

# CELLULAR BIOLOGY 3813

Fall 2007

Sec 001 M,W 5:30-6:45 CRN 11612

Sec 901 T,Th 3:30-4:45 CRN 11451

**Instructor:** Helen Cronenberger, Ph.D.  
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Office Hours: (downtwn - FS 4.444; T,Th 10:00-10:45; Tel: 458-2573)  
(1604 - SB 3.01.39K; MW 4:00-4:45; Tel: 458-6297)  
Or by appointment

**Textbook:** The Cell, 4th Ed., Cooper and Hausman; Sinauer, 2007

**Prerequisite:** BIO 3413 (General Physiology) or BIO 3513 (Biochemistry). Concurrent enrollment in BIO 3822 is recommended.

**Course Description:** A study of molecular and organeller function and relation to living cells, environmental influences on the life of cells in a whole organism. Animations of cellular events will be utilized to enhance understanding. Study questions will be given to offer interaction activity with the material. Human cells and the human as an organism in health and in disease will be emphasized.

## **Course Objectives:**

- To understand the cell & its biochemistry as the unit of living matter
- To relate biochemical and physiological mechanisms, systems and controls in the cell's organelles and to follow the organization and flow of genetic information from DNA to proteins
- To integrate and apply all of the above in the investigation, pathology, functioning and research of normal and abnormal cells, cancers, genetic mutations, genetic deficiencies and various disease states

## **Grading:**

4 Major exams ( drop lowest, average high 3)	60%
Weekly quizzes (lowest one dropped; average remainder for)	20%
1 Final (cumulative)	20%

Letter grades will be assigned according to the following:

A = 90 - 100
B = 80 - 89
C = 70 - 79
D = 60 - 69
F = < 60

All grades will be posted on WebTV (normally within 48 hrs). Students are responsible for informing the instructor of any questions regarding grading. **Grades will be considered final one week after posting on WebCT. Thereafter no changes will be considered.**

**You will need ParSCORE forms for all quizzes and exams.**

**For weekly quizzes:** 20 answers "*PasSCORE™ QUIZ FORM*".

**For major exams:** 50 answers each side "*Compatible with Scantron 48/TSM scanners only*".

Quizzes will not be graded if answers not turned in on proper forms or if form not properly filled out (*e.g.*, name, ID, number 2 pencil and completely-filled boxes—lines through boxes are not seen by the scanner).

**GRADES WILL BE ASSIGNED ACCORDING TO THAT EARNED. A 79 AVERAGE WILL BE A GRADE OF C.** Missed Exams/Quizzes: Anyone *missing an exam or quiz* will count that as the one grade to be dropped. **THERE WILL BE NO MAKE UP EXAMINATIONS AND NO CURVE. DO NOT ASK !!**

## CLASS SYLLABUS

<u>Week of</u>	<u>Topic</u>	<u>Assigned Chapters</u>
Aug 22	Syllabus, Grading, Overview Cell	1
Aug 27	Composition of Cells/Cell Metabolism Fundamentals of Molecular Biology	2, 3 4
Sept 3	HOLIDAY 3 <sup>rd</sup> LABOR DAY Organization Genomes	5
Sept 10	<b><u>Examination I</u></b> Replication DNA	6
Sept 17	Transcription	7
Sept 24	Translation	8
Oct 1	<b><u>Examination II</u></b> The Nucleus	9
Oct 8	Protein Sorting & Transport Bioenergetics and Mitochondria	10 11
Oct 15	Cell Skeleton Plasma Membrane/ Extracellular Matrix	12 13
Oct 22	<b><u>Examination III</u></b> Extracellular Matrix	14
Oct 29	Cell Signaling	15
Nov 5	Cell Cycle	16
Nov 12	<b><u>Examination IV</u></b> Cell Death/Stem Cells	17
Nov 19	Cancer	18
Nov 26	Current Directions in Cell Biology	

**FINAL EXAMINATION:**    **Sec 001 -- Mon, Dec 10; 5:00 – 7:30**  
   **Sec 901 -- Fri, Dec 7; 10:30 – 1:00**

## **HINTS FOR STUDYING**

1. Keep up with the assignments per class period. This course will cover most of the book, and it will be very difficult to catch up after missing even a single class assignment.
2. Plan to spend at least 3 hours (most likely more) studying for every in-class hour.
3. Many weekly quiz questions will come from study questions in book or on Web CT. Only look at study questions after reading and learning material. Study questions should be used to evaluate your knowledge of the materials. Be sure to know the philosophy behind answers to the study questions as some exam questions will be reworded but based upon the study questions.
4. Read chapters before class, take notes in class, review & rewrite notes after class.
5. After reading the chapter and after the lecture, make an outline for each chapter to help organize the material.

### **I. Cell Organelles**

#### **A. Mitochondria**

##### **1. Physical structure**

##### **2. Energy generation**

#### **B. Ribosomes**

#### **C. Golgi**

6. If a particular topic is not thoroughly understood, read that material in a different text and/or surf the web ( <http://www.google.com> ) for explanatory materials. Reading the same topic from a different author's perspective helps understanding as it presents that subject matter from a different angle.
7. If something is still unclear consult instructor immediately.
8. For each chapter note (in the text) the outline at beginning, the summary of the Chapter at end of chapter and the Essential Concepts and Key Terms at end of each chapter. Legends under the diagrams are good summaries of related text material.