dec 5** (final exam). NOTE: The final examination is also **NOT** cumulative. Grades in the course are determined entirely by performance on these three exams.

Examinations will be administered using an on-line proctoring mechanism through **Proctor U** (see below). We have opened up the time period from **8 AM Eastern Time to 4:00 am the next day (i.e., 1 AM Pacific Time)** for tests to be administered on the indicated dates. It is anticipated that this exam schedule will provide sufficient latitude to meet the demands of varying student schedules and different US time zones. Note however, the exams must be completed during this time period. Exams are 2 hrs. long and must be completed within a continuous 2 hour window once the exam is started. Exams will consist of both multiple choice and short essay questions.

Be sure to sign in with ProctorU to take the exam with sufficient time to complete it before the testing window closes. Be sure to read carefully the details of taking exams through ProctorU and plan well ahead of the exam dates. *Please note that all exams must be **completed** by the deadline of the exam date.* No time extensions after the closing time will be granted. Therefore, be sure to allot at least 30 min. *before the exam* to sign in and set-up for the exam with ProctorU. To ensure students will have sufficient time to complete the exam after signing in with ProctorU, the **deadline for signing in with ProctorU is 9:30 PM Pacific Time** on the day of the exam (**i.e., 12:30 AM the next day Eastern Time**). Be aware that on some exam dates, particularly for the Final Exam, the wait time for ProctorU can be unexpectedly long so it is important to allow time for unanticipated delays. Also, be sure to register with ProctorU well before the first exam.

Distance online examinations will be administered using ProctorU (www.proctoru.com). We have included a PDF file on Canvas explaining the process of signing up for ProctorU (under the *Syllabus* link). Note that this on-line proctoring service requires a computer that is connected to the internet and has a web-cam; **the web-cam is required**. Please be aware that you must be in contact and continuously monitored by ProctorU throughout the entire time you are taking the exam. If contact and monitoring by ProctorU is broken anytime during the exam, or before submitting the exam on Canvas, this is potential grounds for dismissal from the course. So be sure that you have a reliable internet and webcam connection while taking each exam; **a reliable internet connection is a requirement for this course and entirely the responsibility of the student**. Failure of an internet connection at any time during an exam is NOT an acceptable condition for retaking an exam.

The three 2 hr. examinations are each worth one hundred (100) points, with a course total of three hundred (300) points. **Students' final letter-grades will be determined SOLELY on scores for these exams.** Exams will cover the material discussed in the lecture videos, the assigned reading from the textbook, and any assigned supplementary material. A more detailed description of exams and grading criteria is available at the Canvas E-Learning site under the *Syllabus* link. 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.

There will be **NO MAKE-UP EXAMS** in this course. Every student is expected to complete each exam only on the scheduled date during the time window 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 accommodation 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.

Necessary Time Commitment and Management: As a distance learning class, it is expected that each student manages his/her own time. Recognize, however, that BCH 5413 is regarded as a demanding rigorous course and will require a substantial and diligent time commitment to do well. On campus, BCH 5413 is a 3 lecture/week course; such a time commitment should be similar for distance learning students.

CONTACT INFORMATION: Questions about course organization and operation, including exams and grades, should be directed to **Dr. Yang** via email at tpyang@ufl.edu; other questions may be directed to our TA **Christopher Fields**. Please put “**Online BCH5413**” in the subject line of the email so your email does not get overlooked.

COURSE INSTRUCTORS: Help is available by email.

Dr. Jianrong Lu (Associate Course Coordinator) - jrlu@ufl.edu

Dr. Thomas Yang (Course Coordinator) - tpyang@ufl.edu

Christopher Fields (TA) - chr21711@ufl.edu

LECTURE & EXAM SCHEDULE

<u>Lecture No.</u>	<u>TOPIC</u>	<u>INSTRUCTOR</u>
1	DNA/RNA Struc	Dr. Yang
2	DNA/RNA Blotting	Dr. Gumz
3	PCR; Arrays	Dr. Gumz
4	Cloning I – Vectors, cDNA	Dr. Gumz
5	Cloning II – Genomic	Dr. Gumz
6	Site-Directed Mutagenesis	Dr. Welch
7	Recombinant Protein Expression	Dr. Gumz
8	DNA Sequencing	Dr. Yang
9	Genome Manipulation, Transgenics, Cloning I	Dr. Yang
10	Genome Manipulation, Cloning II	Dr. Yang
11	Chromatin Structure; DNA-Prot Interacts.	Dr. Yang
12	DNA Replication I	Dr. Yang
13	DNA Replication II	Dr. Yang
14	DNA Replication III	Dr. Yang
EXAM #1	Wed Sept 25 (Lectures #1 thru #14)	Proctor U
15	Prokaryotic Transcription I	Dr. Yang
16	Prokaryotic Transcription II	Dr. Yang
17	Eukaryotic Transcription I	Dr. Yang
18	Eukaryotic Transcription II	Dr. Yang
19	Eukaryotic Transcription III	Dr. Yang
20	Epigenetics I	Dr. Yang
21	Epigenetics II	Dr. Yang
22	RNA Processing I	Dr. Yang
23	RNA Processing II	Dr. Yang
24	Translation I	Dr. Denslow
25	Translation II	Dr. Denslow
26	Translation III	Dr. Denslow
27	Protein Transport/Modifications	Dr. Denslow
EXAM #2	Wed Oct 30 (Lectures #15 thru #27)	Proctor U
28	DNA Repair I	Dr. Lu
29	DNA Repair II	Dr. Lu
30	DNA Recombination I	Dr. Lu
31	DNA Recombination II	Dr. Lu
32	RNA-mediated Gene Regulation	Dr. Gumz
33	Genomics & The Encode Project	Dr. Yang
34	Cancer – Cell Cycle I	Dr. Lu
35	Cancer – Cell Cycle II	Dr. Lu
36	Cancer – Signal Transduction I	Dr. Lu
37	Cancer – Signal Transduction II	Dr. Lu
38	Cancer – Tumor Viruses & Oncogenes	Dr. Lu
39	Cancer – Tumor Suppressors	Dr. Lu
40	Cancer – Chromosomal Abnormalities	Dr. Lu
41	Cancer – Cancer Hallmarks	Dr. Lu
EXAM #3	Thurs Dec 5 (Lectures #28 thru #41)	Proctor U