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| <b>Course Code &amp; No. - Section:</b> | <b>BIOL 102 section 1</b>  | <b>BIOL 106 section 1</b>  |
| <b>Course Title (Credits):</b>          | Biology II (3 credits)   | Biology II Lab (1 credit)  |
| <b>Term &amp; Year:</b>                 | Spring 2016  |  |
| <b>Course Ref. No. (CRN):</b>           | 10049 (BIOL 102)   | 10074 (BIOL 106)   |
| <b>Instructors:</b>                     | Dr. Suzanne Gollery (102) and  | Gigi Giles (106)   |
| <b>Phone(s):</b>                        | Office: 775-831-1314 ext7456<br>Cell: 775-813-4215 (8 a.m. – 9 p.m.)                   | Cell: 775-544-9052 (8 am – 9 pm)                                     |
| <b>Email:</b>                           | <a href="mailto:sgollery@sierranevada.edu">sgollery@sierranevada.edu</a>               | <a href="mailto:ggiles@sierranevada.edu">ggiles@sierranevada.edu</a> |
| <b>Office:</b>                          | TCES, room 223   | TCES, room 214   |
| <b>Office Hours:</b>                    | M 11:30 a.m.–12:45 p.m.<br>W 2:30–3:45 p.m.<br>R 10:00-11:30 a.m.<br>or by appointment | By appointment   |
| <b>Class Meeting Time:</b>              | MW 4:00 – 5:15 p.m. (lecture)  | F 2:30 – 5:15 p.m. (lab)   |
| <b>Location:</b>                        | TCES 205 (BIOL 102)  | TCES 204 (BIOL 106)  |
| <b>Prerequisites:</b>                   | BIOL 101 and BIOL 105  |  |
| <b>Corequisites:</b>                    | BIOL 102 and BIOL 106 are co-requisites  |  |

### Required Texts and Materials:

1. Hillis DM, Sadava D, Hill RW, and Price MV. (2014) *Principles of Life, 2<sup>nd</sup> edition*, Sunderland, MA: MacMillan/WHFreeman/Sinauer Associates. ISBN-13: 9781464189838. This is a hardbound text; new copies have access to online materials that can help students learn the content. You may also purchase the loose-leaf version (so you can bring only chapters that you need to class) or the eText version (which will give you the online materials, but only lasts for two years). Online access is recommended, but not required. This is the same book that was used in BIOL 101 last fall semester.
2. 3-ring binder (available at the bookstore) to hold notes, handouts and work returned with feedback plus paper for in-class activities.
3. A set of colored pencils with 8 or more colors for lab.
4. Access to a computer (one that meets the published SNC Computer Requirements) and internet.

### Course policies:

#### 1) Food and drinks:

Food and beverages, even drinking water, are **FORBIDEN by state and federal safety regulations in TCES 204**, the biology lab. You must leave open food and beverages outside of the lab room or leave them inside your bags. You may discretely consume food or beverages in TCES 205. Please clean up after yourself!

#### 2) Attendance

Success in Biology II and Lab is significantly influenced by participation in class and lab activities. Although I will not take attendance, **YOU MUST BE IN CLASS TO TURN IN CPAs**. If you are ill for more than a week, are competing with an SNC sport team, or have a family emergency or military duty that takes you away from campus, I may elect to excuse your absence and allow you to turn in work. However, I will not excuse absences because you overslept, had to work, drove someone else to their commitment, went on an SNC-sponsored extracurricular trip, or missed less than a week because of illness.

**3) Late work will NOT be accepted:**

Late CPAs, lab assignments and extra credit will not be accepted. Work is due at the beginning of the class period on the due date unless state otherwise in the syllabus and will not be accepted more than 10 minutes after the start of class. You are welcome to turn in work early by email, in person, or slipping it under my office door.

**4) Electronic devices:**

You have permission to record BIOL 102 class for study later. Cell phones, tablets, and laptops may be used to access online resources or take notes in class. I may confiscate phones, MP3 players, tablets, or laptops that are used for non-class purposes until the end of class. If you must text or call someone during class time in an emergency, please leave the room.

