**GENERAL BIOLOGY (BIOL 1B)** T/Th 1-2:15 Lecture 2:30-5:20 Lab

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**Course Description**: BIOL 1B is a continuation of BIOL 1A. This course covers the origin of life, evolution, classification, plant structure and function, ecology. BIOL1A is a prerequisite. It will serve as a base for learning more about the specific areas of biology in other courses.

**Discussion Topics**: (both semesters are listed here)

*BIOL 1A BIOL1B*

Cell Biology and biochemistry (Ch 1-12) Biodiversity (Ch 26-34)

DNA and Genetics (Ch 13-21) Plants form & function (Ch 35-39)

Animals, form and function (Ch 40-51) Evolution (Ch 22-25) & Ecology (Ch 52-56)

**Materials required**:

Textbook: Biology by Campbell, 9th edition Van de Graaff’s Photographic Atlas

Lab Handouts on Canvas Site for BIOL 1B Scantron for Exam # 1

“Bully for Brontosaurus” by Stephen J. Gould “Why Big Fierce Animals Are Rare” By Paul Colcineaux

**Student Learning Outcomes -** Big picture topics that I would hope you gather through the semester.

1) Explain the complexity of ecosystems, the component parts and humans place in the ecosystem. Critique current methods of dealing with ecosystems and ecological issues through discussion and seminar papers.

2) Demonstrate an awareness of continued threats to our global ecosystems and appraise individual efforts in environmental issues.

3) Explain how all organisms are connected by cell structure, energy sources and evolutionary lineage in class discussion and on exams. Correlate information on cell structure and animal systems learned in Bio 1A with evolutionary lineage discussed in Bio 1B.

4) Synthesize the information in class on ecology, evolution and organismal diversity in a research paper and oral presentation on a given topic.

5) Write clear, well organized lab reports. Draw accurate representations of microscope slide images to identify organisms of the living world in the laboratory. Analyze the results of laboratory experiments and evaluate sources of experimental error.

**Format and General Information**

 Biology is a complex and interconnected subject. Sometimes questions in lecture will lead us to explore topics that do not seem directly related to the subject matter at hand, but are important. Many students find it helpful to read the chapters before the lectures. You should print out the lab with enough time to read it over before class. After the initial explanation of the lab activities, you will work individually or in groups to complete the assignment. You are expected to budget your time to complete the assignment and you can decide when to take your breaks. If you finish your lab assignment early, you are encouraged to use the time for reviewing, asking questions from the lecture topics, or completing written work.

**Attendance**:

 You are expected to attend every class, arrive on time, and stay until the end of class. You are required to check in and out of the lab. If you have not done the work you are not allowed to turn in a lab report and get credit for the work done that day.

**Assessment (800 points):**

Exams (400 points)

To assess your understanding of lecture material, reading and lab activities, there will be 4 exams worth 100 points each. Exams will cover material for lecture and lab and are closed book. You must be able to recognize and define the terms learned in class and answer T/F, multiple choice, fill in or short essay questions. Exams 1 will require a scantron and a number 2 pencil. Exams 2, 3 and 4 will have lab practicals as well as a written part to the exam. During the lab practical, you have a limited time for each station. You must work quickly to identify and correctly answer questions about microscope slides, figures or models. You will move from station to station at the direction of the instructor.

If you feel a question is not clear, you may ask me to clarify during the exam. Cheating will result in a zero for the exam, possible notification of the Dean and/or failure of the course and suspension from the school. Do NOT talk during exams for any reason. Do NOT answer your cell phone or use it for any reason. *I do not give make up exams unless you contact me ahead of time. Please be aware of dates and plan ahead.*

Quizzes (20 points)

There are two quizzes that you must complete online. One covers the material in this handout and the calendar. The second is a review of your microscope knowledge. To use the microscopes in lab, you have to score 100% on the microscope quiz.

Lab Reports (200 points)

Lab reports will be turned in throughout the semester involving sketches, answers to questions, and observations and data analysis of results obtained in class. Late lab reports will be accepted (with a penalty) but only until the Exam covering that material is given. If we use the microscope, you are expected to provide a sketch with labels of what you see in the lab report. The expected information to be included in the lab report will be explained at the beginning of class.

Informal Reports: You are required to turn in 10 informal reports throughout the semester. They are graded at 10, 8 or 5 points. These will include sketches and/or questions from the lab handout. Informal reports will be due at the next lab period. **Be sure to label your slides!** You must turn in at least 2 per test section.

Formal Reports: You are required to turn in 4 formal reports throughout the semester. These lab reports should be typed and submitted digitally via Canvas. Formal lab reports are noted on the calendar with an asterisk (\*). They are due at 1pm (before class) 1 week after the lab was completed. You must turn in 1 per test section.

