

**BIOLOGY 101  
BIOLOGICAL SCIENCE  
SECTIONS 1, 2, 3 & 4  
SPRING 2006**

PROFESSOR: DR. H. E. SHEALY, JR.  
OFFICE: ROOM 111D, SCIENCE BUILDING  
OFFICE HOURS: BY APPOINTMENT  
COURSE CREDIT: FOUR CREDIT HOURS  
LECTURE: T/TH 9:25-10:40 AM, RM 327, SCI BLDG  
LABS: T 12:15-2:55PM (SEC 1); W 10AM-12:40PM (SEC 2); W 1-3:40PM (SEC 3) 1-3 107 SCI BLDG  
TH 10AM-1:40PM (SEC 4) 108 SCI BLDG  
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**PLEASE, READ THIS SYLLABUS CAREFULLY AND REFER TO IT WHEN YOU HAVE QUESTIONS ABOUT THE COURSE.**

**COURSE GOALS AND OBJECTIVES:** BIOLOGICAL SCIENCE 101 IS FOR BIOLOGY MAJORS AND NON-MAJORS. THE GOAL OF THIS COURSE IS SIMPLY TO INTRODUCE STUDENTS TO THE UNDERLYING **PRINCIPLES** GOVERNING THE SCIENCE OF BIOLOGY. SPECIAL EMPHASIS WILL BE PLACED ON THE BASIC PROCESSES AND COMPONENTS OF CELLS IN LIVING ORGANISMS. TO SUCCESSFULLY COMPLETE THIS COURSE THE STUDENT MUST DEMONSTRATE AN UNDERSTANDING OF:

- THE SCIENTIFIC METHOD AND HOW IT IS USED
- BASIC BIOLOGICAL COMPOUNDS AND HOW THEY ARE UTILIZED BY CELLS
- THE CELLULAR PROCESSES AND COMPONENTS, AND THE INTERACTIONS BETWEEN CELLS
- THE STRUCTURE OF EUKARYOTES, PROKARYOTES, AND VIRUSES
- THE FLOW OF ENERGY IN BIOLOGICAL SYSTEMS
- THE STRUCTURE AND IMPORTANCE OF PROTEINS AND NUCLEIC ACIDS
- THE ROLE OF ENZYMES IN METABOLISM
- THE NATURE OF DNA, GENES AND THEIR EXPRESSION
- THE BASICS OF HEREDITY AND PATTERNS OF INHERITANCE

THE STUDENT WILL BE INTRODUCED TO MANY TOPICS THAT ARE COVERED IN GREATER DETAIL IN OTHER BIOLOGY COURSES. IT IS EXPECTED THAT STUDENTS RECEIVING A SATISFACTORY GRADE ON THE HOUR EXAMS, FINAL EXAM, AND LABORATORY ASSIGNMENTS WILL HAVE A GOOD BASIC UNDERSTANDING OF THE BIOLOGICAL CONCEPTS AND PRINCIPLES OUTLINED ABOVE.

**TEXT:** BIOLOGY, 7<sup>TH</sup> EDITION by RAVEN, JOHNSON, LOGOS, SINGER. PUBLISHED BY McGraw/Hill, 2005.

**LAB MANUAL:** BIOLOGY 101 LAB MANUAL by JACKSON AND YATES. THE MANUAL IS AVAILABLE AT THE USCA BOOKSTORE.

**REQUIRED SUPPLIES:** SCANTRON SHEETS FROM USCA BOOKSTORE FOR HOUR EXAMS, #2 LEAD PENCILS AND A **QUAD RULED LAB NOTEBOOK**. ALL ARE AVAILABLE AT THE USCA BOOKSTORE.

**METHODS OF EVALUATION:**

**GENERAL**

THERE WILL BE HOUR EXAMS, LECTURE QUIZZES, LAB QUIZZES, LAB NOTEBOOKS AND REPORTS, AND A COMPREHENSIVE FINAL EXAM.

**LAB NOTEBOOKS AND LAB REPORTS**

EACH STUDENT WILL BE REQUIRED TO PURCHASE AND MAINTAIN A LABORATORY NOTEBOOK. YOUR INSTRUCTOR WILL GIVE YOU THE SPECIFICS ON THIS. ALL NOTES AND RECORDS FROM EACH LAB WILL BE KEPT IN THIS BOOK. THE FORMAT OF THE REPORTS WILL BE PRESENTED IN LAB. THESE REPORTS WILL BE SUBMITTED PERIODICALLY FOR GRADING. THERE WILL ALSO BE WEEKLY LAB QUIZZES.