**5) E-mailed work:**

All work may be submitted by e-mail OR in hard copy. You may e-mail MS Word or pdf files. **Please include your name in the file name**, as many students could send a file named "CPA 1". I will reply to verify that e-mailed work was received. It is your responsibility to follow up if I do not reply about e-mailed work. If you suspect an emailing problem, please ask to submit work late.

**6) Extra credit:**

I will offer extra credit for additional work with instructional value regularly throughout the semester. You may earn up to 60 extra credit points, 5% of the total number of points possible for the class. Students who have read this syllabus may send me an email in which you summarize the four CPA options prior to the second class meeting on Monday, January 25, to receive 3 points extra credit as a reward for doing this important reading assignment. The last date to submit extra credit without specific due dates is **Monday, April 27, 2015**.

**7) Modifications to the BIOL 102/106 course syllabus:**

This syllabus and schedule is intended to provide students with a clear and accurate outline of course content, student outcomes, class topics, assignments and due dates, and exam dates. Your instructors reserve the right to make announced changes to the syllabus and class schedule if it is in the best interest of the students to do so.

**8) How to learn the most and feel the best about this class:**

Biology II is a challenging class and there will be times that you wish it was easier. However, if you focus on how much you are learning and how it will help you succeed in future biology and environmental science courses, you will find it easier to do the work. I have carefully selected reading or viewing assignments and class activities to teach you content and skills that you will need for a career in science, environmental policy, or a health field. I am glad to give you extra help if you need it, so please take advantage of office hours. I am better at answering email than to my phone, but you will usually get a response from me by text.

Please treat me, your classmates, and yourself with respect. We are all working toward the same goal, helping everyone in the class learn enough biology to be successful. You will learn more if you help each other out.

**9) Citing sources:**

Cite sources using the CSE citation sequence (number) system. Here is a straightforward description of this citation system: <http://library.austincc.edu/help/CSE/CSE-cs.php> Scientists routinely cite original sources for factual information that is not widely known. For example, you wouldn't cite a source when stating that mutations introduce new genetic variability into the human genome, but you would cite a source when stating that mutations accumulate in human DNA at an average rate of 175 mutations per diploid genome per generation<sup>1</sup>.

1. Nachman M W, Crowell S L. Estimate of the mutation rate per nucleotide in humans. Genetics 2000; 156: 297-304

### Grading Policy

Since BIOL 102 and 106 are corequisites, and the material of each is so integral to the other, assignments from each will contribute to an overall point total and the same letter grade will be awarded to both courses. The grading curve is based on a 1200-point scale, with 75% of points from BIOL 102 and 25% from BIOL 106. Sierra Nevada College awards half grades (e.g., A- or B+), so a student with a point total within 1.5% of the cutoff for the letter grade will earn the appropriate half grade.

### Grading Curve

Students may earn points in the following ways:

|   |             |                    |
|---|-------------|--------------------|
| A | 90 – 100%   | 1080 – 1200 points |
| B | 80 – 89.9 % | 960 – 1079 points  |
| C | 68 – 79.9%  | 816 – 959 points   |
| D | 58 – 67.9%  | 696 – 815 points   |
| F | <58%        | <696 points        |

#### BIOL 102 (75%):

|   |            |
|---|------------|
| CPAs – 18 best at 20 points each            | 360 points |
| 2 essays – 30 or 40 points each             | 70 points  |
| 2 oral presentations – 30 or 40 points each | 70 points  |
| Exams – 4 at 100 points each                | 400 points |

#### BIOL 106 (25%):

|   |            |
|---|------------|
| Lab assignments – 12 best at 20 points each       | 240 points |
| (Monterey field trip assignment counts as 2 labs) |            |
| 1 written lab report –                            | 60 points  |

**Total** 1200 points

**Midterm grades:** Midterm grades will be calculated using all work due through Wednesday, March 11, 2015. There will not be a midterm exam, per se, although Exam 2 is scheduled for Wednesday, March 11.

