

BSC 101 - General Biology
Sections 4, 5, 6
Fall 2012 Syllabus and Schedule
Lecture: MW 9:35-10:50, D 101 SCI

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Course Description

This course is designed to introduce non-major students to the basic principles of Biology and acquaint them with the diversity of life. We will explore basic cellular-level processes, genetics and reproduction, evolution, biological diversity, and how organisms relate to one another within their environments. Because this course is designed to suit the needs of non-majors, we will give special emphasis to the applicability and relevance of biological concepts, knowledge, and technology to average citizens.

Enduring Understandings

Students completing this course will understand that:

1. The complexity of living systems is understandable in terms of demonstrable natural processes that are themselves fairly simple.
2. At higher orders of complexity, biological systems show emergent properties, so that the sum of the parts is greater than the whole.
3. Our lives, livings, and all human activity are inextricably linked to biological systems and processes.

Essential Questions

1. What natural processes shape the complexity of living systems?
2. What properties are emergent at different levels of biological organization?
3. How does and understanding of biological processes and systems make me better prepared to participate in our society?

Student Learning Outcomes

Students completing this course will be able to:

1. Apply the scientific method, and describe the scientific method distinguishes the sciences from other branches of learning.
2. Discuss how the cellular level functions that are necessary for life.
3. Explain basic genetics and how genetic technology impacts our society.
4. Summarize the basic processes of inheritance and evolutionary change.
5. Analyze the forms and functions of animals and plants within an evolutionary context.
6. Describe the basic functioning of populations, communities, and ecosystems, and recognize how the properties of these systems relate to the organisms that comprise them.

Required texts:

JB Reece, Taylor MR, Simon SJ, and JL Dickey. 2012. **Campbell Biology: Concepts and Connections, 7th ed.** Benjamin Cummings/Pearson, Boston.

Biology 101 Lab Manual, Available in the Campus Book store.

Additional Requirements

All students are required to purchase chemical splash goggles from the book store in the DUC.

Attendance Policies

Attendance at lectures will help you to perform well on exams. There is no formal attendance requirement for lectures, but there are often quizzes and activities during lecture for which you will receive points. If you are absent from lecture, you will not be able to make up these points.

Attendance in labs is required. All labs are associated with prelabs and lab reports, for which you will receive points. These assignments are provided to help you focus your learning and to give you a direct grade-incentive to attend labs. They are not, however, the educational focus of the lab. Performing the lab assigned for any given week is what is educationally valuable about lab. Therefore, there are no make-ups for lab reports or prelabs missed due to absence. If you have more than two unexcused absences from labs, **10 points will be deducted from your total score** for each additional absence.

Attendance at exams is required. In general, the reasons that you miss an exam should be the same as those for which you would miss your own wedding. Make up exams are difficult to administer, and students usually do poorly on them. Because of this, it is best to avoid make up exams if you can. If, however, you are very ill, in court, have a dental emergency, death in the family, etc, you can take a make up exam. In order to qualify for a make up exam, you must provide a written, verifiable excuse from an authorized party (doctor, dentist, minister, etc.) within one week of the missed exam. This excuse should clearly articulate that you were UNABLE to make it to class for the exam, including a timetable for restriction from work or school. **All Make up exams will be held in the lab room at 4 pm on December 14, 2012.** There are no rewrites for make up exams.

