Cell Biology, BIO210
Spring 2012

Lecture: MWF 11:10-12:05am, FSH201
Lab: T 9:00-11:55 *or* 1:50-4:45, FSH202 or as announced
Lab instructor: Susan Mechanic-Meyers, suem@simons-rock.edu

Instructor: Dr. Erin McMullin
Office: FSH 208
Phone: 413-528-7216
Email: emcmullin@simons-rock.edu (best way to contact me!)
Office hours: WF 10:00-11:00 or by appointment

Course Overview: Topics will include the structure, function and control of biological molecules that make up cell structures, the fundamentals of DNA, genes and gene regulation, protein synthesis and processing, and how cells communicate and are controlled. In lab we will learn skills and techniques used in cell and molecular research. The primary goal of this course is to provide a detailed understanding of the current science of cell and molecular biology. In addition you will critically read scientific literature, and collect, analyze and present data (lab reports).
Pre-requisites: Bio 100, corequisite: Chem 100 or consent of the instructor.

Required texts:
Essential Cell Biology, 3rd edition, Alberts *et al.*, Garland Science.
ISBN 978-0-8153-4129-1

Additional reading: Handouts and other reading assignments will be either given in class or posted on e-Reserves.

Evaluation

Exams (4) and cumulative final	60%	(12% each)
Current research articles (2)	10%	
Participation	05%	
Lab	25%	

Exams: This course includes four noncumulative exams and a final exam. Tests will focus on assessing background or fundamental knowledge gained primarily in lecture but may also address class discussions and readings. Exams will consist mostly of short answer and essay questions, but may include multiple choice, fill in the blank, or matching.

Current research: Every student will be required to find two relevant, recently published review or primary research articles, and provide a written 3 page summary of each article with a discussion of how it relates to topics discussed in this course. Students will provide links or PDFs for their articles, which will be posted in e-reserves for the rest of the class to read.

Participation: A portion of your final grade will be based on how actively you were engaged in this course. Minimal participation (a 'C') includes arriving on time for lecture and lab and participating in group projects. Good to excellent participation includes arriving alert and prepared for lecture and lab, participating in class discussions, asking questions in class and by email (to instructor), and otherwise contributing to this course.

Lab Component (instructor: Sue Mechanic-Meyers): A separate syllabus detailing this component will be provided in lab. **Participation in lab is mandatory for this course. Failure to pass lab will result in a failing grade for this course.**

Readings: A tentative list of readings and lecture topics is provided at the back of this syllabus. I will announce any additional readings or changes to this list throughout the semester.

Attendance: Prompt attendance is mandatory in lectures and labs. If you must miss a lecture or lab for a valid reason (illness, family emergency, religious holiday), contact me before that absence. Attendance policy:

- Arriving 5-10 minutes late for class will be counted as **½ absence**.
- Arriving 15 or more minutes late for class will be considered **an absence**.

Attendance in exams is **mandatory**. If you miss an exam due to a legitimate excuse (see above), the missing exam grade will be replaced by your score from the cumulative final (in other words your final exam score will be counted twice).

Late work: Every effort should be made to turn in work on time. In the event that an assignment is turned in late, there will be a 10% deduction from total possible points earned per day for late work.

Academic honesty

Academic dishonesty is, in most cases, intellectual theft. It includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for evaluation. This standard applies to all work ranging from lab assignments to major exams. It is unacceptable to copy work from other students, past or present. It is also unacceptable for a student to submit a report that was previously submitted/presented for a different class. Students must clearly cite any sources consulted—not only for quoted phrases but also for ideas and information that are not common knowledge. **Neither ignorance nor carelessness is an acceptable defense in cases of plagiarism.** It is the student's responsibility to follow the appropriate format for citations.

Copying answers or work from other students will result in a zero for that exam or assignment, and possible disciplinary action from the administration.

For further information, see: http://www.simons-rock.edu/campus-resources/college-offices/academic-affairs/academic-policies/

Tentative Schedule – *this will be updated as needed*:

Day		Lecture topic	Reading
M	1/21	*MLK Day, no class*	
W	1/23	Cell types & structures	CH:1
F	1/25	Biomolecules (chem. quiz due)	CH:2 39-51
M	1/28	Biomolecules	CH:2 52-65
W	1/30	Bioenergetics	CH:3 83-94
F	2/1	Bioenergetics (chem. quiz retake due)	CH:3 106-116
M	2/4	Proteins	CH:4 119-133
W	2/6	Proteins	CH:4 134-149
F	2/8	Proteins	CH:4 149-159
M	2/11	**EXAM 1**	**CH:1-4**
W	2/13	DNA & chromosomes	CH:5 169-183
F	2/15	DNA & chromosomes	CH:5 183-191 &TBA
		Break 1	
M	2/25	DNA replication	CH:6 195-203
W	2/27	DNA replication	CH:6 203-208 &TBA
F	3/1	DNA repair	CH:6 209-214 &TBA
M	3/4	DNA recombination	CH:6 215-217 &TBA
W	3/6	DNA mobile elements	CH:6 217-224 &TBA
F	3/8	**EXAM 2**	**CH:5-6**
M	3/11	Transcription	CH:7 229-237
W	3/13	RNA processing	CH:7 237-243 &TBA
F	3/15	Translation	CH:7 243-259
M	3/18	Protein processing & transport	CH:15 497-9, 502-14, 516-23
W	3/20	Control of gene expression	CH:8 267-275
F	3/22	Control of gene expression	CH:8 275-278 &TBA
M	3/25	Control of gene expression	CH:8 279-280 &TBA
W	3/27	Control of gene expression	CH:8 281-290
F	3/29	**EXAM 3**	**CH:7,8,15**
		Break 2	
M	4/8	Cell membranes	CH:11 365-374
W	4/10	Cell membranes	CH:11 374-386
F	4/12	Membrane transport	CH:12 389-402
M	4/15	Membrane transport	CH:12 402-423
W	4/17	Cell signaling	CH:16 533-544
F	4/19	Cell signaling	CH:16 544-557
M	4/22	Cell signaling, Cytoskeleton	CH:16 557-568, CH17 573-578
W	4/24	Cytoskeleton	CH:17 579-591
F	4/26	Cytoskeleton	CH:17 591-607
M	4/29	**Exam 4**	**CH: 11,12,16,17**

W	5/1	Cell cycle	CH:18 611-625
F	5/4	Cell cycle	CH:18 628-633 CH19 637-651
M	5/6	Cancer	CH:21 697-8,704-13
W	5/8	Cancer	CH:21 726-38
		FINAL EXAM TBA	