### Assignment details:

#### Class preparation assignment:

**Learning goals for the assignment:** Scientific studies on how people learn have shown repeatedly that we learn and remember more when we are active learners. This means that you will remember and be able to apply more facts and concepts about biology for a much longer time if you learn them by reading and writing about them, communicating about them with other people, and applying them to solve problems in different contexts, than if you come to class and passively listen to me lecture. The CPAs give you a chance to learn actively by summarizing the reading assignment or answering questions related to the reading assignment. Class time will be spent on answering your questions and murkiest points (see one-minute essays, below), work in pairs or small groups to communicate about course content, and apply challenging and important concepts and facts to new situations. Sometimes I will lecture about particularly difficult material. You will gain much more from class activities if you come to class prepared, having completed the reading/viewing assignment and struggled with CPA questions. You will be confused about what you need to know if you do not complete the CPAs, because I will not tell you everything that you need to know to pass the exams in class.

**How to do the CPA assignment:** Because people learn in different ways, there are four options for the class preparation assignment – you only do one option.

Option 1: Answer Suzanne's CPA Questions – read the assigned Hillis pages and then answer Suzanne's CPA questions in your own words. The CPA questions are in a separate handout posted on Moodle.

Option 2: Answer CHECKpoint questions at the end of Hillis Concepts assigned for that date. These are in the text.

Option 3: Outline the Hillis reading assignment IN YOUR OWN WORDS. No credit will be given for outlines that plagiarize the text, for example, restating concept titles and subtitles from the reading assignment.

Option 4: Write down questions that you have about the reading assignment. Then do some research to try to answer your questions and record where you looked for information. Answer your questions if possible. If you are still confused after trying to learn more, this is ok, just try to explain what part of the material you don't understand.

You may do any of the CPA options for any due date. For example, you can outline the chapter for CPA 1, answer my CPA questions for CPA 2, and write your own questions and research their answers for CPA 3. However, all Biology II students are responsible for being able to answer the CPA and CHECKpoint questions by exam time.

If you turn in your CPA as a hard copy, you should have a second copy (file or hard copy) on which to take additional notes during class and study sessions with classmates. You should expect to spend up to twice as much time preparing for class and studying as you spend in class. Due dates are given on the schedule of classes (right hand column) and CPA assignment handouts.

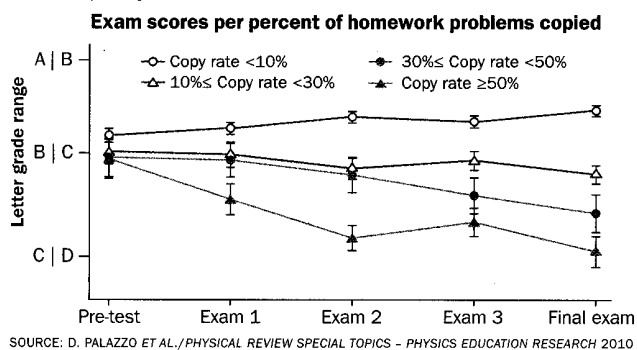
*Scoring and feedback from the assignment:* CPAs will be scored for completeness (effort), that is, students will receive full credit for making a good attempt to answer all questions, regardless of whether or not they are ideal answers. I will give you written feedback on some answers, but not all. Students are responsible for working with their teams to make sure that all team members eventually have complete answers that can be effective resources for class activities, lab exercises, and study for exams. Students should keep their evolving CPA answers in their class binders.

*Collaboration and individual work:* You are encouraged to work with your learning teams or other classmates on CPAs and other class assignments. **However, each student must write answers to questions in his/her own words. If your prose on biology assignments is identical to or paraphrased from other students work, the text, Wikipedia, or other published or internet sources, you will receive a ZERO GRADE for the assignment and consequences for violating the academic honesty policy may apply. If two students turn in identical or closely paraphrased work, both will receive zero grades. Cheaters never learn!**

[More here.](#)

### Science Stats | CHEATERS NEVER LEARN

A study of MIT students found that those who copied others' homework more frequently did worse on exams over the course of a semester.



