

**Fayetteville State University**  
**College of Arts & Sciences**  
**Department of Biological Sciences**  
**BIOL 200 – Cellular Biology**  
**Fall 2011**

**I. Locator Information:**

**Instructor:** Muhammad Lodhi  
**Course # & Name:** BIOL 200-02 (Cellular Biology)  
**Semester Credit Hours:** 4-3-2  
**Day and Time Class Meets:** Lectures TR 11:00 am -12:15 pm (LS 102) and lab F 8:00 – 9:50 am (LS 116)

**Office Location:** LSA 320; Lab - LS218  
**Office hours:** MW 8:00-10:00 am, TR 1:00-3:00 pm, F 2:30 – 3:30 pm OR by appointment  
**Office Phone:** 910-672-1658  
**Email address:** mlodhi@uncfsu.edu  
**Webpage:** <http://faculty.uncfsu.edu/mlodhi>

**FSU Policy on Electronic Mail:** Fayetteville State University provides to each student, free of charge, an electronic mail account ([username@uncfsu.edu](mailto:username@uncfsu.edu)) that is easily accessible via the Internet. The university has established FSU email as the primary mode of correspondence between university officials and enrolled students. Inquiries and requests from students pertaining to academic records, grades, bills, financial aid, and other matters of a confidential nature must be submitted via FSU email. Inquiries or requests from personal email accounts are not assured a response. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail. Rules and regulations governing the use of FSU email may be found at <http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf>

**II. Course Description:**

This course is designed for students with minimal backgrounds in biology and chemistry. Its purpose is to help students to fully appreciate the dynamic aspects of cellular structure and function. Emphasis will be placed on analyzing the major hypotheses and concepts of cell biology. Both classical and contemporary topics will be discussed using evidence from experiments conducted with a variety of types of cellular materials. Major techniques used in the study of cellular biology will be reviewed. The course will emphasize the unifying principles of cell biology and its relationship to other disciplines such as biochemistry, genetics, and molecular biology.

Pre-requisite: BIOL 150; Co-requisite: CHEM 140.

**III. Disabled Student Services:**

In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ACA) of 1990, if you have a disability or think you have a disability to please contact the Center for Personal Development in the Spaulding Building, Room 155 (1<sup>st</sup> Floor); 910-672-1203.

**IV. Textbook and Lab Manual:**

B Alberts, D Bray, K Hopkins, A Johnson, J Lewis, Martin Raff, K Roberts and P Walter. Essential Cell Biology, 2010 (3<sup>rd</sup> edition). Garland Science, USA.

There is no printed manual required for this class. Students will be provided lab handouts either as hardcopies or posted on the Blackboard site. It is students' responsibility to make sure that they have the handouts needed for the labs.

**V. Student Learning Outcomes:**

Upon completion of this course, students will be able to;

1. Exhibit an understanding of the basic organization of cell structures as assessed through exams and quizzes
2. Summarize classical and historical events that resulted in the development of contemporary cell biology as demonstrated through exams, assignments and quizzes
3. Demonstrate an understanding of the basic features of organic molecules as determined by exam and quizzes
4. Summarize how genetic information is stored, utilized and controlled in DNA and protein synthesis
5. Explain packaging and organization of the genome as evidenced by chapter quiz and exam
6. Explain membrane and cell surface phenomena as displayed by chapter quiz
7. Summarize the steps and reactions involved in mitochondrial respiration and electron transport chain as determined by assignment and exam
8. Explain structure, function and significance of cytoskeleton when asked in exams and quizzes
9. Shows an understanding of the molecular and cellular aspects of diseases such as cancer, AIDS, and genetic diseases when asked in exams and quizzes
10. Communicate an understanding of cell biology through well organized, correctly structured and concisely written presentations of discussion question responses and reading reports as proven by the term papers and written assignments
11. Discuss modern techniques used to study the biology of the cell as assessed by exams, quizzes and assignments
12. Demonstrate knowledge of the language of cell biology through vocabulary assignments

#### VI. Course Requirements and Evaluation Criteria:

- a. **Grading Scale** – Final grades are calculated on a four-point system and affect a student's grade point average as indicated below. Faculty members will delineate in each class syllabus the methods and evaluative criteria for determining final grades in the class.

