

**Cell Biology 6000 – Molecular and Cellular Biology I
Fall 2018**

Instructor: Dr. Karen Beningo

Office Location: 2111 Biological Sciences Building

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Class meets from 10:30 to 11:20 am M,W,F in Rm407 STAT

Office Hours: 2 to 3 pm on Mondays, or by appointment

3 Credits

Text: Alberts et al., Molecular Biology of the Cell, Sixth Edition. Students will also read and discuss selected journal articles. The journal articles will be available on the blackboard class site, along with lecture slides. **Lecture slides are provided as a convenience for taking notes, nothing more.** Every effort will be made to provide the lecture slides a day or more before class, although this is not always possible.

Objectives: The objective of the course is to gain an advanced understanding of cell biology. The course will use lectures, textbook reading and journal articles to cover major topics in modern cell biology. Student understanding will be evaluated by (1) short in class assignments, presentations or quizzes, based on the reading of the assigned articles and (2) short answer exams. For undergraduate students, the pre-requisites for this course are BIO3100 and BIO2600, with a C or better earned.

Upon completion of this course the student will be able to:

- read a primary scientific research article on any subject and define the significance, hypothesis, results and conclusions.
- present a primary research article by power point to peers.
- critique a primary scientific research article.
- articulate experimental questions on a topic in cell biology and design experiments to address these questions.
- describe in detail all cellular organelles, membranes and their organization within a cell.
- describe in detail the function of all cellular organelles.
- describe in detail fundamental cellular processes including cell division, vesicular transport and migration.
- appreciate the importance of cellular communication and the organization of cells into tissues and organs.
- identify all amino acids through single letter annotation and charge.

Exam Format: Four exams will be administered. Each exam will be worth 100 points for a total of 400. Exams will cover material from lectures based on the textbook and the articles. Exams will be cumulative, but new material will be emphasized. Questions will be primarily short essay; there may be fill-in the blank and/or matching. Each exam will also contain one interpret and design question in which an experimental result will be interpreted or the student will design an experiment. Design and interpret questions

are derived from the research articles discussed in class and are generally worth 20 points.

Journal Articles: Students will be required to read a minimum of 1 assigned journal article per topic throughout the semester. The articles will be announced in class and posted on Blackboard. Articles must be read before coming to class and the student should be prepared for discussion, presentation and/or quiz. Articles will be posted two days before they are to be discussed; this allows for selection of the most up to date literature and prevents rushing through the lecture material.

Assignments- In class, students will work in assigned groups to discuss the articles and complete an in class assignment. One member of the group may be selected by the instructor to present a figure on behalf of the group. The group assignments will be graded for a possible 10 points.

Quizzes- Over the semester, random 10 point quizzes may be administered to each individual student prior to the group discussion of an article.

Over the semester a total of 8-10 articles are scheduled for assignment or quiz. Students will be given the opportunity to drop the lowest grade resulting in a semester total of 70-90 points possible for the article assignment/quizzes.

| | | |
|-----------------|---------------------|-----------------------|
| Grading: | Exam 1 | 100 points |
| | Exam 2 | 100 points |
| | Exam 3 | 100 points |
| | Exam 4 | 100 points |
| | Quizzes and assign. | 70-90 points |
| | Total | 470-490 points |

Grading Policy: Grades are scored on a typical scale: 100-94% will receive an A, 93-90 will receive an A-, 89-87 will receive a B+, 86-84 will receive a B, 83-80 will receive a B-, 79-77 C+, 76-74 C, 73-70 C-, etc.

Please note that as a masters or doctoral student a grade below a B is considered failing. You must keep your overall GPA above 3.00.

Undergraduates will NOT be graded on a different scale than the graduate students; **this is a first semester graduate level course and taught as such.**

There will be no extra credit under any circumstances.

