

CAMOSUN COLLEGE BIOLOGY DEPARTMENT
Biology 060 – Fall 2002

Instructor: Bruce Hardy **Phone:** 370-3423 (leave a message). **Office:** Ewing 344D.
Office Hours in E344D Tuesday and Friday, 4-5PM and Monday 5:30-6:00, or by appointment.

Classrooms: Labs = F244, Lectures = F202 or TBA.

Text: Campbell, Reece, **Essential Biology**, 2001 edition

Lab Manual: Biology 060 Study Guide 2002 and Biology Lab Manual, 2002.

Optional Books:

Pojar and McKinnon, *Plants of Coastal B.C.* About \$27.00.

Rick Harbo – *Tidepool and Reef.* About \$9.00.

1. INTRODUCTION.

Welcome to Biology 060! Believe it or not, you have studied Biology before, starting soon after you were born. The difference between this course and everyday life is that, for better or worse, this course tries to organize some of the knowledge. More specifically, it discusses ways in which scientists have learned about living things, how they have tried to organize the vast amount of information about living things, and how they gain new knowledge. This is different from, but complementary to, the experiences you have through your daily existence. If you try to relate your previous knowledge to this course, you will learn more easily, and probably enjoy it more.

2. SOME HINTS FOR STUDYING.

(a) Caution !!!

A course like this seems to start off fairly slowly, and there is a tendency to let things slide for awhile. However, the material accumulates rapidly, and it is easy to rapidly get behind. After that, it's hard to catch up. So ... **don't get behind !!!**

The course is set up to allow you to study independently, or in groups, but attendance at lectures is highly recommended, and attendance at labs is mandatory in order to pass the course.

(b) Bruce's Teaching Approach:

I won't cover every single item in the lectures. However, I will try to do five main things:

- discuss the highlights, with emphasis on difficult parts; and with reference to the Outcomes and Objectives.
- give strong hints about what is more important and what is less important;
- introduce some new and interesting information which is not in the text.
- provide supplementary audio-visual aides which will help clarify some of the material, and
- provide summary information which will link the various assigned subjects together (this is especially important).

(c) Some Study Hints.

Whether you attend regularly or not, and whether you have studied Biology before or not, you will probably find that there is more information than you can possibly absorb. Here are a few hints for how you can study effectively, get lots out of the course, get decent marks, and still enjoy Biology.

- Use the **Chapter Opener**, which introduces the chapter and outlines its concepts.
- The separate list of **outcomes and study objectives, in the study guide**, is your guide to what you should study. If you learn the material in those, you should be able to get a good mark on tests, although you will need to attend regularly to assure top marks. The **Outcomes** are the overall concepts that you should gradually be adding to and reinforcing, while the **Objectives** are the specific items you should study for each test.
- **Skim** the section you are planning to learn, to get an overview of the highlights, BEFORE you try to learn the details
- When you have finished the chapter, read **the Chapter Summary** and try the “Testing Your Knowledge” section. Also, try the practice test questions in the free CD that comes with the text. NOTE the skill type for each question.
- Look over the day's material BEFORE coming to class – **THIS IS REALLY HELPFUL. !!!**
- If there is more than you can absorb, first absorb the general concepts rather than the details. Once you know the generalities, you have a mental framework on which to attach the details which will give dimension and meaning to the general concepts. Work from general to particular.
- Details which fit into a pattern are much easier to remember than isolated details which don't relate to anything. Besides learning the objectives, you can form patterns by drawing diagrams, organizing your notes into tables, graphs or meaningful pictures, by mnemonic devices, and in other ways.
- If you don't already know how to take notes from lectures, you should work on learning this important skill. If you do know how, it is good to try and improve this skill. The most important skill of note-taking is to write down just enough to summarize and organize what has been said, and to stimulate your mind later when you review the notes.
- The **online material (Biology 060 online supplement)** has much which can help you learn more effectively. See the next section for more details.
- You should ask questions about any parts you don't understand, as soon as you have the problem, rather than waiting until exam time.
- **It helps to study with others**, or at least to discuss the subject material with others. I will encourage group work as much as practical in this class, especially for projects and labs.
- Information is retained best if you review it at least once within 24 hours after you have first learned it. The "**Principle of Primacy and Recency**" states that we remember best that which we first learn, and also that which we most recently learned. This same principle suggests that study in several intense sessions (30-60 minutes) is more useful than extended study of two or more hours at a time.
- Since the science of Biology has many words, it is almost like learning a new language. The important words are referred to in the objectives, and given in bold print in the text. Any language is easier if you break the words into syllables, and know the meanings of some of the key syllables (roots). Some of these will be emphasized and explained in lectures. In your Lab Manual/Study Guide, there is a **separate section for Vocabulary (called BSL)**, and where possible relate new words to their root meanings in that BSL list. I will give you many hints about this.