Grade	Credit Hours	Quality Points	Meaning
A	Hours attempted and earned	4 per credit hour	Exceptionally high
B	Hours attempted and earned	3 per credit hour	Good
C	Hours attempted and earned	2 per credit hour	Satisfactory
D	Hours attempted and earned	1 per credit hour	Marginally passing
F	Hours attempted – Not earned	0 per credit hour	Failing
FN	Hours attempted – Not earned	0 per credit hour	Failing due to non-attendance. (Student registered, but <u>never</u> attended.)
W	Hours attempted – Not earned	No impact on GPA	Class withdrawal prior to deadline (see Academic Calendar)
P	Hours attempted and earned	No impact on GPA	Satisfactory - Assigned only in classes specified as Pass/Fail
WU	Hours attempted – Not earned	No impact on GPA	Withdrawal from all classes for semester or term
AU	Hours attempted – Not earned	No impact on GPA	Auditing

Following standard FSU grading scale will be used

Percent of Points	Grade
90 – 100	A

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80 – 89	B
70 – 79	C
60 - 69	D
< 59	F
Incomplete	I
Excessive absences	EA
No show	X

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b. **Final grade** will be based on the following evaluation components

	Item	Number of Items	Points/Item	Total points	%age
1a	Exams	3	50	150	39
1b	Final Exam	1	25	25	6
2	Term Paper	1	40	40	10
3	Assignments	3	15	45	12
4	Online Quizzes	12	10	100	26
5	Lab Notebook	1	25	25	6
	<b>Total</b>			<b>385</b>	

1. **Class Exams:** There will be four exams during the semester. First three exams will consist of the material covered in the lectures till the prior week. These three exams will not contain any questions from the previous exam (s) and each will be worth 50 points. The fourth exam will be a comprehensive exam and worth 25 points, meaning that it will be given from all the chapters covered during the semester. These exams will be given in the class. **There will be no make-up exams except for medical or family emergency, that too with a doctor's verification of your situation.** If you miss the exam, report to me with the excuse and schedule the make-up exam within a week of the scheduled exam time.
2. **Term Paper:** Topics for the research papers will be limited to cell biology. Topics of the paper along with the rubrics for assessment will be distributed in the first two weeks of the class. Length of the paper will be a minimum of 4 pages, 1.5 line spacing and not more than 12 font size. **Term paper will be due as a HARD COPY on November 15 by 5 PM.** Term papers not written according to the rubric will not be graded and earn a zero.
3. **Assignments:** Each assignment will be 2-3 pages long. Due dates for each assignment is mentioned in the schedule. No hand written assignments will be acceptable. **Assignments submitted after the deadline and within two days of the deadline will be considered only for 80% grade of that assignment.** Assignments should be concise, well written and on the topic given. At least one of the assignments will be related to reading and criticizing research papers. Assignments should be submitted as hardcopies and can be submitted before the deadline.
4. **Online Quizzes:** A total of 12 quizzes will be given through Blackboard. Each quiz will cover material from the previous week. **Online quizzes will be accessible from 9:00 AM on Monday till 5:00 PM on Tuesday of the week.** A missed quiz will not be reopened except for medical and family emergencies. Two quizzes with the lowest scores will be dropped from the final grade.
5. **Laboratory Notebook:** Students are expected to maintain a laboratory notebook where he/she will enter all the projects, observations and data in a precise and neat way. A student can purchase a 3-ring notebook dedicated for the course and use it throughout the semester to show all the work done. Any handouts should also be pasted in the notebook and there should not be any loose papers. A handout on Keeping and Writing Lab Notebooks will be

provided. At the end of the semester the instructor will collect the notebooks and grade them accordingly.

**Attendance Requirements** – Each student is expected to come to all the classes throughout the semester on time. Instructor will take roll in the beginning of the class and mark all the late comers as absent. Students should notify the instructor about the tardiness at the end of the class along with the reason. If a student fails to do so, he/she will be marked absent for the day. The later comers will be marked tardy and 3 tardy days will be considered equal to one absence.

Medical and family emergencies do not include a routine doctor's or dentist's exam.

**Please note: If these evaluation criteria or schedule must be revised because of extraordinary circumstances, the instructor will discuss the changes and post the amendment at Announcement site of Blackboard.**

**Student Behavior Expectations:** The *Code of the University of North Carolina* (of which FSU is a constituent institution) and the *FSU Code of Student Conduct* affirm that all students have the right to receive instruction without interference from other students who disrupt classes.

FSU Core Curriculum Learning Outcome under Ethics and Civic Engagement (6.03): All students will “prepare themselves for responsible citizenship by fulfilling roles and responsibilities associated with membership in various organizations.” Each classroom is a mini-community. Students learn and demonstrate responsible citizenship by abiding by the rules of classroom behavior and respecting the rights all members of the class.

