



**School of Arts & Science
BIOLOGY DEPARTMENT**

BIOL 126-section
Physiological Basis of Life
Semester/Year, eg, 2009P or 2009Q2

COURSE OUTLINE

The Approved Course Description is available on the web @ D2L Biology 126

Ω Please note: this outline will be electronically stored for five (5) years only.
It is strongly recommended students keep this outline for your records.

1. Instructor Information

| | | | | |
|-----|---------------|-------------------------|--------------------|--|
| (a) | Instructor: | Geoffrey Haywood, Ph.D. | | |
| (b) | Office Hours: | Thursdays 14.30 -15.20 | | |
| (c) | Location: | F344D | | |
| (d) | Phone: | 370-3506 | Alternative Phone: | |
| (e) | Email: | haywoodg@camosun.bc.ca | | |
| (f) | Website: | D2L | | |

2. Intended Learning Outcomes

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

1. Classify and describe the unique structure and function of the four groups of macromolecules and discuss how these relate to their properties within living cells.
2. Differentiate among the various transport mechanisms available to mobilize molecules across cell membranes.
3. Name and outline the pathways utilized by cellular respiration and photosynthesis and explain the importance of these processes to living organisms.
4. Describe the basic steps of DNA replication and indicate its role in cell division and inheritance.
5. Demonstrate knowledge of the basic steps of protein synthesis, identifying the roles of DNA, mRNA, tRNA, amino acids and proteins in the processes of transcription and translation.
6. Identify and explain the principles and consequences of the cell cycle, including both mitosis and meiosis.
7. Examine the basic principles of Mendelian genetics and describe how these relate to other topics encompassed in this course.
8. Describe and explain the role of growth regulators in the control of plant growth, development and physiology.
9. Describe and explain the diversity of control mechanisms in animal systems, including the role of the endocrine and nervous systems.
10. Conduct experiment tests and use analytical techniques in the laboratory to demonstrate a few biological properties of macromolecules, cellular respiration, photosynthesis, DNA technology and plant and animal control systems.

3. Required Materials

(a) Texts; Biology: Campbell & Reece 8th Ed.

(b) Other Lab Workbook Biology 126 Haywood

4. Course Content and Schedule

Timetable of lectures and Labs.

| Day | LECTURE TOPIC | CHAPTER | LAB |
|--------------------------|---------------------------------------|---------|-----------------------|
| May 4 - 5 (L1-3) | Characteristics of Life | 2,3,4,5 | No Lab |
| May 7 - 8 (L4-6) | Metabolism | 8 | Tools for discovery |
| May 11 -12 (L7-9) | Glycolysis and Respiration | 9 | Enzymes |
| May 14 -15 (L10-12) | Fermentation / Photosynthesis | 9, 10 | Cellular Respiration |
| May 18 - 19 (L13 - 14) | Photosynthesis / Theory Exam 1 | 10 | Photosynthesis |
| May 21 - 22 (L15 - 17) | Plant Nutrition | 37 | Chloroplast Isolation |
| May 25 - 26 (L 18 - 20) | Animal Nutrition | 41 | Lab Exam 1 |
| May 28 - 29 (L21 - 23) | Cell membrane | 7 | Diffusion/Osmosis |
| June 1 - 2 (L24 - 26) | Intercellular Communication | 11 | Nematode Expt. 1 |
| June 4 - 5 (L 27 - 29) | Cell Cycle and Mitosis | 12 | Nematode Expt. 2 |
| June 8 - 9 (L 30 - 31) | DNA Replication/ Theory Exam 2 | 15/16 | Fruit Fly 1 |
| June 11 - 12 (L32-34) | Protein Synthesis | 17 | Lab Exam 2 |
| June 15 - 16 (L 35 -37) | The Genome | 19 | Fruit Fly 2 |
| June 18 - 19 (L 38 - 40) | Sources of Variation | 13 | No Lab |

(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

5. Basis of Student Assessment (Weighting)

(Should be linked directly to learning outcomes.)

(a) Assignments and Quizzes: 25%

(b) Exams: Midterm Theory 1 15% Midterm Theory 2 15% Final Theory 25%
Lab Midterm 1 10% Lab midterm 2 10%

(c) Other (e.g., Attendance, Project, Group Work)

6. Grading System

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Standard Grading System (GPA)

| Percentage | Grade | Description | Grade Point Equivalency |
|------------|-------|---|-------------------------|
| 90-100 | A+ | | 9 |
| 85-89 | A | | 8 |
| 80-84 | A- | | 7 |
| 77-79 | B+ | | 6 |
| 73-76 | B | | 5 |
| 70-72 | B- | | 4 |
| 65-69 | C+ | | 3 |
| 60-64 | C | | 2 |
| 50-59 | D | Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite. | 1 |
| 0-49 | F | Minimum level has not been achieved. | 0 |

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at camosun.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

| Temporary Grade | Description |
|-----------------|--|
| I | <i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family. |
| IP | <i>In progress:</i> A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.) |
| CW | <i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement. |

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services or the College web site at camosun.ca.

STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and on the College web site in the Policy Section.

ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED STUDENT ASSIGNMENTS

Assignments will be given out on the Thursday of each week and are due in on the following Monday – by the end of the lecture period.

Assignments received on the day due will be marked out of 100% - but if not received until the following day will be marked out of 80%. There will be a further drop of 20% for any assignment not received until Wednesday. Any assignment not received by the following Thursday (1 week after given out) will receive a zero mark.

Assignments **MUST** be printed as hard copies. Assignments will **NOT** be accepted as emails unless there is a serious illness involved in their tardy return – for which a doctor's note will be mandatory.