4 | SCIENCE NEWS | May 8, 2010

### Student questions:

You are encouraged to write questions about anything from the reading assignments, CPAs, or class activities that confuse you and e-mail these questions to me. Questions may be submitted prior to any class, not just classes with CPA or other assignment due dates. I will make time to answer questions and go over murky points in class, so your questions will direct the class activities to help you understand what you find most difficult. **Students earn 2 points extra credit for submitting one or more question for each class period.**

One-minute essays: In the last couple of minutes of each class, you will have time to write one-minute essays in which you briefly state, in a complete sentence or two, either:

1. The murkiest point, that is, one concept or bit of content information that you found the least understandable (most confusing) during that class period.
2. Or, if you understood everything clearly, the most important concept or bit of content information covered in that class period.

I will read the one-minute essays carefully prior to the next class period and structure the class activities to clear up the murkiest points. One-minute essays will also be used to take attendance; students who are present, but do not turn in one-minute essays, may be counted as absent.

Essays: You will be asked to write two concise essays on biology topics and cite sources for facts that are not widely known. Excellent writing skills, especially the ability to write concisely, are essential for professional success, no matter what your career. Being able to find sources for factual information and document them to support your logical reasoning is also an important professional skill. The essay assignments are designed to let you practice these skills. You should expect similar assignments for many of your SNC courses, as we faculty intend that SNC graduates be successful writers.

**Oral presentations:** You will be asked to work with a team to design and deliver two oral presentations on biology topics, including citing sources for facts that are not widely known. Knowing how to give effective oral presentations is also essential for professional success, no matter what your career. Few professionals work alone and scientists hardly ever do, so practice working effectively in a team is critical to your future success. The oral presentation assignments are designed to let you practice these important skills. You should expect similar assignments for many of your SNC courses, as we faculty intend that SNC graduates be effective speakers and know how to work in teams.

**Exams:** Four exams worth 100 points each will cover material from the previous exam, although many biology concepts build, so you are responsible for remembering and using content from previous exams throughout the course. Exams include multiple choice questions, since this format is used on standardized exams, such as the GRE and MCAT. Other questions may include short answer, essay, or true-false formats. Exam questions will ask you to apply concepts and facts, so you will see questions with new detailed information given in the question and will be expected to use these details plus concepts you did learn in class to figure out an answer. You will have hard copy, closed book exams.

**Lab Assignments:** All lab activities will have associated assignments. Lab assignments will vary significantly in format, so individual instructions will be given for each assignment and can be downloaded from Moodle. Some lab assignments will be turned in at the end of the lab period. Others will require additional time and will be due at the beginning of lab class on the due date listed on the schedule of classes. Lab assignment due dates are given on the schedule of classes. All students will turn separate lab assignments written in their own words, even when lab work is done as a team.

**Lab Report:** You are responsible for writing one lab report about the antiseptic/disinfectant experiment that is part of the prokaryotic diversity lab. Instructions are the same as for BIOL 101 lab reports and are posted on Moodle. Students who are not happy with their lab report scores may rewrite the lab report for up to 90% credit.

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

**Student Outcomes for BIOL 102/106:** Upon completion of Biology II and Lab,

1. Students mastering the material of Biology II will have sufficient understanding and recall of facts and concepts of evolution, systematics, the diversity of living organisms, plant anatomy and physiology, vertebrate anatomy and physiology, and population ecology to be successful in upper division biology and environmental science courses.
2. Students will demonstrate ability to answer questions about biology like those on standardized exams (such as the GRE, MCAT, or senior exit exams).
3. Students will communicate about and critique scientific concepts in paragraph and essay form.
4. Students will demonstrate skill at critical analysis, logic, and problem solving involving facts and concepts of evolution, systematics, diversity of living organisms, plant anatomy and physiology, vertebrate anatomy and physiology, and population ecology.
5. Students will demonstrate competence in basic compound (brightfield) microscopy techniques.