YOU WILL BE OBSERVED IN CLASS/LAB DISCUSSIONS, QUESTIONS, AND OTHER CLASSROOM/LAB INTERACTIONS. THERE WILL BE NUMEROUS OPPORTUNITIES FOR YOU TO SPEAK AND WRITE ABOUT BIOLOGY...**CLASS DISCUSSIONS AND QUESTIONS ARE ENCOURAGED!**

**GRADE COMPONENTS:**

LECTURE

THREE HOUR EXAMS.....	55%
LECTURE QUIZZES.....	5%
FINAL EXAM (COMPREHENSIVE).....	15%

LAB

LAB NOTEBOOKS/REPORTS (80%) & LAB QUIZZES (20%).....	25%
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**GRADING SCALE:**

100-93 = A; 92-88 = B+; 87-81 = B; 80-76 = C+; 75-70 = C; 69-65 = D+; 64-60 = D; 59-0 = F.

**MAKE-UP EXAMS:** THERE ARE NO MAKE-UP EXAMS. SHOULD YOU MISS AN EXAM FOR A DOCUMENTED EXCUSABLE REASON; AN ALTERNATE EXAM MAY BE GIVEN DURING THE LAST WEEK OF CLASSES. ONLY ONE EXAM WILL BE TREATED IN THIS MANNER; ANY OTHER MISSED EXAMS WILL BE COUNTED AS A ZERO. DUE TO THE NATURE OF LAB ITSELF, MAKE-UP LABS CANNOT BE GIVEN!

**ATTENDANCE:** STUDENTS WILL BE ALLOWED A TOTAL OF FOUR (4) UNEXCUSED ABSENCES FROM THIS COURSE. YOU SHOULD NOTE THAT I MAY IMPOSE A PENALTY FOR ABSENCES IN EXCESS OF FOUR OF THE REGULARLY SCHEDULED CLASS/LAB MEETINGS BY ASSIGNING THE GRADE OF "F" FOR THE COURSE. ATTENDANCE IS TAKEN FOR EACH CLASS/LAB. THEREFORE, I URGE YOU TO ATTEND ALL CLASSES/LABS, AND TO **BE PREPARED AND BE ON TIME**. REGARDLESS OF THE REASON THAT YOU ARE ABSENT, **YOU ARE ALWAYS RESPONSIBLE FOR ALL CLASS/LAB ASSIGNMENTS.**

**DISABILITY STATEMENT:** IF YOU HAVE A PHYSICAL, PSYCHOLOGICAL, AND/OR LEARNING DISABILITY WHICH MIGHT AFFECT YOUR PERFORMANCE IN THIS CLASS, PLEASE CONTACT THE OFFICE OF DISABILITY SERVICES, 126A B&E, (803) 641-3609, AS SOON AS POSSIBLE. THE DISABILITY SERVICES OFFICE WILL DETERMINE APPROPRIATE ACCOMMODATIONS BASED ON MEDICAL DOCUMENTATION.

**WRITING CENTER:** USCA PROVIDES A WRITING CENTER LOCATED ON ROOM 201 OF THE H&SS BUILDING. IF YOU NEED EXTRA ASSISTANCE ON ANY WRITING ASSIGNMENT FOR THIS OR ANY OTHER CLASS THAT YOU ARE TAKING, PLEASE TRY THE WRITING CENTER.

**WRITING PORTFOLIO:** ALSO REMEMBER THAT WRITTEN WORK THAT YOU COMPLETE FOR THIS CLASS CAN BE INCLUDED IN YOUR WRITING PORTFOLIO REQUIREMENT. FOR FURTHER INFORMATION ON THE WRITING PORTFOLIO REQUIREMENT, PLEASE CONSULT YOUR CURRENT USCA BULLETIN.

