

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

## **Eukaryotic Molecular Biology and Genetics**

Drs. Nancy Denslow, Lauren Douma, Michelle, Gumz, Jianrong Lu, Ming Xie, and Thomas Yang (Course Coordinator)

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.**

Lectures will be held 7th period, 1:55 PM - 2:45 PM on Mondays, Wednesdays and Fridays. The room for class is **ARB R3-265**, the conference room located on the 3<sup>rd</sup> floor of the Academic Research Building in the Health Sciences Center

**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/>).

This course also offers an undergraduate section, BCH 4905. Students wishing to enroll in BCH 4905 should see Elise Feagle in the Dept. Biochemistry and Molecular Biology office (ARB R3-234) to register. Students enrolled in the graduate section of BCH 5413 will be assigned extra reading material which will be included in exams as additional questions that students enrolled in BCH 4905 will not be required to answer. Grades in both sections will be based on the same grading curve after normalizing exams scores between the two sections.

**COURSE INSTRUCTORS:** Help is available by appointment with each instructor.

**Dr. Nancy Denslow**, Bldg 471 Mowry Road, 294-4642; [ndenslow@ufl.edu](mailto:ndenslow@ufl.edu)

**Dr. Lauren Douma**, 294-5486; [lauren.douma@medicine.ufl.edu](mailto:lauren.douma@medicine.ufl.edu)

**Dr. Michelle Gumz**, CG-92B, 273-6887; [michelle.gumz@medicine.ufl.edu](mailto:michelle.gumz@medicine.ufl.edu)

**Dr. Jianrong Lu**, Cancer/Genetics Building, Room 357, 273-8200; [jrlu@ufl.edu](mailto:jrlu@ufl.edu)

**Dr. Ming Xie**, Cancer/Genetics Building, [mingyi.xie@ufl.edu](mailto:mingyi.xie@ufl.edu)

**Dr. Thomas Yang** (Course Coordinator), ARB R3-295, 392-6472; [tpyang@ufl.edu](mailto:tpyang@ufl.edu)

**Please use the email address [tpyang@ufl.edu](mailto:tpyang@ufl.edu) for general class matters**

**EXAMS & GRADING:** Grades for this course will be determined by **three (3) examinations**. The three examination periods are scheduled during the semester for **Sept. 26** (6-8 PM; R3-265 ARB), **Oct 31** (6-8 PM; R3-265 ARB), and the **Final Exam** (date/time to be determined). The final exam is **not** cumulative. All exams are 2 hrs. in length. A review session has been scheduled before each exam (see lecture schedule). All review sessions will be held in R3-265 of the ARB. Please arrange your schedules to enable you to attend these exam sessions. **There will be no make-up exams.**

## LECTURE SCHEDULE

<u>DATE</u>	<u>DAY</u>	<u>TOPIC</u>	<u>INSTRUCTOR</u>	
Aug.	21	Wed	DNA/RNA Struc	Dr. Yang
	23	Fri	DNA/RNA Blotting	Dr. Gumz
	26	Mon	PCR; Arrays	Dr. Gumz
	28	Wed	Cloning I – Vectors, cDNA	Dr. Gumz
	30	Fri	Cloning II – Genomic	Dr. Gumz
Sept	2	Mon	<b>NO CLASS – LABOR DAY</b>	-----
	4	Wed	DNA Sequencing	Dr. Yang
	6	Fri	Site-directed mutagenesis	Dr. Douma
	9	Mon	Recombinant Protein Expression	Dr. Gumz
	11	Wed	Genome Manipulation, Transgenics, Cloning I	Dr. Yang
	13	Fri	Genome Manipulation, Cloning II	Dr. Yang
	16	Mon	Chromatin Structure; DNA-Prot Interacts.	Dr. Yang
	18	Wed	Prokaryotic Transcription I	Dr. Yang
	20	Fri	Prokaryotic Transcription II	Dr. Yang
	23	Mon	Eukaryotic Transcription I	Dr. Yang
	23	Mon	<b>REVIEW SESSION for EXAM #1; 5-6 PM, R3-265 ARB</b>	
	25	Wed	Eukaryotic Transcription II	Dr. Yang
	<b>26</b>	<b>Thu</b>	<b><i>EXAM #1; 6-8 PM, R3-265; Lectures through Sept. 20</i></b>	
	27	Fri	Eukaryotic Transcription III	Dr. Yang
	30	Mon	Epigenetics I	Dr. Yang
Oct	2	Wed	Epigenetics II	Dr. Yang
	4	Fri	<b>NO CLASS - HOMECOMING</b>	-----
	7	Mon	RNA Processing I	Dr. Xie
	9	Wed	RNA Processing II	Dr. Xie
	11	Fri	Translation I	Dr. Denslow
	14	Mon	Translation II	Dr. Denslow
	16	Wed	Translation III	Dr. Denslow
	18	Fri	Protein Transport/Modifications	Dr. Denslow
	21	Mon	RNA-mediated Gene Regulation	Dr. Gumz
	23	Wed	DNA Replication I	Dr. Xie
	25	Fri	DNA Replication II	Dr. Xie
	28	Mon	DNA Replication III	Dr. Xie
	28	Mon	<b>REVIEW SESSION for EXAM #2; 5-6 PM, R3-265 ARB</b>	
	30	Wed	DNA Repair I	Dr. Lu
	31	Thurs	<b><i>EXAM #2; 6-8 PM, R3-265; Lectures through Oct. 28</i></b>	
Nov	1	Fri	DNA Repair II	Dr. Lu
	4	Mon	DNA Recombination I	Dr. Lu
	6	Wed	DNA Recombination II	Dr. Lu
	8	Fri	Genomics & The Encode Project	Dr. Yang
	11	Mon	<b>NO CLASS – VETERAN’S DAY</b>	-----
	13	Wed	Cancer – Cell Cycle I	Dr. Lu
	15	Fri	Cancer – Cell Cycle II	Dr. Lu
	18	Mon	Cancer – Signal Transduction I	Dr. Lu
	20	Wed	Cancer – Signal Transduction II	Dr. Lu
	22	Fri	Cancer – Tumor Viruses & Oncogenes	Dr. Lu
	25	Mon	Cancer – Tumor Suppressors	Dr. Lu
	27, 29	Wed/Fri	<b>NO CLASS – THANKSGIVING HOLIDAY</b>	-----
Dec	2	Mon	Cancer – Chromosomal Abnormalities	Dr. Lu
	4	Wed	Cancer – Cancer Hallmarks	Dr. Lu
		<b>TBD</b>	<b><i>Review Session &amp; EXAM #3 (FINAL)</i></b>	