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

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**Course Description**: Biology 1B is the second semester of a 2 semester series designed for students who are majoring in the Biological or health sciences. BIOL1A is a prerequisite. This course is a general overview of the many topics in biology. 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 Moodle Site for BIOL 1B Scantrons for Exam # 1 and Exam # 2

“Why Big Fierce Animals are Rare” By Paul Colcineaux

“Bully for Brontosaurus” by Stephen J. Gould

**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 to explore. Lectures begin on the hour on Monday, Wednesday, and Friday. Plan to be in your seat and ready to take notes at that time. Many students find it helpful to read the chapters before the lectures. Labs will begin on the hour on Tuesdays and Thursdays. You must 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 sign-in on the sheet at the front of the room for the labs. 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 understand 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, synthesize information from the lecture and answer T/F, multiple choice, fill in or short essay questions. Exams 1 and 2 will require scantrons and a number 2 pencil and Exams 3 and 4 will have lab practicals as well as a written part to the exam. Lab Practicals will form part of the lecture exam grade on Exams 3 and 4. You must work quickly to identify and correctly answer questions about microscope slides, figures or models. Only 1 student can be at a station at a time. You will move from station to station at the direction of the instructor.

During the exam, if you feel a question is not clear, you may ask me to clarify. 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 do not do part of an exercise from the lab manual, you will not be expected to turn in the questions in that section. If we use the microscope, you are expected to provide a sketch 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, and also written on the board.

Informal Reports: You are required to turn in 10 informal reports throughout the semester. They are graded at 10, 7 or 5 points. These will include sketches and/or questions from the lab handout. Informal reports will be due at the next lab period. You must turn in at least 2 per test section.

Formal Reports: You are required to turn in 4 formal reports throughout the semester. They are graded at 25, 20 or 15 points. The expected lab report format includes 4 sections: Purpose, Materials and Methods, Results and Discussion. These lab reports should be typed. Formal lab reports are noted on the calendar with an asterisk (\*). They are due 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”. Read the guidelines for the seminar papers. The paper will be due at the end of the class period because you will use the paper and the quotes to help facilitate the discussion of the book. You must be present for the discussion to turn in your paper.

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 the weekends. 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. Guidelines for topics and information will be handed out. At the end of the semester you will give an oral presentation on your research project. This project combines information learned throughout the semester.

Extra Credit: There will be opportunities for extra credit throughout the semester. Submit your papers via Moodle

**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 encouraged to check your calculations with my records.

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. Coming late to labs means you have missed the instructions for the lab and may not be allowed to join in. If you will be routinely 1-2 minutes 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 expected to keep track of your progress and how many of the required assignments you have turned in.

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4) You must turn off the sound for cell phones, etc. while in the classroom- including texting. No electronic dictionaries are allowed.

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

**BIOL 1B Student Learning Outcomes**

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.

Evaluate continued threats to our global ecosystems and appraise individual efforts in environmental issues.

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.

Identify the diversity of organisms classified in all five kingdoms and three domains. Distinguish the evolutionary patterns, both the similarities and the differences between organisms as species have diverged.

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

Synthesize information, think independently and reason through new material in a way that not only reflects facts learned about a particular topic, but also an understanding of ecology and evolution, and express this reasoning in discussions and on exams.

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.

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) Extra Credit \_\_\_\_

Written (70 possible) \_\_\_\_

Oral Presentation (20) \_\_\_\_

Grading Fellow Students (10) \_\_\_\_

Participation (35): Lecture \_\_\_\_/10 Lab \_\_\_\_/25

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.

Points so far \_\_\_\_\_\_\_ Grade I want in class \_\_\_\_\_\_\_\_

Points left in the semester \_\_\_\_\_\_\_\_ Are there enough points for you to earn the grade you want?

* Be sure there are enough points left in the class for you to earn the points you would like to have!
* You are to turn this page in (completed with a total) on 11/15, however you can turn it in at any time to check your grade

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