

*Biology II*  
&  
*Biology II Lab*  
*Sierra Nevada*  
*College*



*“Empowering students as architects of their own learning.”*

*Course Overview*

Course Codes & Sections:	BIOL 102 – Section 1 BIOL 106 – Section 1
Course Title (Credits):	Biology II (3) Biology II Lab (1)
Term & Year:	Spring 2014
Course Ref. Nos. (CRN):	BIOL 102: 10119 BIOL 106: 10121
Instructor:	Dr. Steve Ellsworth
Phones:	Office: 775-831-1314 x7457 Cell: 775-742-9480
Email:	<a href="mailto:sellsworth@sierranevada.edu">sellsworth@sierranevada.edu</a>
Office:	TCES 225
Office Hours:	MW 7:00AM – 8:00AM; 11:30AM – 2:30PM T 8:00AM – 10:00AM; 1:00 PM – 2:00PM Or by appointment
Class Meeting Times:	BIOL 102: MW 2:30PM-3:45PM BIOL 106: T 10:00AM-12:45PM
Location:	BIOL 102: TCES 206 BIOL 106: TCES 204
Required Text and Materials	<i>Principles of Life</i> by Hillis <i>et al.</i> SimBio lab downloads (ready on 2/3)
Required Computer	Laptop computer with the Microsoft Office software and an Internet connection.
Course Moodle Website	<a href="http://sncmoodle.sierranevada.edu/course/view.php?id=224">http://sncmoodle.sierranevada.edu/course/view.php?id=224</a>

## *Course Descriptions*

### **BIOL 102: Biology II (3)**

Prerequisite: BIOL 101. Corequisite: BIOL 106. A study of the diversity of life including topics on bacteria, protists, fungi, plants, and animals. An emphasis is placed on ecological and evolutionary processes that have given rise to the immense diversity of organisms. Topics on vertebrate body structure and function are also covered.

### **BIOL 106: Biology Lab II (1)**

Prerequisites: BIOL 101, 105. Corequisite: BIOL 102. Laboratory and field exercises to accompany BIOL 102.

## *Instructional Strategies*

- The lecture period (BIOL 102, 3 credits) is composed of lecture/discussion and note taking, active learning, and multimedia presentations. Many course preparation assignments will be given so that major concepts can be understood before class periods, which will set up active learning and application exercises in class.
- The lab (BIOL 106, 1 credit) utilizes laboratory demonstrations, field trips, data collection, and discussion to illustrate major concepts of biology and scientific inquiry.

## *Student Outcomes*

### **The student will demonstrate:**

- a sufficient understanding of the diversity of bacteria, protists, fungi, plants, and animals, and the anatomy and physiology of plants and animals, to be successful in upper division biology courses;
- an appreciation of the diversity of organisms sharing their environment, and will become sensitive to ethical and social issues relating to the diversity of life;
- the ability to apply principles of ecology and evolution towards an understanding of biological diversity;
- skills at reading and comprehending science texts and brief science articles;
- skills in critical analysis, logic, and problem solving involving facts and concepts of biology;
- an ability to answer questions about biology like those on standardized exams (such as the GRE, MCAT, or senior exit exams);
- communication skills concerning scientific concepts;
- competence in basic compound microscopy techniques, techniques of observation, and principles of the scientific method that are essential in the repertoire of field and laboratory methods in modern biology.

### *Tentative Schedule*

*NOTE – class topics, exam dates, and any other aspect of the class schedule are subject to change upon notification by instructor. The Class Announcements section of the Moodle course website and in-class announcements will be used to alert students of changes to the syllabus.*

CLASS DATES	TOPICS	Hillis Chapters
W 1/22	Mechanisms of Evolution	15
M 1/27, W 1/29	Mechanisms of Evolution, Reconstruction Using Phylogenies	15,16
M 2/3, W 2/5	Speciation, History of Life on Earth	17,18
M 2/10, W 2/12	History of Life on Earth	18
W 2/19	Exam I	
M 2/24, W 2/26	Bacteria and Viruses Origin and Diversification of Eukaryotes	19, 20
M 3/3, W 3/5	Evolution of Plants, Evolution and Diversity of Fungi	21, 22
M 3/10, W 3/12	The Plant Body, Plant Nutrition and Transport	24, 25
M 3/17, W 3/19	SPRING BREAK	
M 3/24, T 3/25, W 3/26	Animal Origins and Diversity	23
M 3/31, W 4/2	Physiology, Homeostasis, Temp Regulation, Nerve Impulses	29, 34
W 4/2	Exam II	
M 4/7, W 4/9	SimBio Labs and Poster Preparation (Steve absent)	
M 4/14, W 4/16	Organisms and Their Environment	42
M 4/21, W 4/23	Organisms and Their Environment, Populations	42, 43
M 4/28, W 4/30	Populations and Species Interactions	43, 44
M 5/5	Ecological Communities	45
W 5/7	Exam III	

