Summer 2018 **BIMM 100—Molecular Biology** **Andrew Cooper**

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E-mail: a5cooper@ucsd.edu (Include BIMM 100 in the subject line)
Course Meets: MTuWTh 9:30-10:50 am CENTR 105
Office Hours: Monday and Wednesday 11:00 am to 12:00 pm (or by appointment)

Course Learning Objectives:
By the end of this course, you should be able to:

1. Describe how biological information is stored and expressed.
2. Explain the difference mechanisms of gene regulation.
3. Differentiate the structure and function of different RNA molecules.
4. Compare and contrast prokaryotic and eukaryotic gene expression and regulation.
5. Apply techniques scientists use to uncover molecular processes in the cell.

Contacting Me: Please ensure that all e-mails include BIMM 100 in the subject line and if the matter requires immediate attention include URGENT in the subject line as well. If I do not respond to an e-mail within 24 hours please send it again.

Optional Text: Lodish et al. *Molecular Cell Biology* 8th edition is optional but highly recommended. It is a good reference for material that is unclear and for background information you should know from prerequisite courses. Recommended pre-reading for each lecture will be indicated in the course schedule.

TritonEd: All course related information will be posted on our TritonEd site, including lecture slides and assignments. Please check the TritonEd site and your UCSD e-mail regularly for any announcements.

Podcast: Each lecture will be podcasted.

iClickers: iClickers are required for this course. The frequency in this classroom is AB. You must register your clicker on TritonEd by Monday July 9th. Clicker participation will be counted beginning with Lecture 2 (7/3).

Instructional Assistant (IA): Aden Haskell-Mendoza email: apmendoz@ucsd.edu

Discussion Sections: Sections begin Tuesday, July 3rd. Your attendance and active participation in section will be tracked by the IA for participation points. The content will vary from meeting to meeting, however, active engagement with the material in each section is critical to developing your understanding of the lecture material.

Assignments: There will be four assignments, one assigned at the end of each week that will provide you with an opportunity to work with the material on questions similar to those you will

see on the exam. Assignments will be posted on the course website on Thursday afternoon. They will be due at the beginning of class on the following Monday. Working together on these assignments is allowed however each student must turn in answers in their own words.

Exams: The exams dates are set and will not be changed so plan your summer accordingly. Exam 1 is scheduled for July 11th in class and will cover material on Lectures 1-5. Exam 2 is scheduled for July 23rd in class and will cover material on Lectures 6-10. The Final Exam is scheduled for August 3rd (TBD 8:00-11:59 am) and will be cumulative (1/3 focus on old material and 2/3 focused on new material). If you do better on the Final than one (or both of the exams) then your Final score will replace the lower Exam score (more details below).

Regrades: If you find an error on your exam you should submit a written re-grade request, along with the exam, to the Instructor within one week of the exam being returned. In this re-grade request you should explain both the perceived error and your justification of why it is an error. No re-grades will be allowed for exams written in pencil or non-permanent ink. Students that submit an exam for regrade understand that (1) the entire exam may be re-graded and (2) the exam will be compared to a copy to ensure no alterations have been made.

Participation Points: Clicker points will be counted starting Tuesday July 3rd. For each class where you answer $\geq$75% of the questions, you will get one participation point. You do not need to get the correct answer. For a majority of clicker questions you will have to submit answers twice (once before and once after discussion) and both of these submissions are required. You will also get participation points based on attendance and active engagement in sections. Overall you need to get 85% of the total possible participation points in order to receive the full 5% participation credit. If more than 90% of the class completes the CAPE Evaluations at the end of the quarter, everyone will receive two additional participation points.

Grading: Grading in this course is on a straight point scale so in theory, every person could earn an A! You are not competing with each other for grades, so work together!

	Option 1	Option 2	Option 3
Clickers and Section Attendance	10%	10%	10%
Assignments	5%	5%	5%
Exam 1	20%	0%	20%
Exam 2	20%	20%	0%
Final	45%	65%	65%
Total	100%	100%	100%

Your final grade will be calculated using each of these possible point distributions and the one that results in the highest grade will be used.