### Methods of Assessing Student Outcomes

Student outcomes will be assessed using the following:

1. Individual class preparation assignments based on assigned reading
2. In-class activities such as case studies, individual or team problem solving, discussions...
3. One-minute essays on the murkiest or most significant points at the close of each class
4. Laboratory assignments
5. Two individual scholarly essays on biology topics
6. Two small group oral presentations on biology topics
7. Four written in-class, closed-book exams
8. Written in-class, closed-book, comprehensive final examination



## Instructional Strategies

Biology II and Lab is a foundational science course, which means that you will learn facts and concepts about a wide range of biology subjects to gain a basic overview of our current understanding of how living organisms “work”. There is a lot of content to remember, including a large amount of discipline-specific vocabulary. This class will use the flipped classroom approach. This means that I will ask you to learn much of the easier content outside of class by reading the text book or other articles posted on Moodle, going to websites to learn, and reviewing what we did in class. Class preparation assignments (CPAs) will prompt you to make time for learning the easy material before class. We will apply the concepts from CPAs in class and sometimes I will lecture about more difficult subjects. You will get a lot out of this class if you work on the assignments that I have prepared to help you learn.

## 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 102 and BIOL 106: Biology II and Lab include, but are not limited to:

1. Books (can be checked out):  
In general, books related to biology have Library of Congress Classification numbers ranging from QH through RC. Books about biotechnology have LCC numbers beginning with TP. However, you will find books related to our course with other LCC numbers, so search the Prim Library Catalog using key words related to the topic that you are researching.
2. Electronic databases (for peer-reviewed primary source research articles, secondary source reviews, newspaper magazine articles, and online books): Electronic databases most likely to include articles on biology 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, Scientific American, and National Geographic Magazine. Any of these are likely to have secondary source articles about biology topics written for educated people who are not necessarily scientists. You will find these easy to read and articles will include references to primary source articles. 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, Prim Library resources for biology topics, how to evaluation the appropriateness of information from the internet for a research paper, how to cite sources, and other topics related to finding and using information.

## 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), 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.

## 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.

Cutting and pasting or copying phrases or sentences from internet sources, books, articles, or other students is a violation of the student honor code. If you consistently write using your own words, you will avoid plagiarizing or cheating.

### 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:** Four core themes from the SNC mission are woven through all courses and the life of the community at SNC.

**Liberal Arts**

**Professional Preparedness**

**Entrepreneurial Thinking**

**Sustainability**

## Unit One: Evolution and phylogenetic trees

| Week Day             | Date | Description   | Class preparation<br>(do this <u>before</u> class starts)   | Work due (at the <u>beginning</u> of class)                 |
|----------------------|------|---|---|---|
| <b>Week 1</b><br>Mon | 1/18 | <i>Martin Luther King Day</i>   |   |   |
| Wed                  | 1/20 | Review of inheritance, transcription, and translation   | Log in to Moodle, enroll in BIOL 102/106, download and read syllabus  |   |
| Fri<br>Lab           | 1/22 | Selection, genetic drift, and Hardy-Weinberg equilibrium lab<br><br>Web address for prelab hyperlink is <a href="http://www.phschool.com/science/biology_place/labbench/lab8/intro.html">http://www.phschool.com/science/biology_place/labbench/lab8/intro.html</a> | <b>Bring laptops to lab!!</b><br>Download lab handout, read lab exercise, and print if you want a paper copy<br>Prelab is <a href="#">here</a> – work through Intro and Key Concepts and stop before Design of the Experiment. Record your answers on paper and bring to lab. | Prelab: Your answers from questions in Key Concepts         |
| <b>Week 2</b><br>Mon | 1/25 | Processes of evolution  | Read Hillis Ch 15, concepts 15.1 – 15.4   | CPA 1 (class preparation assignment)                        |
| Wed                  | 1/27 | Regulation of gene expression   | Read Hillis Ch 11 (all)   | CPA 2   |
| Fri<br>Lab           | 1/29 | Genetic basis of evolution case studies:<br>1. Lactase persistence<br>2. Sickle cell hemoglobin<br>3. Stickleback fish armor  | Download lab materials, read lab exercise, and answer pre-lab questions   | Prelab<br>Selection, gen drift, and H-W equilibrium lab     |
| <b>Week 3</b><br>Mon | 2/1  | Evolution at the molecular level<br><u>Assign rewriting evolutionary history essay</u>  | Read Hillis Ch 15, concepts 15.5 – 15.7   | CPA 3   |
| Wed                  | 2/3  | Evolutionary history and phylogenetics  | Read Hillis Ch 16, concepts 16.1 – 16.3   | CPA 4   |
| Fri<br>Lab           | 2/5  | Great Clade Race<br>Hemoglobin Evolution  | Download lab materials, read lab exercise, and answer pre-lab questions   | Prelab<br>Gen basis of evolution                            |
| <b>Week 4</b><br>Mon | 2/8  | Speciation  | Read Hillis Ch 17 (all)   | CPA 5   |
| Wed                  | 2/10 | Classification and evolution lab (Parts A and B)<br><u>Assign virus presentations</u>   | Read Hillis Ch 16, concept 16.4<br>Download virus presentation handout  | CPA 6<br><u>Rewriting evolutionary history essay is due</u> |
| Fri<br>Lab           | 2/12 | Classification and evolution lab (Parts C and D)<br>Inoculate bacterial cultures for 2/19 lab   | Download lab materials, read lab exercise, and answer pre-lab questions   | Prelab<br>Great clade race and Hemoglobin evolution         |
| <b>Week 5</b><br>Mon | 2/15 | <i>President's Day Holiday – no class</i>   |   |   |
| Wed                  | 2/17 | <b>Exam 1: evolution and phylogenetics</b>  | Study for exam 1  |   |