The FSU Policy on Disruptive Behavior (see FSU website for complete policy) identifies the following behaviors as disruptive:

1. Failure to respect the rights of other students to express their viewpoints by behaviors such as repeatedly interrupting others while they speak, using profanity and/or disrespectful names or labels for others, ridiculing others for their viewpoints, and other similar behaviors;
2. Excessive talking to other students while the faculty member or other students are presenting information or expressing their viewpoints.
3. Use of cell phones and other electronic during the lecture or laboratory devices is completely prohibited
4. Overt inattentiveness (sleeping, reading newspapers)
5. Eating in class (except as permitted by the faculty member)
6. Threats or statements that jeopardize the safety of the student and others
7. Failure to follow reasonable requests of faculty members
8. Entering class late or leaving class early on regular basis

Consequences for Failing to Meet Behavioral Expectations: The instructor may take the following actions in response to disruptive behavior. Students should recognize that refusing to comply with reasonable requests from the faculty member is another incidence of disruptive behavior.

1. Direct student to cease disruptive behavior.
2. Direct student to change seating locations.
3. Require student to have individual conference with faculty member. At his meeting the faculty member will explain the consequences of continued disruptive behavior.
4. Dismiss class for the remainder of the period. (Must be reported to department chair.)
5. Lower the student's final exam by a maximum of one-letter grade.
6. File a complaint with the Dean of Students for more severe disciplinary action.

**Student Complaints:** Students who believe the faculty member has unfairly applied the policy to them may make file a complaint to the Chair of the department or the Dean of the College after filling the Student Complaint form that can be found at [http://www.uncfsu.edu/acadaff/pdf/studentcomplaints\\_fillable\\_form.pdf](http://www.uncfsu.edu/acadaff/pdf/studentcomplaints_fillable_form.pdf).

#### **VII. Academic Support Resources :**

Students who are earning less than a “C” average will be encouraged to attend tutorial sessions provided free by various units and centers below.

<http://www.uncfsu.edu/univcoll/services.asp>

<http://www.uncfsu.edu/learningcenter/>

<http://www.uncfsu.edu/sss/>

<http://www.uncfsu.edu/cpsr/tutorialservices.htm>

Online tutoring is also available through Smartthinking:

<http://www.uncfsu.edu/fsuretention/smarthinkingflyer.pdf>

#### **VIII. Course Outline and Assignment Schedule:**

Provided separately as Course Schedule

#### **IX. Teaching Strategies:**

Power Point lectures will be delivered in the class and the same lectures will be posted on Blackboard. Internet resources will be utilized where appropriate to aid in the learning of new concepts. Students will be encouraged to ask questions and take part in discussions. Also, students will be given assignments and a research papers to independently learn or enhance their understanding of the subject. Hands on laboratory exercises will also help students understand some of the concepts learned in lectures. Rubrics will be provided to help prepare assignments and lab reports as well as in assessment.

#### **X. Bibliography:**

1. Karp, Gerald Cell and Molecular Biology (6<sup>th</sup> edition). . Johns Wiley & Sons, Inc. USA
2. Lodish, Harvey et al. Molecular Cell Biology (6<sup>th</sup> edition). . WH Freeman & Company, USA
3. Cooper, Jeffrey. The Cell – A Molecular Approach (5<sup>th</sup> edition). . Sinaur Associates, USA
4. The Cell. [www.cell.com](http://www.cell.com)
5. Molecular Biology of the Cell ([www.molbiocell.org](http://www.molbiocell.org))
6. The Plant Cell ([www.plantcell.org](http://www.plantcell.org))
7. Nature Cell Biology ([www.nature.com/ncb](http://www.nature.com/ncb))
8. The Journal of Cell Biology ([www.jcb.rupress.org](http://www.jcb.rupress.org))
9. The Cell Cycle ([www.landesbioscience.com/journals/cc/](http://www.landesbioscience.com/journals/cc/))
10. Cell Adhesion and Migration (<http://www.landesbioscience.com/journals/celladhesion/>)
11. **Methods in Molecular Biology: Basic Cell Culture Protocols** . Cheryl D. Helgason and Cindy L. Miller. Humana Press; Totowa NJ, USA; Oct. 2004
12. **Adult Stem Cells**. Editor: Kursad Turksen. Humana Press; Totowa NJ, USA; Jan. 2004
13. **Stem Cells Handbook**. Editor: Stewart Sell. Humana Press; Totowa NJ, USA; Oct. 2003
14. Cell Stem Cell ([www.cell.com/cell-stem-cell](http://www.cell.com/cell-stem-cell))

15. Cell image collection (<http://www.cell.com/home>)