Cell Physiology Syllabus for Spring 2014
BIO 6305-Z

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PLEASE CHECK YOUR MC EMAIL AND MOODLE FREQUENTLY

Credit: 2 hours

Time and Location: Mondays and Wednesdays, 11:00 AM-11:50 AM, H100

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 covered in general biology courses, 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. Moodle will be used to disseminate course materials such as syllabus, handouts, etc.

Required Texts: Alberts B., *et al*. Molecular Biology of the Cell. 5th ed. Garland Science. ISBN 978-0-8153-4105-5.

Student evaluation:

4 exams (comprehensive)	400 points
Homework/Assignments/Quizzes	100 points
TOTAL POINTS	**500 points**

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.

Attendance: Your attendance in lectures in welcomed and expected. I will follow the University attendance policy as described in the school catalog, which can be found in the MC Undergraduate catalog p56-57. ***Please note that your grade can be reduced as a result of excessive absences. If you miss more than 25% of the classes, you will be given an F automatically.***

Excused absences: Absences that are excused have proper documentation (from the doctor, court…). If the absence is excused, it is the ***student's*** responsibility to make-up missed assignments within a week of the excused period. **NO make-ups for quizzes.**

Academic Integrity: You are members of an institution that is dedicated to scholarship and spiritual growth. We are dedicated to empowering you to make "responsible and moral choices" and thus, ***the University and will accept nothing less than scrupulous honesty from its students***. We will follow the University policy on Academic Honest (Policy 2.19) which can be found in the student handbook.

Cell phones must be placed on silent or turned OFF before class begins. Audio recordings of lectures are permitted. Video recording is **NOT**. TAKING PHOTOS with cell phones is **NOT** permitted.

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.
- When reviewing an exam, you are not allowed to have the cell phone or any other electronic device out.

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.

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 or rward@mc.edu or by phone at 601-925-7791.

Important college dates:
January 20, Monday: Martin Luther King Holiday, No Day or Night Classes; Offices Closed
January 21, Tuesday, 5pm: Last Day To Enroll or Add A Full Semester Class
January 23, Thursday: Last Day To Drop a Full Semester Class with 100% Tuition Only Refund
March 10-16, Monday through Sunday: Spring Break
March 21, Friday: LAST DAY TO DROP A FULL SEMESTER CLASS (No Tuition Refund)
April 21, Monday: Easter Holiday - Offices Closed (No day classes; night classes will meet)
April 28-30, Monday-Wednesday: Dead Days (April 30, Wednesday: Last day of classes; night exams begin)
May 1, Thursday: Study Day
May 2- May 7, Friday, Saturday, Monday, Tuesday, Wednesday: Final exams

Tentative Schedule:

Week of…	Topics and Important Dates
1-13 to 1-17	**First lecture class meeting is Monday, January 13** Topics: Syllabus, Macromolecules, Plasma Membrane Overview
1-20 to 1-24	**Martin Luther King Holiday- no class- Monday, January 20** **Tuesday, January 21-last day to enroll or add a full semester class** **Thursday, January 23-last day to drop a class- 100% tuition refund** Topics: Fluid Mosaic Model, Membrane Transport Cell-Cell Communication
1-27 to 1-31	Topics: Plasma Membrane and Cytoskeleton Association, Nucleus Overview, Nuclear Envelope, Nucleolus
2-03 to 2-07	Topics: Nucleoplasm, Chromatin, Chromosomes
2-10 to 2-14	**Exam I: Wednesday February 11** Topics: DNA Structure, Replication
2-17 to 2-21	Topics: RNA Structure, Types of RNA, Transcription, RNA processing
2-24 to 2-28	Topics: Translation, Proteins Overview
3-03 to 3-07	**Exam II: Wednesday March 4** Topics: Protein Structure and Function
3-10 to 3-14	**Spring Break- no class**
3-17 to 3-21	Topics: Cell Cycle, Apoptosis **March 21- last day to drop a class -zero tuition refund**
3-24 to 3-28	Topics: Cytoplasm Overview, Structural Components of Cytoplasm
3-31 to 4-04	Topics: Structural Components of Cytoplasm, Organelle Interactions
4-07 to 4-11	**Exam III: Wednesday April 8** Topics: Cell Signaling
4-14 to 4-18	Topics: Bioenergetics
4-21 to 4-25	**Easter Holiday- April 21, Monday** Topics: Cell Specialization, Excitable Cells
4-28 to 5-02	**Study Day- May 1, Thursday** Topics: Extracellular Matrix
5-07	**Exam IV (Final): Wednesday, May 7 from 8:00 - 11:00**
(Day and Time TBA)	Histology and Cell Biology Board Exam **8:00 AM**. Only students taking 2 Shelf exams can take one at 1 PM the same day.

Early Alert System:

Mississippi College has adopted the practice of finding students early in the semester who may be exhibiting behaviors that could ultimately have a negative impact on their academic progress. These behaviors are often called "red flag" behaviors and include, but are not limited to, excessive absences, poor test grades, and lack of class participation or evidence of non-engagement. Identifying these behaviors early gives the instructor the opportunity to raise the "red flag" on behalf of a particular student so that the student can take the appropriate action to redirect his/her progress. The system alerts the student, the student's advisor, and the Office of Student Success. These messages are intended to help a student recognize an area of concern and to encourage him/her to make some choices to improve the situation. When a student receives an Early Alert message, the student should quickly make an appointment to talk with his/her professor about the situation. Also, students can make full use of the Office of Student Success to set academic goals and connect to campus resources.

Each student is expected to keep a copy of this syllabus and revised updates of the syllabus and schedule which will be posted on Moodle for reference.

Each student is expected to print a copy of this syllabus, print his/her name, sign the statement below, and turn in the <u>entire signed copy</u> to the instructor no later than Wednesday, January 22, 2014:

I _____ have read and had explained all of the information and policies outlined in this syllabus. I understand that as a student, that by signing this acknowledgement, I am required to adhere to the policies outlined in this syllabus during the period of my enrollment in this course. If at anytime I feel that I have not been treated in accordance with these policies, I have the right as a student to first meet with the instructor to rectify this problem. If the problem is not rectified, I or the instructor may refer to the department chair.

Course Name: _____

Course Number and Section: _____

Student Name (print or type clearly): _____

Student Signature: _____

Date of Signature: _____