Seminar Paper (20 points)

There will be a seminar paper due discussing essays from “Why Big Fierce Animals are Rare”, and “Bully for Brontosaurus”. The paper will be due before class starts and will be submitted via Canvas. You will be asked to pick your chapters early to group students discussion. Be sure you have your submission with quotes to help facilitate the discussion of the book. You must be present for the discussion to turn in your paper. See more specific details on Canvas.

Field Trip (25 points)

We will be going on multiple field trips during the semester. Two will occur during lab time, others will occur on other days. You are required to fill in one field trip report. You can turn in one other report for extra credit.

Research Paper and Oral Presentation (100 points)

A cumulative research paper on an assigned topic will be due. You will be asked to submit your topic early in the semester. At the end of the semester you will give an oral presentation on your research project. This project combines information learned throughout the semester. See directions and additional aspects of the assignment on Canvas.

Extra Credit: There will be opportunities for extra credit throughout the semester.

**Grading Scale**

Your grade is based on points. You have a “Keep Track of your Progress” sheet to be able to calculate your grade at any time throughout the semester. You are required to turn in the grades page with a running total two times – see calendar for dates. The class is 800 points total.

 90 – 100 % A

 80 – 89 % B

 70 – 79 % C

 60 –69 % D

 below 59 % F

**Asking Questions:**

 If you have a question while I am lecturing, please feel free to raise your hand. I encourage questions about the material – remember that if you are confused, chances are other students are also confused! If you have a question that is not related to the topic we are working on, or is not appropriate for the lecture period, please see me during the lab period or office hours.

**Classroom expectations**

1) I expect you to come to class on time. Punctuality is important and coming to the class late disrupts the class for your fellow students and instructor. If you will be routinely late due to coming from another class, another campus or job, or due to the transportation schedule, please let me know.

2) You are responsible for knowing all the information in this course information and syllabus. Please read over the calendar and take the syllabus quiz that is online to show me that you have read over this information. Changes to the syllabus (due to rescheduling for field trips, availability of lab supplies, or unexpected situations that arise during the semester) will be announced and written on the board. You are expected to note those changes down on your own syllabus.

3) You are responsible for dropping yourself from the course. Just not showing up does not guarantee that I will drop you from the course.