Grading

My philosophy of grading is that **student learning is paramount**, and should be rewarded even if it does not occur according to *my* schedule. Therefore, this course is designed so that you can almost always improve your grade if you are not pleased with your score. Your grade in this course will be based on the following:

1. **Exams.** Exams will cover both lecture and lab material. These will be a combination of multiple choice, fill in the blank, and short essay questions. There are three regular exams, and a comprehensive final. Each exam will be worth 120 points. Approximately 20 points of each exam will come from lab. The remainder will be based on topics covered in lecture and the text. You may drop your lowest exam score. Consult your schedule for the exact date of each exam.
2. **Exam Re-writes.** After exams are returned, you will be allowed to review your exam. If you have missed any question, you will be able to recoup up to **half** of the points you missed by writing an

explanation detailing why the answer you put on your exam was incorrect or insufficient, and making a clear contrast with the correct answer. All exam rewrites must be submitted through the D2L dropbox, and will be checked for plagiarism using the Turn-it-in software program. Exam re-writes are **OPTIONAL** and are due one week from the date of exam return. Because of the timing, there are **NO rewrites** for the third exam or the comprehensive final exam.

3. **In-Class Quizzes and Activities.** These will be given randomly during lecture. Each quiz or activity will be worth 5 points. You will receive up to 100 points for the activities you complete. Students not in attendance will NOT be allowed to make up these points. There will be about 130 points worth of quizzes and activities during the term, but your maximum score is 100 points.
3. **Project.** During the term, you will be expected to collect news reports from the within the past 9 months that pertain to particular topics covered in class. You will write three to six paragraphs connecting each article to the principles learned in class, explaining how your understanding of biology has clarified the news report, or helped you to analyze it more completely. All projects must be submitted through the D2L dropbox, and will be checked for plagiarism using the Turn-it-in software program. 100 points.
4. **Prelab exercises.** These are located in the lab manual. You must complete them before coming to lab each week, and you must attend lab in order to receive credit for these. We will be completing 15 lab exercises this term. Your highest 13 prelab exercises, worth 4 points each, will count toward your grade.
5. **Lab reports.** These are located in the lab manual. You will complete them in lab each week. Lab reports will not be accepted from students not attending lab. Your highest 13 lab reports, worth 11 points each, will count toward your grade.
6. **Lab Report Re-writes.** After lab reports are returned, you will be allowed to review them. If you have missed any questions, you will be able to recoup **up to 100% of the missed points** by writing a formal report detailing **WHAT** you did in lab, **HOW** you did it, **WHAT** your results were, and **WHAT** those results meant. Lab report re-writes are **OPTIONAL** and are due one week from the date of lab report return. Because of the timing, there are **NO rewrites** for the final lab report.
7. **Extra Credit:** Because interesting opportunities for learning sometimes come up (visiting lecturers, special events, etc), I will occasionally announce small assignments that will yield up to 5 points of extra credit each. Extra credit points will be added to your course total at the end of the term. No extra credit will be provided at the request of students as a means of grade improvement.

Exams	Best 3 @ 120 points	360 points
Quizzes and Activities	5 pts @ up to 100 points	100 points
Project		100 points
Pre Labs	Best 13 of 15 @ 4 points	52 points
Lab Reports	Best 13 of 15 @ 11 points	143 points
Total		755 points

Grading Scale

A = 94-100	B+ = 87-89	C+ = 77-79	D+ = 67-68	
A- = 90-93	B = 84-86	C = 74-76	D = 64-66	F = <60
	B- = 70-83	C- = 70-73	D- = 60-63	

Grades will be available to students on the class site at Desire to Learn. Privacy laws preclude the distribution of grades via email or the phone.

Safe Learning Environment

UWSP values a safe, honest, respectful, and inviting learning environment. In order to ensure that each student has the opportunity to succeed, we have developed a set of expectations for all students and instructors. This set of expectations is known as the *Rights and Responsibilities* document, and it is intended to help establish a positive living and learning environment at UWSP. More information is available at: <http://www.uwsp.edu/stuaffairs/Pages/rightsandresponsibilities.aspx>

Academic Misconduct

All acts of dishonesty in any work constitute academic misconduct. This includes, but is not limited to, cheating, plagiarism, fabrication of information, misrepresentations of a student's academic performance, and abetting any of the above. This includes submitting papers that reflect the work of a group rather than the work of an individual. **(Be very careful about this. In your projects and on your exam rewrites, you may work in groups. However, the written work you submit to me MUST BE YOUR OWN INDEPENDENT COMPOSITION.)** The Academic Standards and Disciplinary Procedures of the University of Wisconsin will be followed in the event that academic misconduct occurs. Students should refer to the UWSP Community Rights and Responsibilities 2008 – 2009 Rules and Regulations Governing Faculty, Staff, and Students for more information. Copies are available on the web or from the Coordinator of Student Rights and Responsibilities.

