**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 Van de Graaff’s Photographic Atlas

Lab Handouts on Moodle 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 BIOL 1A with evolutionary lineage discussed in BIOL 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 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.

**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 and answer T/F, multiple choice, fill in or short essay questions. Exam 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. The expected information to be included in the lab report will be explained at the beginning of class. You are required to check in and out of the lab. If you have not done the work in class, you are not allowed to turn in a lab report or receive credit for the work done that day.

*Informal Reports:* You are required to turn in 10 informal reports throughout the semester. These will include sketches and/or questions from the lab handout. If we use microscopes, you are expected to include **sketches of what you see with labels** in your lab. The atlas will help you identify what to draw and label the structures. 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. These lab reports should be typed and submitted through Canvas. 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. See specific directions and grading rubric in your Canvas Shell for details on how your score will be assessed.

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. See specific directions on the Canvas Shell.

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. 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. See specific directions on the Canvas Shell.

Participation (10 points lecture/25 points lab)

Your participation in this class is crucial to your learning in both lecture and lab. Coming to class, taking notes, conducting labs and working in groups is expected of you in this class, therefore, everyone will start with 70% of the points. Asking questions that demonstrates you have completed the reading, were paying attention in class and shows respect for the classroom will increase your points in lecture. Showing leadership and cooperative skills, cleaning up after yourself, putting the microscope away on the correct shelf and reviewing with any spare time will increase your points in lab.

Using your phone or laptop during lecture for uses other than taking notes, not having your lab available ahead of time, not paying attention to due dates provided will lead to a decrease in your points. 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.

You are responsible for dropping yourself from the course.

**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.

90 – 100 % A (720-800 pts)

80 – 89 % B (640-719 pts)

70 – 79 % C (560-639 pts)

60 –69 % D (480-559 pts)

below 59 % F

\*Any late work will receive a penalty of 2 points per day

**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.

**BIOLOGY 1B TENTATIVE CALENDAR FALL 2018** **Name**

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

**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** | **%**  **and letter grade** | **What grade do you want to earn?** | **How many points do you need for that grade?** | **Are there enough points left in class?**  **(give # of pts left)** |
|  | **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