Exam Policy: All exams will be closed book and held in class. No electronic devices of any kind will be allowed unless indicated otherwise in advance, and cell phones and watches must be turned off. Anyone who leaves the exam room will not be allowed back in. Late-arriving students will not be allowed after the first student has left the room and will not be given extra time to complete the exam.

General Policy: **Anyone caught cheating or plagiarizing will receive a failing grade for the assignment or exam. Cheating or plagiarizing is grounds for failing the class or expulsion from the University, at the discretion of the Professor and Administration.**

- 1) Make-up exams will **NOT** be given. Missed exams will be scored as zero.
- 2) Specific dates and policies regarding withdrawal from the course can be found on the registrar's website. The instructor will abide by all dates and rules defined by this office without exception.
- 3) Any special considerations (disabilities, religious holiday conflicts, etc.) must be brought to the attention of the instructor in the first week of classes. They will be accommodated on an individual basis.
- 4) **SPECIAL CONSIDERATIONS FOR INDIVIDUALS WITH DISABILITIES**
If you have a documented disability that requires accommodations, you will need to register with Student Disability Services (SDS) for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TDD only). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

5) **ADD/DROP POLICY**

The add and drop policies currently defined by the University will be followed.

If you sign up for a class, stop attending, and fail to withdraw, you will receive an F for the course. In addition, if you drop the course after 5 weeks, you will be assigned one of the following three marks: WP (withdrew but was passing at the time), WF (withdrew but was failing at the time), WN (withdrew and never attended class or no graded work). Also, any "I" given to a student will automatically revert to "F" if the work is not completed within one calendar year. There are no exceptions.

- 6) For any and all issues not covered in this syllabus, refer to the 'Student Due Process Policy', which can be found on the Dean of Students' website (<http://www.doso.wayne.edu/judicial/index.htm>).

- 7) University closures will be publicized through:

- the University Newline (313) 577-5345*,
- WSU Homepage (www.wayne.edu)*,
- WSU Pipeline (www.pipeline.wayne.edu)*,
- WDET-FM (Public Radio 101.9) and
- by other local radio and television stations.

* Note: The information on closures and class cancellations is likely to be found at these locations before it is broadcast by local radio and television stations, but blackboard is often faster.

If an hourly exam is scheduled on a day when the University is officially closed during class, the **exam will be held during the next scheduled meeting** of class that occurs when the University is open, or as indicated on the class blackboard site.

OTHER

I am happy to write letters of recommendations for students who earn a grade of A or A-. Please turn all cell phones off during class and during exams.

Any specific issue not covered by this syllabus will be resolved using University policies. Disputes that cannot be resolved following the guidelines present in this syllabus will be resolved by following the guidelines of the University "Student Due Process".

TENTATIVE SCHEDULE as of 8/10/18

(Changes will be noted in class and on blackboard. The readings for several chapters may be truncated, as determined by the instructor. Exam dates will not be changed.)

| <u>Topic</u> | <u>Book Reading (Articles assigned for each chapter)</u> |
|---------------------------------|---|
| Membrane Structure | Chapter 10 |
| Membrane transport | Chapter 11 |
| Protein Sorting | Chapter 12 |
| Intracellular Vesicular Traffic | Chapter 13 |
| Cell Communication | Chapter 15 |
| Cytoskeleton | Chapter 16 |
| Cell Cycle | Chapter 17 |
| Adhesions, Junctions and ECM | Chapter 19 |
| Stem Cells and Tissue Renewal | Chapter 22 |
| Cancer | Chapter 20 |

Exam Dates

EXAM I (100 points) Friday, September 28, 2018

EXAM II (100 points) Monday, October 22, 2018

EXAM III (100 points) Wednesday, November 14, 2018

EXAM IV (100 points) Friday, December 7, 2018

****Topics will be covered in the order above. Exams will only include material covered up to the last lecture before the exam, some chapters/topics may be shortened or split between two different exams. Flexibility allows for more or less time on specific topics based on the latest literature or seminars.**