

Biological Sciences I

Revised 11/28/2011

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<u>Course Number</u>	BIO 101 Classroom/Lab: E-22 Lead Instructor: Dr. Abby Babock (babcocka@sccsc.edu) Department Chair: Dr. Berta Hopkins (hopkinsb@sccsc.edu)
<u>Prerequisite(s)</u>	ENG 101, MAT 101 or MAT 152, high school biology (or BIO 100) or high school chemistry (or CHM 100 or CHM 105) with a minimum grade of “C” in all courses
<u>Co-requisite(s)</u>	None
<u>Course Description</u>	This course is a study of the scientific method, basic biochemistry, cell structure and function, cell physiology, cell reproduction and development, Mendelian genetics, population genetics, natural selection, evolution, and ecology.
<u>Course Outcomes</u>	Students should be able to demonstrate: <ol style="list-style-type: none">1. Rationality, logic and coherence through critical thinking;2. Their ability to express themselves effectively in quantitative and qualitative terms;3. The scientific method of inquiry;4. Their ability to access, retrieve, synthesize and evaluate information.
<u>Textbook</u>	BIOLOGY, 10 th Ed. Selected Chapters <i>Sylvia S. Mader</i>
<u>Lab Manual</u>	Selected Labs from Laboratory Manual to Accompany: BIOLOGY 10 th Ed. BIO 101 <i>Sylvia Mader</i> .
<u>References</u>	N/A
<u>Other Required Materials, Tools, And equipment</u>	All lecture notes will be posted on blackboard and/or the Science Dept. Website. Any additional resources (handouts) will be provided to the Student by the instructor. Video recorded lectures are found under the Panopto Lecture Capture Application on the Portal.
<u>Method of Instruction</u>	Lecture and discussion, demonstrations, audio-visual materials, on-line resources, projects, quizzes and written exams.

<u>Grading system</u>	90 - 100 = A
	80 - 89 = B
	70 - 79 = C
	60 - 69 = D
	Below 60 = F

<u>Grade calculation</u>	Lecture exams (100 pts each) x 5	= 500
	Quizzes	= 90
	Presentation topic paper	= 10
	Presentation	= 90
	Lab exams (100 pts each) x 3	= 300
	Lab attendance/participation	= 10
	Final Exam (required & comprehensive)	= 200
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		= 1200

Attendance Policy See Student Handbook Pages 77-80
The withdrawal date for Spring semester will be **04/02/2012**

Academic Conduct Academic dishonesty
Please See Student Handbook Page 98

Cellular phones and pagers/beepers
Please see Student Handbook Pages 76-77

Class procedures **Biology requires no one miss over 10 hours of lecture**
Preparation:

1. Read over the material before coming to class.
2. Come prepared to do the work each day.
3. Be in your place with lecture notes at the beginning of each class.
4. Pay careful attention to the printed instructions.
5. Be considerate of your class associates. Your activities may disturb them so they are unable to benefit from the lecture/lab.
6. Report immediately to the instructor any emergencies or injuries that occur.

Accommodations Students who need special accommodations in this class because of a documented disability should notify Student Disability Services by calling (864) 592-4818, toll-free 1-800-922-3679; via email through the SCC web site at www.sccsc.edu/resources/disabilities; or by visiting the office located in the East Building Room 30-B on the SCC Central campus. Contacting Student Disability Services early in the semester gives the College an opportunity to provide necessary support services and appropriate accommodations.

Course
Competencies &
Objectives

Upon satisfactory completion of this course, the Student will be able to:

Distinguish between the levels of biological organization and between the components of the scientific method.

- A. identify the characteristics of life
- B. describe an ecosystem
- C. identify steps of scientific method
- Identify major organic compounds in cells and their importance.
 - A. identify major elements and bonding found in organic compounds
 - B. identify properties of carbohydrates, fats, proteins and nucleic acids
 - C. describe properties of water, acids and bases
- Identify cells, their organelles, and their importance.
 - A. describe cell theory
 - B. compare plant and animal cells
 - C. identify structure and function of cell organelles
- Identify cell processes, their steps and their importance.
 - A. identify properties of plasma membrane
 - B. identify methods of movement across membrane
 - C. describe energy's role in the cell
 - D. identify properties of enzymes
 - E. compare and contrast photosynthesis and cellular respiration
- Distinguish between kinds of cell reproduction
 - A. state differences between mitosis and meiosis
 - B. identify the steps in cell division and state their
- Identify major principles of genetics
 - A. identify principles of Mendelian genetics and apply these to given genetic crosses
 - B. identify patterns of human inheritance
- Identify structure and function of DNA and RNA in protein synthesis.
 - A. compare DNA to RNA
 - B. describe DNA replication
 - C. describe transcription and translation of RNA for protein synthesis
- Perform laboratory assignments, collect data, and formulate conclusions based on experimental results.
 - A. identify steps of scientific method to write data reports
 - B. apply knowledge gained from lecture to perform lab experiments by using the scientific method

- BIO 101 SCHEDULE SPRING 2012

LECTURE	LAB (Wed, Thur, or Fri Depending on Section)
1/9: Syllabus overview & Chapt 1 1/10: Chapt 1	Lecture on Chapt 2
1/16: No class MLK holiday 1/17: Chapt 2/3	LAB 2 – Metric System / Microscopes
1/23: Chapt 3 1/24: Chapt 3	LAB 3 - Macromolecules
1/30: EXAM 1 1/31: Chapt 5	LAB 4 – Cells/pH
2/6: Chapt 5 2/7: chapt 4	LAB 4 cont. – Osmosis / Diffusion
2/13: Chapt 4 2/14:Chapt 6	PRACTICAL # 1
2/20: EXAM 2 2/21: Chapt 7	LAB 5 - Enzymes
2/27: Chapt 7 2/28: Chapt 8	LAB 6 – Photosynthesis (TURN IN TOPIC PAPER)
3/5: Chapt 8 3/6: EXAM 3	LAB 7 – Cellular Respiration
3/12: Work Day (or continue Lecture if needed) 3/13: Chapt 9	PRACTICAL # 2
3/19: Chapt 9 3/20: Chapt 10	LAB 8 – Mitosis/Meiosis
3/26: Chapt 10 3/27: EXAM 4	LAB 11 - DNA
4/2: SPRING BREAK no class 4/3: SPRING BREAK no class	SPRING BREAK no Lab
4/9: Chapt 11 4/10: Chapt 11	PRACTICAL #3 (TURN IN PRESENTATIONS)
4/16: Chapt 12 4/17: Chapt 12	PRESENTATIONS
4/23: EXAM 5 4/24: Study for Final	FINAL EXAM

- Dates/Times and material is subject to change. Final Exam time and date is dependent on your section.