## Tentative Lab Topics

Dates	Topic
T 1/21	Introduction to Course, Major Concepts, <i>Evolution</i> Video
T 1/28	Hardy-Weinberg Simulations
T 2/4	Sickle Cell and Electrophoresis
T 2/11	Principles of Taxonomy Using Woody Plants, Adaptations
T 2/18	Population Demographics – Virginia City Cemetery
T 2/25	Bacteria/UV/Sunscreen Lab
T 3/4	SimBio Lab
T 3/11	SimBio Lab
T 3/18	SPRING BREAK
T 3/25	BIOL 102 section topics
T 4/1	Growth Rate and Dispersion of Lodgepole Pines
M 4/7, T 4/8, W 4/9	Growth Rate and Dispersion of Lodgepole Pines, SimBio Lab, Poster Preparation (Steve absent)
T 4/15	Poster Preparation
T 4/22	Poster Preparation
T 4/29	Biology II Symposium
F 5/2	Science Symposium (4:00PM - 7:00PM)
T 5/6	Open

## *Methods of Assessing Student Outcomes*

### Grading:


- The lecture (BIOL 102) and the lab (BIOL 106) grade will be the same.
- The course is graded on a straight scale (A 93-100, A- 90-92, B+ 87-89, B 83-86, B- 80-82, C+ 77-79, C 73-76, C- 70-72, D+ 67-69, D 63-66, D- 60-62, T 0-59) unless a shift downward in the scale is appropriate (based on performance of the entire class).
- Your grades on all work will be posted in Moodle. It is your responsibility to check the grades to make sure that there are no errors. Please contact your instructor by e-mail ([sellsworth@sierranevada.edu](mailto:sellsworth@sierranevada.edu)) if there is an incorrect or missing grade.

**Point summary:**

In-class exams (3 @ 100 pts. each)	300 pts.
Final exam	200 pts.
Assignments – In-Class, Lab, and CPAs	200 pts.
<u>Poster and Presentation</u>	<u>300 pts.</u>
TOTAL	1000 points

- Late work policy: No late work will be accepted unless approved by the instructor. All due dates and times for assignments will be posted on the course Moodle site.
- Exams I, II, and III will test on material covered since the previous exam (i.e. they are not cumulative). Material from either lecture or labs can be on exams. Exams can only be made up if there is permission giving prior to the exam by the instructor; otherwise no credit will be given. All of the exams (excluding the final) consist of 20 multiple choice questions (2 points each), and 6 essay questions (10 points each). The cumulative final exam will be open during the entire final exam week and it will consist of 50 multiple choice questions (4 points each) and be administered through Moodle – it will be similar to the types of questions on the Biology GRE and MCAT. The final must be taken during the 3-hour final exam period in the classroom and no outside materials or websites may be used.

Exam	Date	Hillis <i>et al</i> chapters
Exam I	Wednesday, 2/19	15, 16, 17, 18
Exam II	Wednesday, 4/2	19, 20, 21, 22, 23, 24, 25, 29, 34
Exam III	Wednesday, 5/7	42, 43, 44, 45
Final	Monday, 5/12 11:30AM-2:30PM	Cumulative

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- The rationale for grading assignments is based on a 20 point system (points may be doubled for larger assignments) and consists of the following:

#### 20 points

- ✓ All portions of the assignment are completed
- ✓ It is obvious that a high-quality and in-depth effort was put into the assignment
- ✓ If any answers or computations are incorrect they are not major mistakes or do not hinder understanding of the material
- ✓ Interpretations are relevant and concise, and yet have enough information to convey an understanding of the material
- ✓ It is obvious that no answers were simply copied from another student or group, although answers may be similar from students or groups that work together

