

Course Code & No. - Section: BIOL110
Course Title (Credits): Cells, Inheritance, Evolution, and Animal Systems
Term & Year: Spring 2016
Course Ref. No. (CRN): 10073

Instructor: Gigi Giles
Phone(s): 775-354-8956 (weekdays, 10 am – 8 pm)
Email: ggiles@sierranevada.edu
Office: TCES 214 (the little lab)
Office Hours: TR 10:00 - 11:00 a.m., and by appointment

Class Meeting Time: TR 8:30 – 9:45 am
Location: TCES Room 204

Prerequisites: none
Corequisites: none

Course Description

This is a foundational biology course that surveys the basics of cell structure and function, mechanisms of inheritance, evolutionary theory, the diversity of organisms on earth, and animal structure, physiology, and homeostasis. Laboratory, field experiences, and assignments will model scientific thinking, giving students practice in using evidence to evaluate hypotheses, conclusions, and generalizations. This class does not substitute for BIOL 101/105 or BIOL 102/106.

Student Outcomes

The successful student will be able to:

1. Distinguish among various groups of living organisms and articulate their major roles in ecosystems
2. Articulate complexities of ecological and animal systems (physiology and homeostasis) using discipline-specific language
3. Apply concepts of inheritance and evolution by natural selection in making predictions about structure, function, and activities of organisms in ecosystems
4. Analyze and propose solutions to problems related to ecology, homeostasis, and environmental sustainability using concepts and facts of cell structure and function, inheritance, evolution by natural selection and animal systems
5. Use evidence to critically evaluate conclusions and claims about evolution, animal physiology, and ecological systems

Methods of Assessing Student Outcomes

Student outcomes will be assessed using the following:

Chapter reading and written summaries: Chapter reading and written summaries are assigned according to the Course Schedule (see page 5 of syllabus). Please read each assigned chapter and summarize it, in writing, according to the bullet points below. Your chapter summary should reflect your effort in reading the chapter. High marks will be given for well-written and comprehensive summaries. Plagiarism is not acceptable. Chapter summaries are due at the beginning of each associated class period; late work will not be accepted. Summaries must be no longer than one typed page. Eighteen chapter summaries are assigned: each is worth 15 points, and the lowest grade will be dropped.

- What hypothesis, theory, or research does the chapter discuss?
- What scientific evidence is presented in the chapter?
- How does the hypothesis, theory, or research, and associated evidence apply to real world issues?

Chapter quizzes: Quizzes are based on Chapter Readings and end-of-chapter questions. They are worth 15 points each. Your best 13 of 18 quizzes will count toward your grade.

Student-led presentations and written reports: The course includes four student presentations. Each presentation is worth points. Presentations are 15-20 minutes long and include at least five PowerPoint slides. You must submit, in writing, a report summarizing your presentation. It should be in complete sentences and paragraph form. Do not submit a list of your PowerPoint text, and do not plagiarize. The written report must include a minimum of five references, two of which are from a peer-reviewed scientific journal. I encourage you to work in groups for the presentation. Each student must submit an original report. Projects will be evaluated according to the SNC rubric. Late work will not be accepted.

Participation in class discussions and activities: Attendance and participation are crucial to your success in BIOL 110. Attendance/participation is worth 10 points per class meeting. The highest 27 of 30 marks will contribute to your grade.

Written, in-class, closed-book, closed-computer comprehensive final exam: The final exam will assess your understanding of course objectives, your ability to discuss (in writing) using course-specific language, and your critical thinking skills. It is worth 100 points.

Question Stems: Students will have the opportunity to earn five points for submitting candidate test questions, using question stems.

Assessment Due Dates: To be fair to all students, all assessments must be submitted when due. I will not accept any work after the due date. In the case of a medical circumstance or family emergency, students must contact me, in writing, prior to the assessment deadline. If you know in advance that you will be absent, contact me, in writing, and arrange to turn in your work ahead of time.

Bonus Points: If you are reading this, notify me by email before January 26. You've earned five bonus points!

Instructional Strategies

This course is designed in lecture and lab format. Course material will be discussed in lecture, as a group, and in open conversation. Cell phone use is prohibited. If you need to respond to your phone, please step out of the classroom.

Required Texts and Materials

1. *Biology for a Changing World, with Physiology*; Second Edition, W. H. Freeman and Company, New York, NY, 2014; ISBN: 978-1-4641-5113-2
2. Laptop computer (one that meets the published SNC Laptop Requirements)
3. Notebook, pen, and paper

Recommended Texts and Materials

The APA Style Handbook; Third Edition, Able Baker; Addison-Wesley; (c) 2006; ISBN: 0-201-78129-8

Attendance

Attendance is mandatory. Exceedingly active participation may be rewarded with bonus points at the end of the course. Excessive tardiness and early exits will lower your grade. If you will be absent, please email me in advance, and make arrangements.

