

Grande Prairie Regional College
Department of Science

Course Outline

Fall 2011-2012

BI 1080

Organisms in Their Environment
Credit Hours 3 (3-1-3)

Instructor

Philip Johnson B.Sc., M.Sc., M.S.P.H., Ph.D..

Office: J224

Phone: 539 2863

E-mail: *pjohnson@gprc.ab.ca*

Course Description: Biology 1080 is a required first-year course in the biology program at the University of Alberta. It may be taken either before or after Biology 1070 (Cellular Biology). Whereas Biology 1070 covers processes which take place within cells, Biology 1080 covers material at a macro level. It is the major diversity course in the core biology program. All major groups of living organisms are examined. We begin with the origin of life on Earth and proceed to the diversification of this first life-form into the major taxa living today. We follow the major geologic and evolutionary events that favored the rise of each group. Our approach is from a comparative point of view – how different organisms solve similar problems in different ways. We examine all the kingdoms of life, the major phyla within these kingdoms, and, in many cases, the major classes within these phyla.

Biology 1080 is an introduction to the interaction between diverse organisms and their environment. We will examine how the current environment is the product of the activities of organisms. The environment, in turn, places selective pressures on populations of organisms, which either adapt or go extinct. We will examine how evolution has operated over long time periods to produce major groups of organisms and how evolutionary origins are reflected in our system of classification. The principles that underlie our understanding of the major lineages will be discussed using examples from prokaryotes, fungi, protists, animals, and plants. We will stress the importance of the environment as an evolutionary force. Finally, we will look at the involvement of organisms in major ecosystem processes and evaluate the stability of those systems. The impact of cultural evolution on the environment will be examined.

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| Transferability: | Athabasca University | BIOL 205 (3) |
| | Concordia University College | BIO 1xx (3) |
| | MacEwan University | BIOL 108 (3) |
| | Kings University College | BIOL 211 (3) |
| | University of Alberta | BIOL 108 (3) or AUBIO 110 (3) |
| | University of Calgary | BIOL 233 (3) |
| | University of Lethbridge | BIOL 1020 (3) |

Texts: “Biology” by Campbell & Reece (9th Edition 2011)
Benjamin Cummings Publishing Company
This is a required text and is available from GPRC Bookstore.
Earlier editions are not recommended.

“Student Study Guide for Campbell’s Biology” by Taylor (2009)
Benjamin Cummings Publishing Company
This is an optional text.

Biology 1080 Laboratory Manual
Grande Prairie Regional College / University of Alberta
This is a required text and is available from the GPRC Bookstore

Supplemental Resources

Copies of the Powerpoint slides used in class will be available for downloading from the BI 1080 B2 Moodle page.

Mastering Biology :

This is available at <http://www.masteringbio.com>.

You must register on the site using the information in the Student Access Kit provided with the textbook, then use the course code JOHNSON1080 to enter the appropriate course. There are a variety of useful resources available in the course Study Area, including practice quizzes, animations and videos.

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| Course Schedule: | Classes: | A2 Mondays & Wednesdays 1000-1120 (J201) | |
| | | B2 Mondays & Wednesdays 1000-1120 (J202) | |
| | Labs: | L1 Thursdays | 1430-1720 (J130) |
| | | L2 Mondays | 1430-1720 (J130) |
| | | L3 Fridays | 1430-1720 (J130) |
| | Seminars: | S1 Tuesdays | 1130-1220 (J201) |
| | | S2 Fridays | 1130-1220 (J201) |
| | | S3 Fridays | 1200-1250 (J227) |

Requirements:

This is a 3-credit course that includes 3 hours of lecture, 3 hours of lab and 1 hour of seminar each week.

Presence at lectures, seminars and laboratories, participation in classroom discussion and projects, and the completion of assignments are all important components of this course, therefore students will serve their interests best by regular attendance. Those who choose not to attend must assume whatever risks are involved. In this connection, the attention of the students is directed to the Academic Guidelines of Grande Prairie Regional College.

Laboratory requirements will be explained during the first Laboratory session of the semester.

All assignments must be completed and handed in to the instructor by the date specified. Late assignments will not be marked. Students must attend laboratory sessions and complete each exercise in order to receive credit for the lab reports. Students should read pages 47-50 of the 2010-11 GPRC Calendar dealing with the Rights and Responsibilities of Students, especially the sections regarding plagiarism, cheating and the penalties involved since these are serious issues and will be dealt with severely.

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| Evaluation: | Midterm Exams (2): | 20% |
| | Lab Portion | 30% |
| | Seminar: | 10% |
| | Final Lecture Exam: | 40% |

The Mid-term exams will be scheduled after approximately 4 weeks and 8 weeks of classes. They will be taken during regular class times and consist of a combination of multiple-choice and short answer questions. These exams will be non-cumulative.

The Final Exam will be scheduled during Exam Week at the end of the semester. Again, it will consist of multiple-choice and short answer questions. However, it will be cumulative with approximately 25% of questions on material covered by the two mid-terms, and 50% of questions on material covered since the second mid-term.

At the end of the course, each student will be assigned a letter grade corresponding to the following table:

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| 90-100% | A+ |
| 85-89% | A |
| 80-84% | A- |
| 76-79% | B+ |
| 73-75% | B |
| 70-72% | B- |
| 67-69% | C+ |
| 64-66% | C |
| 60-63% | C- |
| 55-57% | D+ |
| 50-54% | D |
| 0 – 49% | F |

A bell curve will not be used when assigning grades.

It should be noted that a minimum grade of C- is required in order to transfer credit for this course to the University of Alberta.

BI 1080 Organisms in Their Environment
TOPIC OUTLINE

| TOPIC | Readings in Campbell (9th Edition) |
|---|---|
| Introduction to BI 1080 | |
| Unifying Themes in Biology | Chapter 1: 1-27 Chapter 17: 328-330 |
| Taxonomy, Phylogeny & Systematics | Chapter 22: 461-465 Chapter 26: 536-551 |
| Key Events in the History of Life (Evolution) | Chapter 22: 452-453 & 457-461 Chapter 23: 468-471 & 475-481 Chapter 24: 487-498 Chapter 25: 509-510 & 523-525 |
| Protists | Chapter 28: 575-599 |
| Plants | Chapter 24: 503-504 Chapter 29: 600-617 Chapter 30: 618-635 Chapter 38: 801-813 |
| Fungi | Chapter 31: 636-650 |
| Animals | Chapter 32: 654-665 Chapter 33: 666-672; 677-678; 680-682 & 693-694 Chapter 34: 698-706; 708-711 & 713-714 Chapter 44: 954-956 & 959-970 |