**TENTATIVE LECTURE SCHEDULE SPRING 2006\***

<b>DATE</b>	<b>WEEK</b>	<b>TOPIC</b>	<b>CHAPTERS</b>
10 Jan 06 12	1	Introduction/The Science of Biology The Science of Biology	1 1
17 19	2	The Nature of Molecules The Chemical Building Blocks of Life	2 3
24 26	3	The Chemical Building Blocks of Life The Origin and Early History of Life	3 4
31 2 Feb	4	Cell Structure Membranes	5 6
7 9	5	Cell-Cell Interactions <b>EXAM I</b>	7 *
14 16	6	Energy and Metabolism How Cells Harvest Energy	8 9
21 23	7	How Cells Harvest Energy Photosynthesis	9 10
28 2 Mar	8	How Cells Divide Sex.Reprod.&Meiosis/3 Mar <b>LAST DAY TO DROP w/W</b>	11 12
<b>6-10</b>	<b>9</b>	<b>SPRING BREAK...No Classes!!!!</b>	*
14 16	10	Patterns of Inheritance DNA: The Genetic Material	13 14
21 23	11	DNA: The Genetic Material <b>EXAM II</b>	14 *
28 30	12	Genes and How They Work Genes and How They Work	15 15
4 April 6	13	Gene Technology Genomes	16 17
11 13	14	Control of Gene Expression <b>EXAM III</b>	18 *
18 20	15	Cellular Mechanisms of Development Cancer Biology and Cell Technology/ <b>LAST CLASS</b>	19 20
24 25/26	16	<b>Monday/Last day of classes for the semester.</b> <b>Tuesday &amp; Wednesday/Reading Days</b>	* *
<b>2 MAY</b>	<b>17</b>	<b>FINAL EXAM, TUESDAY...8 AM!</b>	<b>Comprehensive</b>

**\*ALL ASSIGNMENTS ON THIS LECTURE SCHEDULE ARE SUBJECT TO CHANGE.**

**TENTATIVE LABORATORY SCHEDULE SPRING 2006\***

<b>DATE</b>	<b>WEEK</b>	<b>TOPIC</b>	<b>LAB EXERCISE</b>
10,11,12 <b>Jan</b>	1	<b>No Labs</b>	*
17,18,19	2	<b>Measurement Techniques</b>	Bio 101 #1 Lab Manual
24,25,26	3	Analysis of Measurement Results Recitation	*
31 1,2 <b>Feb</b>	4	<b>Organic Molecules in Cells</b>	Bio 101 #2 Lab Manual
7,8,9	5	Analysis of Organic Molecules Results Recitation	*
14,15,16	6	<b>Cells and Microscopy</b>	Bio 101 #3 Lab Manual
21,22,23	7	Analysis Cells and Microscopy Results Recitation	*
28 1,2 <b>Mar</b>	8	<b>Enzymes</b>	Bio101 #4 Lab Manual
7,8,9	9	<b>Spring Break - No Labs!!!</b>	*
14,15,16	10	Analysis of Enzymes Results Recitation	*
21,22,23	11	<b>Photosynthesis</b>	Bio 101 #5 Lab Manual
28,29,30	12	Analysis of Photosynthesis Results Recitation	*
4,5,6 <b>Apr</b>	13	<b>Chi Square and Mendelian Genetics</b>	Bio 101#7&8 Lab Manual
11,12,13	14	Analysis of Chi Square, Mendelian Genetics Results Recitation	*
18,19,20	15	<b>Recitation</b>	*
	16	<b>No Labs - Classes End Monday, April 24 Reading Days 24,26 April</b>	*

**\*ALL ASSIGNMENTS ON THIS LAB SCHEDULE ARE SUBJECT TO CHANGE.**

**Laboratory schedule.** Each assigned laboratory assignment is comprised of one or more sessions. In general, the first session is a "wet" laboratory exercise. During these labs, the student will complete experiments that require development of a hypothesis, experimental design, hypothesis testing, and drawing conclusions. The notes and results of these exercises must be maintained in the laboratory notebook. The general procedure for each exercise will be obtained from the laboratory manual and your instructor.

**Data analysis and recitation.** Each "wet" laboratory exercise will be followed by a second laboratory period that will be used by student laboratory groups to compose a laboratory report based on the data collected from the previous "wet" lab. Each laboratory group will synthesize individual results into a single written report to be turned into the instructor. The format of this report will be that of a scientific paper. Approximately one-hour of this period will be designated as a recitation period during which the instructor and students will discuss biological concepts and principles in a small group setting. Eighty percent (80%) of your lab grade for each lab will be determined by the grade that you receive on your notebook and lab report.

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