**Unit 2: Diversity of microorganisms**

| Week Day             | Date      | Description  | Class preparation<br>(do this <u>before</u> class starts)  | Work due (at the <u>beginning</u> of class)                                    |
|----------------------|-----------|--|--|--|
| Fri Lab              | 2/19      | Prokaryotic diversity  | Download lab materials, read lab exercise, and answer pre-lab questions  | Prelab<br>Classification and evolution   |
| <b>Week 6</b><br>Mon | 2/22      | Prokaryotes – Domains Bacteria and Archaea   | Read Hillis Ch 19 (all)  | CPA 7  |
| Wed                  | 2/24      | Virus presentations  | Practice virus presentation with your team   | <u>Virus presentation slides</u> emailed to Suzanne by noon on Wednesday, 2/24 |
| Fri Lab              | 2/26      | Eukaryotic diversity<br>Gather data for antiseptic/disinfectant experiment<br>Inoculate fungi cultures for 3/4 lab | Read Hillis Ch 20 Concept 20.2<br>Download lab materials, read lab exercise, and answer pre-lab questions  | Prelab<br>Prokaryotic diversity lab is due at the <u>end of lab class</u>      |
| <b>Week 7</b><br>Mon | 2/29      | Eukaryotes that aren't fungi, animals, or plants   | Read Hillis Ch 20  | CPA 8  |
| Wed                  | 3/2       | Fungi  | Read Hillis Ch 22  | CPA 9  |
| Fri Lab              | 3/4       | Fungal diversity   | Download lab materials, read lab exercise, and answer pre-lab questions  | Prelab<br>Eukaryotic diversity   |
| <b>Week 8</b><br>Mon | 3/7       | Review for Exam 2  | <u>Bring your text and class notes to class</u><br>Work on your fungal diversity lab report <u>before</u> the exam, because it will help you learn about fungi | <u>Antiseptic/disinfectant lab report due</u>                                  |
| Wed                  | 3/9       | <b>Exam 2: Diversity of microorganisms</b>   | Study for exam 2   |  |
| Fri Lab              | 3/11      | Peer-review of antiseptic/disinfectant lab report  | <u>Bring your laptops to lab with your antiseptic/disinfectant file</u><br>Download peer-review form and read it   | Fungal diversity   |
| Mon - Fri            | 3/14-3/18 | <i>Spring break – no classes</i>   |  |  |

