

**BSCI 330, Cell Biology and Physiology**  
**Spring 2012, Tue & Thu 9:30-10:45 am**  
**Bioscience Research Bldg 1101**  
**Drs. Kan Cao and June Kwak**

Dr. Kan Cao  
 Office: 2214 BRB  
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 Office hr: Mon 4-5 PM or by appointment  
 Lecture: Jan 26 - Spring Break

Dr. June M. Kwak  
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 Office hr: Thu 4-5 pm & by appointment  
 Spring Break - May 6

**Lab Coordinator:**

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**Graduate Teaching Assistants**

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Lab Times	Mon	Tu	Wed	Th
9 am	1109			
11 am		1102		1107
2:30 pm	1101	1103	1106	1108
6 pm		1104		

**Textbook:** Molecular Biology of the Cell B. Alberts et al., 5<sup>th</sup> Ed.

**Four pop quizzes** will be given for a total of 40 points as part of grade.

Date	#	Lecture Topic	Reading
1/26 Th	1.	Course introduction: Cells and Genomes	Ch. 1
	2.	Cell compartments and biological molecules	Ch. 2, 3, 12
	3.	Plasma membrane	Ch. 10,11
	4.	Nucleus, chromosome structure, telomeres,	Ch. 4, 12
	5.	Endoplasmic Reticulum (ER) and Golgi	Ch. 12, 13
	6.	Mitochondrial and chloroplast (recap/discussion)	Ch. 14
2/16 Th		<b>EXAM 1</b> (Lectures 1- 6) (100 pts)	
	7.	Cells obtain energy	Ch. 4,14
	8.	Cytoskeleton (1)	Ch. 16
	9.	Cytoskeleton (2)	Ch. 16
	10.	Intracellular vesicular trafficking (1)	Ch. 13
	11.	Intracellular vesicular trafficking (2)	Ch. 13
3/15 Th		<b>EXAM 2</b> (Lectures 7-12) (100 pts)	Ch. 20
3/18-25		<b>SPRING BREAK</b>	

3/27	13. Visualizing Cells I Light microscopy, Fluorescence microscopy, FRET	Ch. 9	
	14. Visualizing Cells II Confocal microscopy Use of antibody and radioisotopes	Ch. 9	
	15. Manipulating Proteins, DNA, and RNA I Cell Culture, protein purification and analysis Analyzing and manipulating DNA	Ch. 8	
	16. Manipulating Proteins, DNA, and RNA II Gene expression and function	Ch. 8	
	17. DNA, Chromosomes, DNA transposition Structure and function of DNA DNA transposon and retrotransposon	Ch. 4, 5	
	18. From DNA to protein From DNA to RNA RNA world: Small noncoding RNAs and RNAi	Ch. 6	
	19. Cell cycle I Overview of the cell cycle Cell cycle control system	Ch. 17	
4/19 Th	<b>EXAM 3</b> (Lectures 13-19) (100 points)		
	20. Cell cycle II Mitosis and Cytokinesis	Ch. 17	
	21. Transport b/n the nucleus and the cytosol & Mechanisms of cell communication I Protein import and export Telomeres and telomerase General principles of cell communication GPCR-mediated signaling	Ch. 12, 15	Ch. 12
	22. Mechanisms of cell communication II GPCRs in sensory perception Enzyme coupled cell-surface receptors	Ch. 15	
	23. Mechanisms of cell communication III & Apoptosis Regulation of blood glucose level Apoptosis Calcium signaling, NO signaling		
	*24. Mechanisms of cell communication IV & Sustainability Signaling in plants, drought and fresh water scarcity	Ch. 15, 18	
5/8	Recap/discussion of course material	Cao, Kwak	
5/14	<b>FINAL EXAM</b> (200 pts) (8:00 –10:00 AM) <u>No make up for final.</u>		

**Quizzes – no make up. For mid-term exams 1, 2 & 3 a valid reason must be provided no later than 7 days after the missed exam. Only one missed exam can be made up.**

<b>Make up exam (Cao) is oral.</b>	<b>Make up for exam 3 (Kwak) is oral.</b>
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## Prerequisites

The requirements are: Completion of BSCI105, CHEM131, and CHEM132 (with a grade of “C” or better in each case) or the equivalent. Successful completion of the prerequisite courses has been a good indicator of performance in this course.

## LABORATORY SCHEDULE AND ASSIGNMENTS

Policies applicable to the laboratory portion of BSCI330 are posted separately on the course’s Blackboard website. Please familiarize yourself with the details.

## Laboratory Manual

The laboratory manual is available online through the course’s Blackboard site. Be certain to download and print out the first laboratory exercise prior to the first lab meeting.

## COURSE GRADING

Grades will be based on a total number of points rather than on a curve.

There will be a maximum of 740 points

3 exams	100-point/each x 2 on lecture material (Cao)	200
	3 <sup>rd</sup> exam 100 pt each (Kwak)	100
1 final exam	200-point comprehensive final exam.	200
	lectures # 20-25 ~ 120 pts (Kwak)	
	lectures #13-19 ~ 30 pts (Kwak)	
	lectures #1-12 ~ 50 pts (Cao)	
4 quizzes	Given at beginning or end of lecture, 10 pts/each	40
Lab	Laboratory performance	200

No adjustments will be made before all grades are in.

## GRADE SCHEME (100 % = 740 pts)

A+ = >94.0%	C+ = 74.0–77.9%
A = 90.0–93.9%	C = 67.0–73.9%
A– = 88.0–89.9%	C– = 65.0–66.9%
B+ = 85.0–87.9%	D+ = 62.0–64.9%
B = 80.0–84.9%	D = 55.0–61.9
B– = 78.0–79.9%	F = <55.0%

## POLICIES

### Honor Code

The University of Maryland, College Park has a nationally Recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.studenthonorcouncil.umd.edu/whatis.html>.

### Academic Dishonesty

Any of the following acts, when committed by a student, shall constitute academic dishonesty:

- **Cheating**: Intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.
- **Fabrication**: Intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
- **Facilitating Academic Dishonesty**: Intentionally or knowingly helping or attempting to help another to violate any provision of this Code.
- **Plagiarism**: Intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise.

### **Missed exams/assignments**

Refer to the Undergraduate Catalog for a complete description of the university's policy on make-up examinations.

### **Use of Wireless Devices**

Wireless phones ringing in class are an annoyance. Thus, phones and other devices that make noise should be silenced during lecture, lab, and exams. Camera phones and text messaging have the potential of being used inappropriately. Students observed using such devices during exams will have their papers confiscated and forwarded to the Office of Judicial Programs for review.

### **COURSE EVALUATION**

The university has instituted an online course evaluation system for student input and teaching assessments. The system will be open in May for spring courses and accessible at: <https://www.courseevalum.umd.edu/>. It is important that we hear from you.

### **FOR SUCCESS IN THE COURSE**

Come to class and pay attention  
 Take good, neat, and complete lecture notes  
 Go over each day's lecture notes the same day  
 Read the textbook of the areas covered  
 Ask questions before or after class  
 Participate in a study group, but not for socializing  
 When you keep up with the material, and discuss it with other student(s) in the course, the material will become very familiar and relatively easy to understand.

### **FINAL NOTE**

The professors and teaching assistants are dedicated to making this course an enjoyable learning experience, and one primary goal is to provide students with an atmosphere that is conducive to learning and to stimulate students to think independently. Do not hesitate to ask questions or come to us for help. We welcome your input.