Research Project

Any research project involving human or animal subjects must be submitted to the College Research Committee for approval. Submit your proposal to your instructor by January 30, 2016.

Class Requirements

All students are required to bring a laptop computer to each class meeting. Cell phones and pagers must be turned off or set to 'silent mode'.

Prim Library Resources

Using the library's resources effectively (not just Internet resources) contributes to developing each of SNC's core themes by exposing students to high quality academic resources, diverse opinions, new ideas, and a future that includes building on a liberal arts education. In this course, you will be expected to utilize the library's resources (either on-site or remotely) as you complete your assignments.

Prim Library Resources for BIOL 110 includes, but is not limited to:

1. Books (can be checked out):
In general, books related to biology have Library of Congress Classification numbers ranging from QH 300 through QK. However, you will find books related to our course with other LCC numbers, so search the Prim Library Catalog using key words related to your presentation paper topic.
2. Electronic databases (for peer-reviewed research articles, reviews, newspaper and magazine articles):
Electronic databases most likely to include articles related to your presentation topics are EBSCO: Academic Search Premier, Environment Complete, General Science Collection, GreenFILE, Health Source, Newspaper Source, and TOPICsearch; BioOne; and GREENR.
3. Hardcopy periodicals: Prim Library has current subscriptions for Science, New Scientist, Science News, and National Geographic Magazine. Any of these are likely to have articles on your topic. Full-text articles from many more periodicals are available through the electronic databases.
4. Lib Guides: <http://Libguides.sierranevada.edu> These web pages contain instructions about how to use resources available at Prim Library, how to evaluate the appropriateness of information from the Internet for a research paper, how to cite sources, and other topics related to finding and using information.

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. 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.

1st 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.

2nd 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.

3rd Offense: Student is expelled.

Grading Policy

Participation/Attendance	Best 27 of 30	10 pts. each	270
Chapter Summaries	Best 17 of 18	10 pts. each	170
Chapter Quizzes	Best 13 of 18	15 pts. each	195
Presentations	4	65 pts. each	260
Final Exam	1	100 pts.	100
Question Stems	Max. 5	5 pts.	5
TOTAL			1000

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, office in Prim Library: PL-304.

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.

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

Class Schedule

WEEK	DATE	TOPIC	Presentations	Ch. Summary due	Quiz due
1	Jan. 19	Intro, Syllabus, Safety			
	Jan. 21	Ch. 1: Process of Science		yes	yes
2	Jan. 26	Ch. 2: Chemistry and Molecules of Life		yes	yes
	Jan. 28	Ch. 5: Energy and Photosynthesis		yes	
3	Feb. 2	Ch. 5 continued			yes
	Feb. 4	Ch. 6: Dietary Energy and Cellular Respiration		yes	
4	Feb. 9	Ch. 6 continued			yes
	Feb. 11	Ch. 7: DNA Structure and Replication		yes	yes
5	Feb. 16	Ch. 8: Genes to Proteins	Pres. 1	yes	
	Feb. 18	Ch. 8 continued	Pres. 1		yes
6	Feb. 23	Ch. 9: Cell Division and Mitosis		yes	yes
	Feb. 25	Ch. 11: Single-gene Inheritance and Meiosis		yes	yes
7	Mar. 1	Ch. 14: Natural Selection and Adaptation		yes	
	Mar. 3	Ch. 14 continued			yes
8	Mar. 8	Ch. 15: Nonadaptive Evolution and Speciation		yes	
	Mar. 10	Ch. 15 continued			yes
	Mar. 15	SPRING BREAK			
	Mar. 17				
9	Mar. 22	Ch. 16: Evidence for Evolution	Pres. 2	yes	
	Mar. 24	Ch. 16 continued	Pres. 2		yes
10	Mar. 29	Ch. 17: Life on Earth		yes	yes
	Mar. 31	Ch. 18: Prokaryotic Diversity		yes	yes
11	Apr. 5	Ch. 19: Eukaryotic Diversity		yes	
	Apr. 7	Ch. 19 continued			yes
12	Apr. 12	Ch. 25: Overview of Physiology	Pres. 3	yes	yes
	Apr. 14	Ch. 28: Respiratory System	Pres. 3	yes	yes
13	Apr. 19	Ch. 29: Central Nervous System		yes	yes
	Apr. 21	Ch. 32: Plant Physiology		yes	
14	Apr. 26	Ch. 32 continued			yes
	Apr. 28	Review	Pres. 4		
15	May 3	Review	Pres. 4		
	May 5	Study Day – NO CLASS			
Finals	May 6, 7, 9, 10, 11	FINAL EXAM: DATE ???			