

BCH 5413 – Syllabus and Class Schedule -- Fall 2017

Eukaryotic Molecular Biology and Genetics

Drs. Nancy Denslow, Michelle, Gumz, Jianrong Lu, Amanda Welch, 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 3rd 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

Dr. Michelle Gumz, CG-92B, 273-6887; michelle.gumz@medicine.ufl.edu

Dr. Jianrong Lu, Cancer/Genetics Building, Room 357, 273-8200; jrlu@ufl.edu

Dr. Amanda Welch, akwelch@gmail.com

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

Please use the email address 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. 27 (6-8 PM; R3-265 ARB), Nov 1 (6-8 PM; R3-265 ARB), and the final exam (date to be determined). The final exam (which is **not** cumulative) is scheduled by the Registrar at a time and place TBD. 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	Mon	DNA/RNA Struc	Dr. Yang
23	Wed	DNA/RNA Blotting	Dr. Gumz
25	Fri	PCR; Arrays	Dr. Gumz
28	Mon	Cloning I – Vectors, cDNA	Dr. Gumz
30	Wed	Cloning II – Genomic	Dr. Gumz
Sept 1	Fri	DNA Sequencing	Dr. Yang
4	Mon	NO CLASS – LABOR DAY	-----
6	Wed	Genome Manipulation, Transgenics, Cloning I	Dr. Yang
8	Fri	Genome Manipulation, Cloning II	Dr. Yang
11	Mon	Site-directed mutagenesis	Dr. Welch
13	Wed	Recombinant Protein Expression	Dr. Gumz
15	Fri	DNA Replication I	Dr. Xie
18	Mon	DNA Replication II	Dr. Xie
20	Wed	DNA Replication III	Dr. Xie
22	Fri	Chromatin Structure; DNA-Prot Interacts.	Dr. Yang
25	Mon	DNA Repair I	Dr. Lu
25	Mon	REVIEW SESSION for EXAM #1; 5-6 PM, R3-265 ARB	
27	Wed	DNA Repair II	Dr. Lu
27	Wed	EXAM #1; 6-8 PM, R3-265; Lectures through Sept. 22	
29	Fri	DNA Recombination I	Dr. Lu
Oct 2	Mon	DNA Recombination II	Dr. Lu
4	Wed	Prokaryotic Transcription I	Dr. Yang
6	Fri	NO CLASS - HOMECOMING	-----
9	Mon	Prokaryotic Transcription II	Dr. Yang
11	Wed	Eukaryotic Transcription I	Dr. Yang
13	Fri	Eukaryotic Transcription II	Dr. Yang
16	Mon	Eukaryotic Transcription III	Dr. Yang
18	Wed	RNA Processing I	Dr. Xie
20	Fri	RNA Processing II	Dr. Xie
23	Mon	Epigenetics I	Dr. Yang
25	Wed	Epigenetics II	Dr. Yang
27	Fri	Translation I	Dr. Denslow
30	Mon	Translation II	Dr. Denslow
30	Mon	REVIEW SESSION for EXAM #2; 5-6 PM, R3-265 ARB	
Nov 1	Wed	Translation III	Dr. Denslow
1	Wed	EXAM #2; 6-8 PM, R3-265; Lectures through Oct. 25	
3	Fri	Protein Transport/Modifications	Dr. Denslow
6	Mon	RNA-mediated Gene Regulation	Dr. Gumz
8	Wed	Genomics & The Encode Project	Dr. Yang
10	Fri	NO CLASS – VETERAN’S DAY	-----
13	Mon	Cancer – Cell Cycle I	Dr. Lu
15	Wed	Cancer – Cell Cycle II	Dr. Lu
17	Fri	Cancer – Signal Transduction I	Dr. Lu
20	Mon	Cancer – Signal Transduction II	Dr. Lu
22, 24	Wed/Fri	NO CLASS – THANKSGIVING HOLIDAY	-----
27	Mon	Cancer – Tumor Viruses & Oncogenes	Dr. Lu
29	Wed	Cancer – Tumor Suppressors	Dr. Lu
Dec. 1	Fri	Cancer – Chromosomal Abnormalities	Dr. Lu
4	Mon	Cancer – Cancer Hallmarks	Dr. Lu
6	Wed	Cancer – Overview	Dr. Lu
TBD		Review Session & EXAM #3 (FINAL)	