Throughout the course, I will give further hints for studying and report writing. You should consider that 'learning to learn' is at least as important as actually passing the course. GOOD LUCK !!!

3. BIOLOGY 060 ONLINE.

- (a) The “online supplement” to Biology 060 is actually a full course in itself, except for labs. You can access the course either in the General Purpose labs or at home, but you will need a global ID and password. See Bruce about that. The initial URL is : <http://webct.camosun.bc.ca:8900/> Once you are in that, click on BIOLOGY 060W01, and insert your global ID and password.
- (b) You should find the following useful. You open them by clicking on the appropriate icon.
- i. The “**LECTURE HALL**” – useful as a review or if you miss a lecture. Generally speaking, one of the online “lectures” would be the equivalent of about two classroom lectures. The “lecture notes” tell you what is most important to study, and the “**Powerpoint Slides**” give you a useful, concise summary of the material for that lecture.
 - ii. The online “**GLOSSARY**” has many specific definitions that are not in our text, plus images to go with them. You can look at those directly as you need them, and some of them are also linked from lecture materials.
 - iii. The “**Answer Keys**” icon has, as you would suspect, answer keys to lab activities, tests and sometimes exercises which you have done. They are only available after you have finished the activities.
 - iv. The “**Diversity Databases**” are lists and pictures of various organisms, especially plants. Many of the organisms we see during the course are illustrated in those databases.
 - v. The “**Online Quizzes and Surveys**” icon gets you to quizzes which are relevant to the sections we are covering. Like the answer keys, they will only be available at certain times.
 - vi. On the “**Personal Mail**” icon, you can send email messages to the instructor (Bruce) or to each other.
 - vii. There is a “**Bulletin Board**” on which you can have group discussions or ask questions to a group. Also, Chat Rooms can be organized on request. I haven’t personally used these.

4. HANDS-ON GROUP PROJECT.

Starting in about the third week, you will be doing an actual scientific experiment of your own design, possibly having to do with the growing of plants. You should work in groups because there is too much work to each project for one person. We'll discuss more details about this in class.

The main problem with group projects is allocating both the work and the marks to the different members of the team. Ideally everybody should make an equal contribution and all share the resulting mark, but this doesn't always work out. You will have a choice about whether to have one group mark for the project or for each member to get a separate mark for their efforts.

5. OTHER ACTIVITIES AND PROJECTS.

There will be various write-ups, with the value varying from 2% to 5% of your total mark. They will include about about five lab write-ups, two field trip write-ups, and one diversity report (plus an optional second report for a bonus 2% marks).

6. MULTIMEDIA COMPUTER MODULES on CHEMISTRY AND BIOMES.

To hopefully help your learning, I have developed six computer modules - two about basic chemistry (optional) and four about biomes - specifically, estuaries, tropical rain forests and coral reefs (compulsory parts of the course) and deserts (optional, for bonus points). They have text, hotwords leading to definitions, other hotwords leading to colour pictures and diagrams, and a bit of music. They contain a lot of the material that I have, in the past, covered in lectures and slide shows. You will use them in a computer lab, at your own rate. I will be there to give help when you need it. Hopefully, they will be an improvement on lectures, as they will take the place of some lectures. At the time of printing, the dates for these have not been finalized, but will most likely be done over a three-week period in early February.

