Tentative SYLLABUS

BIMM 100: Molecular Biology

Spring 20 ONLINE VERSION

Instructor: Michael Burg, Ph.D. Email: mburg@ucsd.edu

Lecture ONLINE

OFFICE HOURS: ONLINE TBD

COURSE DESRIPTION

Molecular basis of biological processes, emphasizing gene action in context of entire genome. Chromosomes and DNA metabolism: chromatin, DNA replication, repair, mutation, recombination, transposition. Transcription, protein synthesis, regulation of gene activity. Prokaryotes and eukaryotes

Student Learning Outcomes:

1. Know the key concepts of the central dogma of molecular biology
2. Understand the basic levels of gene organization and control of gene expression
3. Understand some of the basic scientific techniques used to study genes, gene expression, and genetic manipulation.
4. Be able to apply molecular biology concepts to human disease and the development of therapeutics.
5. Understand the concepts of genomics, proteomics, and other-omics being used to further understand the relationship between genetic patterns and normal and abnormal functions.

RecommendedTexts, Materials, and Web-Enhancement

Optional! Lodish et al. 'Molecular Cell Biology' 7th edition, Freeman, 2012 Some nice animations and other helpful material related to the book can be found at the textbook web site: http:// bcs.whfreeman.com/lodish7e/ Lectures will be,in part based upon topics covered in these texts.These are available on reserve at Geisel Library

- All powerpoint lectures,associated handouts, announcements,and other relevant material are available on Canvas
- *Instructional Assistants/Tutors: Names,sections, and contact information will be posted on* Canvas

Important information for online class

1. Most lectures will be prerecorded and available to view in Canvas
2. Office hours and other reviews will be hosted via Zoom;these will be recorded and available on Canvas.
3. Discussion sessions/TA office hours/TA reviews will be hosted via Zoom;these will be recorded and available on Canvas.
4. **IMPORTANT: ALL EXAMS WILL BE ONLINE; THESE WILL BE SCHEDULED DURING REGULAR CLASS TIME/ASSIGNED FINAL TIMES. YOU MUST HAVE A COMPUTER WITH A GOOD/RELIABLE INTERNET SOURCE; IN ADDITION, YOU NEED A SMARTPHONE THAT MAY BE USED CONCURRENTLY WHEN TAKING THE EXAM TO ENSURE ACADEMIC INTEGRITY. SEVERAL METHODS TO ENSURE ACADEMIC INTEGRITY WHEN TAKING EXAMS WILL BE PUT INTO PLACE (DETAILS LATER).** Exams will be based upon material in class, assigned science articles.
5. **All assignments will be submitted online. Again, academic dishonesty and plagiarism (the unauthorized or uncredited use of someone else's work) will result in a grade of "F" for the assignment. Its continued practice will be reported to the appropriate deans for possible disciplinary action and may result in an "F" for the course.**

An additional **5 bonus** points will be added for a greater than 80% Cape response rate

Exams and assignments

1. **There will be two exams: a)Midterm worth 100pts and 2) final exam (worth 150pts) on the material stipulated in the study sheets, text reading, supplementary readings and videos and lectures. All exams count; You must take all exams during the scheduled times.**
2. **Exams will include both multiple choice and short free response (typed/submitted online)**
3. **In addition, there will be several other online assignments worth a total of around 120 pts(Note: late assignments will have a 10% reduction/day late)**
4. **Grading will be based upon the scale indicated below. Letter grades will be assigned as follows:**

GRADING

Your grade is based upon a percentage of the total points you accumulate during the semester.

A^+ = 99% - 100% of the total possible points
A= 90% - 98.9% of the total possible points
B^+ = 89-89.9% of the total possible points
B = 80% - 88.9% of the total possible points
C^+ = 79-79.9% of the total possible points
C = 70% -78.9% of the total possible points
D = 60% -69.9%of the total possible points
F = Less than 60% of the total possible

Tentative Lecture Schedule

WEEK	Date	Lecture Topic	Lodish Chapter
1	3/30-4/4	Introduction, Review of central Dogma	4.1-4.4
2	4/6-4/11	Introduction to cancer genetics DNA replication	4.5-4.6 + supplemental
3	4/13-4/18	DNA replication (con) DNA mutation	5.2-5.3 + supplemental
4	4/20-4/24	DNA repair/REVIEW	5.2-5.3 + supplemental
5	**4/27-5/2**	**Midterm Tue 4/28 3:30pm-5:30pm** Eukaryotic gene and chromosomal structure and function	6.1-6.2
6	5/4-5/9	Eukaryotic chromosomal structure and control of gene expression	7.5 and Supplemental
7	5/11-5/15	Transcriptional control of gene expression; Epigenetics	7.2-7.6; 7.7
8	5/18-5/22	Post-transcriptional gene control: Splicing and human disease	8.1-8.2 8.5+supplemental
9	5/25-5/29	Post-transcriptional gene control: mRNA, noncoding RNAs and translational control	8.3-8.4,5.5 + supplemental
10	6/1-6/5	Post-transcriptional gene control: Application to human disease and therapeutics	8.3-8.4,5.5 + supplemental
Final	6/6-6/12	**FINAL EXAM tbd**	**tbd**

NOTE: ALL OTHER ASSIGNMENTS/DUE DATES WILL BE LISTED ON CANVAS