Disability Access: Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD) which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to Faculty (please make arrangements to contact me privately) and to the OSD Liaison in the department in advance so that accommodations may be arranged. Contact the OSD for further information:

858.534.4382 (phone) osd@ucsd.edu(email) http://disabilities.ucsd.edu(website)

Title IX Compliance: The University recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a member of this community, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you want to speak confidentially you may contact the Counseling Center. The Office for the Prevention of Harassment & Discrimination (OPHD) provides assistance to students, faculty, and staff regarding reports of bias, harassment, and discrimination. OPHD is the UC San Diego Title IX office. Title IX of the Education Amendments of 1972 is the federal law that prohibits sex discrimination in educational institutions that are recipients of federal funds. Students have the right to an educational environment that is free from harassment and discrimination. Students have options for reporting incidents of sexual violence and sexual harassment. Sexual violence includes sexual assault, dating violence, domestic violence, and stalking. Information about reporting options may be obtained at OPHD at (858) 534-8298, ophd@ucsd.edu or http://ophd.ucsd.edu. Students may receive confidential assistance at CARE at the Sexual Assault Resource Center at (858) 534-5793, sarc@ucsd.edu or http://care.ucsd.edu or Counseling and Psychological Services (CAPS) at (858) 534-3755 or http://caps.ucsd.edu. Students may feel more comfortable discussing their particular concern with a trusted employee. This may be a student affairs staff member, a department Chair, a faculty member or other University official. These individuals have an obligation to report incidents of sexual violence and sexual harassment to OPHD. This does not necessarily mean that a formal complaint will be filed. If you find yourself in an uncomfortable situation, ask for help.

Academic Integrity: Students are expected to do their own work, as outlined in the UCSD Policy on Academic Integrity. Cheating will not be tolerated, and I will fail any student caught engaging in academic dishonesty. All exams will be closed-book and closed-notes, so all personal materials must be stowed under your seat. Only exams written in non-erasable pen will be considered for regrades. Exams will be photocopied for comparison with submitted regrades. Any student caught cheating on an exam will receive a failing grade for the course. They may also be suspended from UCSD.

Date	Lecture	Topic	Reading
7/2	1	Intro, Central Dogma	Figure 5.1, p.167-168
7/3	2	DNA Structure, Replication	"Structure of Nucleic Acids" (p.169) and "A Nucleic Acid Strand..." (P.170), Figure 5-32 (p. 202)
7/4	No Class	Independence Day	N/A
7/5	3	Telomeres, DNA Repair	"DNA Repair and Recombination" (p. 202) Figure 8-44 (p.348)
7/9	4	Genomes, Sequencing, PCR	"The Polymerase Chain Reaction Amplifies a..." (p.239-241), "Cloned DNA Molecules Can Be Sequenced..." (p.243-244)
7/10	5	Genes, Cloning, ncDNA	"Isolated DNA Fragments Can Be Cloned..." (p.236-237), "Most Eukaryotic Genes Contain Introns and Produce..." (p. 303)
7/11	Exam 1	Lectures 1-5	N/A
7/12	6	Mobile DNA, Transcription	Table 9-2 (p.367), "Transposable (Mobile) DNA Elements" (p.312-313)
7/16	7	Transcription, Promoters	"Transcription of Protein-Coding Genes..." (p.176)
7/17	8	mRNA Processing, Splicing	"Processing of Eukaryotic Pre-mRNA" (p.419)
7/18	9	Nuclear Export, rRNA, tRNA	"Transport of mRNA Across the Nuclear Envelope" (1st paragraph p.440), "Processing of rRNA and tRNA" (p.461)
7/19	10	Translation	"Key Concepts of Section 5.4" (p.197)
7/23	Exam 2	Lectures 6-10	N/A
7/24	11	Pro Gene Regulation	"Transcription Initiation from Some Promoters..." (p.359), "Organization of Genes Differs..." (paragraph 2 and 3 p. 179)
7/25	12	Euk Gene Regulation I	"Cytoplasmic Mechanisms of Post-transcriptional Control" (p. 445)
7/26	13	Euk Gene Regulation II	Figure 9-23 (p.379)
7/30	14	Chromatin Structure, CHIP	"Chromatin Exists in Extended and Condensed Forms" (p. 328)
7/31	15	Chromatin Remodeling	"Epigenetic Regulation of Transcription" (p.404)
8/1	16	Gene Editing	TBD
8/2	Review	In-Class Review Session	N/A
8/3	Final	1/3 Old & 2/3 New Material	N/A