

**Biology 6305: Cell Physiology**  
**Mondays and Wednesdays 12:00PM to 12:50 PM**  
**Fall 2013**

**Instructor:** Stephanie Carmicle, Ph.D, Assistant Professor

**Credit:** 2 hours

**Office:** Medical Sciences Building Room 215

(601)-925-3872

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Office hours: See Moodle

**Catalog course description:** The primary focus of this course focuses on eukaryotic cells from multicellular organisms, with particular emphasis on the mechanics of cell growth and division, signal transduction, energetics, and the synthesis and transport of lipids and proteins.

**Rationale for course:** Cell physiology is designed to provide students with detailed instruction in the structure and physiology of cells. This course is intended for students who are pursuing advanced training in the biological sciences and is required for acceptance into many of the health professional schools and graduate programs in the biomedical sciences. Building on the student's knowledge of cell structures and functions that were covered in Biology 111, most of the discussion in this course will focus on eukaryotic cells from multicellular organisms, with particular emphasis on the mechanics of cell growth and division, signal transduction, energetics, and the synthesis and transport of lipids and proteins.

**Learning objectives**

At the end of this course, the student will be able to:

- Identify the major membrane bound organelles in the eukaryotic mammalian cell
- Name the major physiological function of each organelle
- Explain the concept of membrane fluidity and how membrane composition affects fluidity
- Identify the four major macromolecules in the mammalian cell and their composition
- Describe the steps involved in DNA replication, gene expression, and protein production
- Understand major intracellular signaling pathways and mediators therein
- Explain cellular bioenergetics
- Identify and describe the components in excitable cells, namely neuronal and cardiac cells
- Identify and describe the major cytoskeletal elements in a mammalian cell
- Discuss the role of apoptosis in carcinogenesis

**Methods of instruction:** The course will consist of two hours of lecture per week. There may also be outside assignments involving individual and group research or podcasts. McMoodle will be used to disseminate course materials such as syllabus, handouts, etc.

**Required Texts:**

Alberts B., *et al.* Molecular Biology of the Cell. 5<sup>th</sup> ed. Garland Science. ISBN 978-0-8153-4105-5.

**Student evaluation:**

Quizzes	100 points
Homework/Assignments	100 points
Midterm EXAM	100 points
Final EXAM	100 points
<b>TOTAL POINTS</b>	<b>400 points</b>

**Grading:**

90-100% = A
88-89.9% = B+
80-87.9% = B
78-79.9% = C+
70-77.9% = C
60-69% = D
<60% = F.

**Testing procedures:**

-Touching a cell phone after an exam is passed out will result in loss of 20 points on the exam.

-Touching a cell phone or other electronic devices other than a calculator (not the one on your phone) is NOT permitted and will result in an **F** on the exam.

**Academic tutoring:** This is a free service provided by the university for its students. Students who need help with studying should take advantage of this. Information can be found using the following link: <http://www.mc.edu/academics/academic-tutoring>

Students may also request one on one tutoring through the Biology department, by signing up with Mrs. Sue Caldwell in Hederman 104.

**NOTES:** A full tuition refund cannot be made on dropped classes after *September 4*. The last day to withdraw from class with a W is **October 25, 2013**.

**Class etiquette:** This is our class and it belongs to each one of us. Arriving late, texting, receiving cell phone calls or pages, having temper tantrums, and being disruptive robs us of the time that we have to work together. Therefore, arriving late, texting, receiving cell phone calls or pages, having temper tantrums, and being disruptive is wrong. It isn't beautiful logic, but you can catch the drift. **Cheating and or plagiarism will not be tolerated** and will be treated in accordance with the university policies listed in the academic catalog and handbook.

**Special accommodations at Student Counseling Services:**

In order for a student to receive disability accommodations under Section 504 of the Americans with Disabilities Act, he or she must schedule an individual meeting with the Director of Student Counseling

Services **immediately upon recognition of their disability** (if their disability is known they must come in before the semester begins or make an appointment **immediately** upon receipt of their syllabi for the new semester). The student must bring with them written documentation from a medical physician and/or licensed clinician that verifies their disability. If the student has received prior accommodations, they must bring written documentation of those accommodations (example Individualized Education Plan from the school system). Documentation must be current (**within 3 years**). The student must meet with SCS **face-to face** and also attend two (2) additional follow up meetings (one mid semester before or after midterm examinations and the last one at the end of the semester). Please note that the student may also schedule additional meetings as needed for support through SCS as they work with their professor throughout the semester. Note: Students must come in **each semester** to complete their Individualized Accommodation Plan (example: MC student completes fall semester IAP plan and even if student is a continuing student for the spring semester they must come in again to complete their spring semester IAP plan).

Student Counseling Services is located in Alumni Hall Room #4 or they may be contacted via email at : [mbryant@mc.edu](mailto:mbryant@mc.edu) or [rward@mc.edu](mailto:rward@mc.edu) or by phone at [601-925-7791](tel:601-925-7791).