**TENTATIVE SCHEDULE FOR BIOL 1B**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
| Aug 19 | Aug 20 | Aug 21 | Aug 22 | Aug 23 | Aug 24 |
|  | Intro, Ch 52 - Ecology |   | Ch 56 Global Climate |  | Saturday classes |
|   | Biomes Lab |   | Lake Merritt - Keys |   | begin |
| Aug 26 | Aug 27 | Aug 28 | Aug 29 | Aug 30 | Aug 31 |
|   | Ch 55 - Ecosystems |  | Ch 54 Comm Ecology |  |  |
|   | Climate Change - IPCC\* |   | Community Ecology |  |   |
| Sep 2 | Sep 3 | Sep 4 | Sep 5 | Sep 6 | Sep 7 |
| HOLIDAY - Last day | Ch 53 - Popl' Ecology |  | Ch 53 - Popl' Ecology |   |   |
| to add or drop w/o W | Succession\* |   | Popl'n Growth/Little Ice Age |   |   |
| Sep 9 | **Sep 10** | Sep 11 | Sep 12 | Sep 13 | Sep 14 |
|   | **Exam #1 Ch 52-56 & lb** |   | Ch 22 Darwinian View |   |   |
|   | How the Earth was Made |   | Natural Selection |   |   |
| Sep 16 | Sep 17 | Sep 18 | Sep 19 | Sep 20 | Sep 21 |
|  | Ch 23/24 Evol of Pop  |  | Ch 25/26 History of Earth |   |   |
| **Topic Due** | Population Genetics |   | Library Research |   |   |
| Sep 23 | Sep 24 | Sep 25 | Sep 26 | Sep 27 | Sep 28 |
|   | Ch 27 Bacteria & Archea |  | Ch 28 Protists/Phylogeny |   |   |
| **Bibliography Due** | Bacteria\* |  | "Protists"  |  |   |
| Sep 30 | Oct 1 | Oct 2 | Oct 3 | Oct 4 | Oct 5 |
|  | Ch 31 Fungus |   | *EBMUD Field Trip* |  |   |
|   | Fungus\* |  | **Seminar Papers Due** |  |   |
| Oct 7 | **Oct 8** | Oct 9 | Oct 10 | Oct 11 | Oct 12 |
|  | **Exam #2 Ch 22-27** |   | Ch 32 Animal Kingdon |  |   |
|   | **lab material** |   | Porifera & Cnideria |   |   |
| Oct 14 | Oct 15 | Oct 16 | Oct 17 | Oct 18 | Oct 19 |
|  | Ch 33 Inverts |   | Ch 34 Vertebrate Evol | Last day to file for  |   |
|   | Platy, Annl, Molls |   | Nematods & Arthopods | AA/AS |   |
| Oct 21 | *Oct 22* | Oct 23 | Oct 24 | Oct 25 | Oct 26 |
| **Outline**  | *No Class - PD Day* |   | Ch 34 Vertebrate Evol |  |   |
| **due w/citations** |   |   | Vertebrates & Echinoderms |  |   |
| Oct 28 | Oct 29 | Oct 30 | Oct 31 | Nov 1 | Nov 2 |
|  | Ch 47 Animal Development |   | Ch 34 Vertebrate Evol |   |   |
|   | Chordates |   | Human Evolution\* |   |   |
| Nov 4 | **Nov 5** | Nov 6 | Nov 7 | Nov 8 | Nov 9 |
|  | **Exam #3 CH 32-34 & 47** |   | Ch 30 Plant Diversity | *Monterey Bay* |   |
|   | **lab material** |   | Moss and Ferns | *Aquarium Trip* |   |
| Nov 11 | Nov 12 | Nov 13 | Nov 14 | Nov 15 | Nov 16 |
| HOLIDAY - VETERANS | Ch 30 Plant Diversity |   | Ch 38 Angiosperms | Attend. Verif. Day |   |
|  | Gymnosperms |   | Angiosperms and seeds\* | Last day to drop w/W |   |
| Nov 18 | Nov 19 | Nov 20 | Nov 21 | Nov 22 | Nov 23 |
|  | Ch 38 Angiosperms |  | *UC Botanical Gardens* |   |   |
| **Paper Due** | Angiosperm Anatomy |  | *Review for Exam* |   |   |
| Nov 25 | Nov 26 | Nov 27 | Nov 28 | Nov 29 | Nov 30 |
|  | Ch 37/39 Soil Nutrition |  | HOLIDAY | HOLIDAY |   |
|   | Floristics\*  |   | Thanksgiving | Thanksgiving | NO SAT. CLASSES |
| Dec 2 | Dec 3 | Dec 4 | Dec 5 | Dec 6 | Dec 7 |
|   |  Presentation Week |   |   |   | Sat. class Finals |
| Dec 9 | **Dec 10** | Dec 11 | Dec 12 | Dec 13 | Dec 14 |
|   | **Exam #4** |   |   |   |   |
| Finals | Finals | Finals | Finals | Finals |   |
| Items listed on Monday imply that the assignment is due that week. See Canvas for the specific date |  |  |
| 1) Formal labs due – these are the labs with an asterisk.  They are due 1 week after the lab was completed (1 per test section) |
| 2)  Informal Labs – questions and/or sketches will be turned in for these labs at the next lab meeting.   (at least 2 per test section) |

Keeping Track of Progress BIOLOGY 1B Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Informal labs (100) title

 #1 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 #2 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 #3 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 4 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 5 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 6 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 7 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 8 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 9 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 10 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Formal Labs (100)

 # 1 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 2 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 3 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 # 4 \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Papers (45)

 Field Trip Report \_\_\_\_ Seminar paper 1 \_\_\_\_

Exams (420)

 Quiz 1 \_\_\_\_/10 Quiz 2 \_\_\_\_/10

Exam 1 \_\_\_\_/100 Exam 2 \_\_\_\_/100

 Exam 3 \_\_\_\_/100 Exam 4 \_\_\_\_/100

Final Paper (100)

 Final Report (60 possible) \_\_\_\_ Grading Fellow Students (10) \_\_\_\_

 Bibliography (5) \_\_\_ Outline (5) \_\_\_\_ Oral Presentation (20) \_\_\_\_

To determine your grade: add up your points you received and divide by the points possible in the class so far. Multiply that number by 100 for a percentage.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Extra Credit**  | **Overall Total pts earned by you** | **%****& letter grade** | **What grade do you want to earn? (pts)** | **How many points do you need for that grade?** | **Are there enough points left in class?****(give # of pts left)** |
| ***example*** | ***points earned*** | ***your pts******possible so far*** |  ***A (720)*** | ***720 – your pts =*** |  ***800 – possible so far =*** |
|  | **1)** |  |  |  |  |
|  | **2)** |  |  |  |  |

* You are to turn this page in (completed with a total) twice, however you can turn it in at any time to check your grade