#### 15 points

- ✓ All portions of the assignment are completed or possibly only a few very minor components are not completed
- ✓ A quality effort was put into the assignment but it may lack some depth and understanding
- ✓ There are at least one or a few errors that result from a misunderstanding of the material
- ✓ Interpretations are mostly relevant but there may be some lack of understanding of the material
- ✓ It is obvious that no answers were simply copied from another student or group, although answers may be similar from students or groups that work together

#### 10 points

- ✓ The assignment is most likely not completed
- ✓ The effort put into the assignment cannot be described as quality work
- ✓ There are at least several errors that result from a misunderstanding of the material
- ✓ Interpretations are frequently irrelevant and there is often a misunderstanding of the material
- ✓ It is obvious that no answers were simply copied from another student, although answers may be similar from students who work together

#### 5 points

- ✓ The assignment is not completed
- ✓ The effort can be described as minimal and half-hearted
- ✓ There are multiple errors that result in a misunderstanding of the material
- ✓ Interpretations are mostly irrelevant and there is a clear misunderstanding of the material
- ✓ It is obvious that answers were simply copied from another student or group

#### 0 points

- ✓ The assignment was not turned in or basically no real work was put into it.

- The overall cumulative assignment grade will be converted to a percentage and a score out of 200 at the end of the course.
- The poster and presentation will be graded using the SNC Student Symposium rubric, which will be posted on the course Moodle website at least a month prior to the Biology Symposium.

## *ADA Accommodations*

In accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, students with a documented disability are eligible for support services and accommodations. If a student wishes to request an accommodation, please contact the Director of Academic Support Services, Henry Conover, at (775) 831-1314 x7534, [hconover@sierranevada.edu](mailto:hconover@sierranevada.edu) or go to the OASIS offices on the third floor of Prim Library within the first week of the semester.

## *The SNC Email System*

The SNC email system is the official communication vehicle among students, faculty members and administrative staff and is designed to protect the confidentiality of student information as required by the Family Educational Rights and Privacy Act of 1974 Act (FERPA). Students should check their college email accounts daily during the school year.

Students have a right to forward their SNC e-mail to another e-mail account (for example, @hotmail or @gmail). However, confidentiality of student information protected by FERPA cannot be guaranteed for SNC e-mail forwarded to an outside vendor. Having email redirected does not absolve a student from the responsibilities associated with official communication sent to his or her SNC email account.

## *Sanctions for Cheating and/or Plagiarism*

### **The Honor Code**

The faculty of SNC believes students must be held to high standards of integrity in all aspects of college life in order to promote the educational mission of the College and to encourage respect for the rights of others. Each student brings to the SNC community unique skills, talents, values and experiences which, when expressed within the community, contribute to the quality of the educational environment and the growth and development of the individual. Students share with members of the faculty, administration and staff the responsibility for creating and maintaining an environment conducive to learning and personal development, where actions are guided by mutual respect, integrity, responsibility and trust. The faculty and students alike must make diligent efforts to ensure high standards are upheld by their colleagues and peers as well as themselves. Therefore faculty and students accept responsibility for maintaining these standards at Sierra Nevada College and are obligated to comply with its regulations and procedures, which they are expected to read and understand.

### **Consequences of Violating the Student Honor Code**

SNC students and faculty share the responsibility for maintaining an environment of academic honesty. Thus, all are responsible for knowing and abiding by the SNC Faculty/Student Honor Code published in the current SNC Catalog. Faculty are responsible for presenting the Honor Code and the consequences of violating it to students at the start of their classes AND for reporting all incidences of academic dishonesty to the Provost. Students are responsible for knowing what constitutes CHEATING, PLAGIARISM and FABRICATION and for refraining from these and other forms of academic dishonesty. Violations of the Honor Code become part of a student's academic record.

1<sup>st</sup> Offense: Student receives a zero for assignment/exam and counseling with faculty on the honor code, consequences for violating the honor code, and the value of academic honesty in learning.

2<sup>nd</sup> Offense: Student fails course and receives counseling with faculty on the honor code, consequences for violating the honor code, and the value of academic honesty in learning.

3<sup>rd</sup> Offense: Student is expelled.

### *The Sierra Nevada College Mission Statement:*

Sierra Nevada College graduates will be educated to be scholars of and contributors to a sustainable world. Sierra Nevada College combines the liberal arts and professional preparedness through an interdisciplinary curriculum that emphasizes entrepreneurial thinking and environmental, social, economic and educational sustainability.

### *The Core Themes:*

Liberal Arts	Professional Preparedness
Entrepreneurial	Thinking Sustainability