Disability and Assistive Technology Center

The Americans with Disabilities Act (ADA) is a federal law requiring educational institutions to provide reasonable accommodations for student with disabilities. For more information about UWSP's policies, check : <http://www.uasp.edu/stuaffairs/Documents/RightsRespns/ADA/rightsADAPolicyInfo.pdf> If you are registered with the Disability and Assistive Technology Center, please contact me as soon as possible to plan any course accommodations that may be necessary. If you have a disability but have not contacted the DATC, please call 346-3365 or visit 609 LRC to register for services.

Lecture Schedule

Date	Lecture Topics	Reading	Assignments
Sept 5	Introduction/Scientific Study of Life	Chapter 1	
Sept 10	The Chemicals of Life	Chapters 2 and 3	
Sept 12	Cells	Chapters 3 and 4	
Sept 17	How Cells Work	Chapter 5	
Sept 19	Chemical Energy in the Cell	Chapter 6	
Sept 24	Photosynthesis	Chapters 7	
Sept 26	Cellular Reproduction	Chapter 8	
Oct 1	Inheritance	Chapter 9	
Oct 3	Genes and their control	Chapters 10 and 11	
Oct 8	DNA Technology and Genomics	Chapter 12	
Oct 10			Exam I
Oct 15	Evolution 1	Chapter 13	
Oct 17	Evolution 2	Chapter 14	
Oct 22	Evolution 3	Chapter 15	Exam I rewrite due
Oct 24	Microbes, Protists, Fungi	Chapters 16 and 17	
Oct 29	Plants and Invertebrate Animals	Chapters 17 and 18	
Oct 31	Vertebrates and function	Chapters 19 and 20	
Nov 5	Nutrition	Chapters 21	
Nov 7	Gas exchange and circulation	Chapter 22 and 23	
Nov 12			Exam II
Nov 14	Reproduction and Development	Chapter 27	
Nov 19	Plant Growth	Chapters 31 and 32	
Nov 21	Plant Nutrition and Control Systems	Chapters 32 and 33	Exam II rewrite due
Nov 26	The Biosphere	Chapters 34	
Nov 28	Behavioral Adaptations	Chapter 35	Project Due
Dec 3	Populations Ecology	Chapter 36	
Dec 5	Communities and Ecosystems	Chapter 37	
Dec 10	Conservation Biology	Chapter 38	
Dec12			Exam III
Dec17-	Final Exam 12:30-2:30 pm		Final

Lab Schedule

Week of	Lab Topics
Sept 3	No Lab
Sept 10	Lab B. Microscopy <i>and</i> Lab C. Scientific method
Sept 17	Lab D. Biochemistry of foods /
Sept 24	Lab E. Exploring Enzymes <i>and</i> Lab F. Introduction to the Cell
Oct 1	Lab H. DNA, Asexual Reproduction/ Cell Cycle
Oct 8	Lab I. Sexual Reproduction, Meiosis, Genetics and Inheritance
Oct 15	Lab Q: Modeling Natural Selection
Oct 22	Lab J. Biological Classification
Oct 29	Lab L. Bacteria, Protist, Fungal diversity
Nov 5	Lab M. Plant Diversity I
Nov 12	Lab N. Plant Diversity II
Nov 19	Thanksgiving Break: No labs
Nov 26	Lab O. Animal Diversity I
Dec 3	Lab R. Web of life from Owl Pellets
Dec 10	Lab T. Ecology and Soil Invertebrates