7. EVALUATION and GRADING.

Out of a total of 100 points, 40 will be for classroom tests, 15 for lab exams, 25 for assorted assignments, and 20 for a major project. The details are as follows:

- There will be four classroom tests – one worth 5%, and three worth 10% each, throughout the semester. That will make a total of 40% of the overall mark.
- There will be two lab exams - the first worth 5% and the second 10%. **Note: no make-up on these.**
- There will be about six activity reports (labs and field trips), worth 2% to 5% each, for a total of 25%.
- Finally, there will be a special group project and report, worth 20% of the total (5% for rough draft and 15% for finished version). Your group should start it in late January or early February, so as to have it finished by mid-March.
- There will be a “diversity report”, in which you summarize knowledge about ONE GROUP of animals or plants in the GREATER VICTORIA area – worth 5%.
- There are optional online quizzes. I mark these and give you extensive feedback, so they are worthwhile from that point of view. However, about six of them also count for about 0.5% marks, which can be used as bonus points.
- Also, an extra 3% diversity report will be optional for bonus points. The optional desert module could add a bonus percent or two.

If your test marks are lower than you want, and you believe that you could improve your score, you can write an **optional comprehensive final exam**, covering the entire course, worth 40% of the total mark. The mark on this will replace the marks on the term tests.

The percents for letter grades will be as follows (+ or - 2%):

A+ = 95-100;	A = 90-94;	A- = 85-89;
B+ = 80-84;	B = 75-79;	B- = 70-74;
C+ = 65-69;	C = 60-64;	
D = 50-59;	F = 0-49.	

Note that a "D" is considered a passing grade. However, to have success at the next level (i.e., first year Biology), you should earn at least a "C".

Good Luck, and enjoy your Biology course !!!

Online Lectures	Summary of Materials Covered.	Information Sources	Lab or Field Activities.	Due dates for Assignments.	Test Dates.
L1 and 2	Introduction, nature of life, biological principles; Scientific method.	Text chapter 1 plus slides	None		~7 intermittent lecture quizzes Bonus Value ~3
L3	Basic Chemistry; Cell Structure and Function.	Chapters 2, 3	Lab 1		
L4, 5, 6	Chemistry (cont'd); cells	Chapters 3, 4	Lab 2	Lab 1 write-up due Sept. 16	Classroom test 1 - (5%) date TBD
L7, 8, 9	Energy, Evolution, Ecology	Ch. 5, 12, 17.	Swan Lake trip and lab report. Start 15% project.	Lab 2 write-up due Sept. 23rd.	
L10, 11.	Ecology (continued); Protista	Ch. 17, 20, 14	Look at SL samples, continue 15% project.	Swan Lake report due Sept. 30th - 4%	
Lec 12	Kingdom Plantae - Non-vascular plants, intro to vascular plants.	Chap. 15	Oct.14 - Protistan and Plant labs.		Test 2 - Value 10% - Date TBD
Lec 12	Vascular plants - overview	Chap. 15	No lab - October 14 is Thanksgiving Day.		
Lec 12, 13	plants - roots, stems, leaves. Also Fungi	Chap. 15, 6 plus lab.	Plant labs (cont'd)		Lab Exam - 5%
Lec 15	Introduction to Kingdom Animalia; intro. to invertebrates.	Chap. 16	Animal lab 4 - inverts	Plant lab write-up due Oct. 28 - 4%.	
Lec. 15-16	invertebrates (continued)	Chap. 16	Evening breakwater trip Nov. 4, 5, 6 or 7.		Test 3 - Value 10% - Date TBD
Lec. 17.	chordates - survey of the main classes -emphasis on Mammals.	Chap. 16	No Lab - Nov. 11 is Remembrance Day.	Invert lab write-up due Nov 15th - 4%. Diversity 5% report	Project Rough Draft due - worth 5%
Lec 18	Microorganisms - Viruses, Bacteria.	9, 11, 14.	Chordate lab and frog dissection	Breakwater rep't 5%	
Lec. 19-22	Biomes - Coral reefs, Tropical Rain Forests, Estuaries, Deserts.	Biomes modules + 17	Microorganism labs.		major project final draft due 15%
Lec 23	Review		Review lectures		Final lab exam Dec. 2
	Final exam weeks				Test 4 - 10%; Optional Final 40%