**Unit 3: Animal diversity and function**

| Week Day       | Date        | Description  | Class preparation<br>(do this <u>before</u> class starts)                  | Work due (at the <u>beginning</u> of class)   |
|----------------|-------------|--|--|---|
| Week 9<br>Mon  | 3/21        | Animal evolution and diversity<br><u>Assign unlikely animal essay</u>      | Read Hillis Ch 23, concepts 23.1 – 23.4                                    | CPA 10  |
| Wed            | 3/23        | More animal evolution and diversity  | Read Hillis Ch 23, concepts 23.5 – 23.7                                    | CPA 11  |
| Fri<br>Lab     | 3/25        | Animal tissues<br>Pre-trip meeting for Monterey Bay<br>Aquarium field trip | Download lab materials, read lab exercise,<br>and answer pre-lab questions | Prelab  |
| Week 10<br>Mon | 3/28        | Animal physiology overview   | Read Hillis Ch 29 (all)  | CPA 12  |
| Wed            | 3/30        | Transfer of information in animal<br>nervous tissue                        | Read Hillis Ch 34, concepts 34.1 – 34.3                                    | CPA 13<br><u>Unlikely animal essay<br/>is due</u>   |
| Fri<br>Lab     | 4/1         | Leave for Monterey Bay at start of lab                                     |  | Animal tissues lab due  |
| Fri - Sun      | 4/1-<br>4/3 | Monterey Bay weekend trip to observe<br>animal diversity in the field      | Open to all SNC science, ODAL/Env<br>science, and Sustainability students  | You must either attend<br>the pre-trip meeting on<br>3/25, or arrange to meet<br>with Gigi or Suzanne<br>for pre-trip instructions<br>and a gear list |
| Week 11<br>Mon | 4/4         | Sensory and nervous systems  | Read Hillis Ch 34, concepts 34.4 & 34.5                                    | CPA 14  |
| Wed            | 4/6         | Muscle contraction and movement  | Read Hillis Ch 33 (all)  | CPA 15  |
| Fri<br>Lab     | 4/8         | Exploring action potentials  | Download lab materials, read lab exercise,<br>and answer pre-lab questions | Prelab<br>Monterey Bay<br>Aquarium assignment   |
| Week 12<br>Mon | 4/11        | Water and salt balance   | Read Hillis Ch 36 (all)  | CPA 16  |
| Wed            | 4/13        | Water and salt balance virtual lab   | Download lab materials, read lab exercise,<br>and answer pre-lab questions | Prelab<br>Exploring action<br>potentials  |
| Fri            | 4/15        | <b>Exam 3: Animal diversity and<br/>function</b>                           | Study for Exam 3   |   |

**Unit 4: Plant diversity, structure, and function**

| Week Day       | Date           | Description  | Class preparation<br>(do this <u>before</u> class starts)  | Work due (at the <u>beginning</u> of class)                               |
|----------------|----------------|--|--|---|
| Week 13<br>Mon | 4/18           | Plant evolution and diversity  | Read Hillis Ch 21 (all)  | CPA 17  |
| Wed            | 4/20           | Flowering plant body structure<br><u>Assign plant adaptation presentations</u> | Read Hillis Ch 24 (all)<br>Download plant adaptation presentation instructions                                     | CPA 18  |
| Fri<br>Lab     | 4/22           | Plant diversity  | Download lab materials, read lab exercise, and answer pre-lab questions  | Prelab<br>Water and salt balance  |
| Week 14<br>Mon | 4/25           | Plant nutrition and transport  | Read Hillis Ch 25  | CPA 19  |
| Wed            | 4/27           | Plant growth and reproduction  | Read Hillis Ch 27 (all) and Ch 28, concept 28.1  | CPA 20  |
| Fri<br>Lab     | 4/29           | Plant responses to the environment<br>Exam 4 review                            | Read Hillis Ch 28, concepts 28.2 & 28.3<br>Download lab materials, read lab exercise, and answer pre-lab questions | Prelab<br>Plant diversity   |
| Week 15<br>Mon | 5/2            | <b>Exam 4: Plant diversity, structure, and function</b>                        | Study for Exam 4   |   |
| Wed-<br>Thurs  | 5/4-<br>5/5    | Reading days to study for final exams or finish final projects                 | Work on your plant adaptation presentation with your team  |   |
| Thurs          | 5/5            | SNC Student Symposium in TCES 139/141, 7:00 p.m.                               | Attend for extra credit  |   |
| Final exam     | 5/6<br>6:30 PM | Plant adaptation presentations<br>Biology II reflection                        | Practice your plant adaptation presentation  | <u>Plant adaptation presentation slides</u> are due <u>by noon on 5/6</u> |