



CAMOSUN COLLEGE
School of Arts & Science
Department of Biology

BIOL-232-001
Principles of Genetics
Winter 2019

COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/biol.html>

Ω Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1. Instructor Information

(a) Instructor	Charles Molnar	_____
(b) Office hours	TBA	_____
(c) Location	F-340B	_____
(d) Phone	250 370-3449	Alternative: _____
(e) E-mail	molnar@camosun.bc.ca	_____
(f) Website		_____

2. Intended Learning Outcomes

Upon completion of this course the student will be able to:

1. Demonstrate the basic principles of Mendelian and molecular genetics.
2. Use standard techniques of genetic analysis in laboratory experiments.
3. Apply principles of genetics to ethical issues relating to molecular genetics.
4. Define and explain basic genetics terminology.
5. Use and apply genetic principles in problem solving.

3. Required Materials

- (a) Textbook: Klug et al Concepts of Genetics. 12th edition. Pearson. Earlier editions are possibly OK. Check with me.
- (b) **BIOL 232 Laboratory Manual**

Time and Location

Lecture: Monday	9:30-10:50	F-310	
	Thursday	9:30-10:50	E-344
Lab: Friday	1:30-4:20	F-222	

4. Course Content and Schedule

The following tentative schedule is subject to change if deemed necessary by the instructor.

COURSE SCHEDULE BIOLOGY 232

Winter 2019

The schedule that follows is an attempt to outline the daily activities of the class. It is subject to change or modification as the need arises.

Week of	TEXT CH.	LECTURE AND DISCUSSION	WEEK	LAB #	LAB TOPICS
Jan.7	1 2	Course Introduction, Genetics an Introduction Mendelian Genetics	1		Lab is ON Course intro., Fly crosses, lab intro. Micro practice.
Jan.14	2 3	Mendelian Genetics Mitosis, Meiosis	2		Problem solving; Intro to term project: Mitosis/Meiosis Lab Plant tissue culture, (Leslie G.) Fly work cont. Sordaria lab
Jan.21	3 4	Chromosomal Inheritance, Sex Linkage	3		Modification of Mendelian Ratios, Chi squared Sordaria Lab week 1 Karyotype exercise
Jan. 28	4 5	Extensions of Mendelian Analysis	4		Sordaria Lab cont Linkage Lab Cont.
Feb. 4	5 7	Genetic Mapping and Linkage analysis	5		Polytene Chromosome Lab Linkage Lab scoring
Feb. 11 Feb18	7 9	MIDTERM I Extrachromosomal inheritance Chromosomal Mutations Reading break	 6		Complementation in Serratia and Yeast week 1 No Lab
Feb. 25	10,11, 12	Topics in DNA replication and gene expression	8		LAB EXAM I Field trip Cytogenetics lab At Vic general Hospital. Date may shift.
Mar. 4	16	Mutation	9		Complementation in Yeast Week 2 U.V. Mutagenesis Week 1 Action of Genes Lab
Mar. 11	15 19	Mutation DNA technology	10		U.V. Mutagenesis Week 2 Complementation week 3 PCR or other lab
Mar. 18	19	MIDTERM II DNA technology	11		PCR or other lab Lecture Midterm 2 Genomics-Computer lab
Mar. 25	20	Genomics	12		Proteomics lab trip. Date may shift.
April 1	23	Genes and Development	13		Lab Exam
Apr. 8	25	Population Genetics	14		No Lab

Feb. 18-22 Reading break:

Exam Period April 15-18, 23-26 **Do not book flights!** Exam schedule out in Feb 22. Wait!!!!

5. Basis of Student Assessment (Weighting)

Mark Distribution: (Tentative)

LECTURE	
Midterm Exam 1	10%
Midterm Exam 2	10%
Final Exam	25%
Scrapbook	5%
Assignments/Quizzes/Lab assign.	10 %
	60%
LABORATORY	
Midterm test	10%
Second test	10%
Term Project/Presentation	<u>20%</u>
	40%

Midterms I and II, as well as the lab exams, will be **unit** exams.
The final lecture exam will be **cumulative**.

6. Grading System

- Standard Grading System (GPA)
- Competency Based Grading System

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

N/A

8. College Supports, Services and Policies



Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

1. 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		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. 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 at <http://camosun.ca/about/policies/index.html> for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
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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 are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
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.

Plagiarism

Plagiarizing is appropriating the work of another or parts or passages of another's writing (including the ideas or language) and passing them off as the product of one's own mind or manual skill. **Plagiarism will not be tolerated.** Plagiarism, **including the copying of any part of assignments or lab assignments**, is a serious offence and is considered to be academic misconduct. In some cases, the lab instructor may prefer a lab assignment to be written as a group. In such cases, handing in one assignment for the group will be acceptable. Otherwise, lab assignments handed in by individuals are expected to be individually prepared.

Cheating

A student caught cheating on an exam will forfeit all credit for that exam and perhaps for the course. Cheating is a serious offence and is considered to be academic misconduct.

Cheating includes, but is not limited to, using unauthorized materials in a quiz/exam and providing information to another person regarding exam content.

The consequences for cheating and plagiarism are outlined by Camosun College policies (see <http://camosun.ca/about/policies/education-academic/e-2-student-services-&-support/e-2.5.pdf> and <http://camosun.ca/about/policies/education-academic/e-2-student-services-&-support/e-2.5.1.pdf>) and may be severe. **No electronic devices are allowed in exams. All breaches of policies must be reported.**

Lab Safety

Under **NO** circumstances will students ingest food or drink in the lab. Taking oral medication or applying makeup or lip balm in the lab is also prohibited. You may leave the lab at a convenient time if you are thirsty, need a snack or require medication. For safety reasons students are **required** to wear closed shoes and pants in all lab times. Flip flops, sandals or shoes with holes are not acceptable. The spirit of this is safety, so make sure your 'closed-toed' shoes are actually safe!

Failure to adhere to the lab safety principles will result in the inability to enter the lab, or expulsion from the lab, and the subsequent **loss of credit** for that lab, including any pre-lab assessment credit.

Biology Missed Exams and Assessments

Quizzes and the exams must be written at the scheduled times. Under no circumstances will make-up exam be administered. However, it is understood that emergency circumstances occur (e.g. illness or emergency in the immediate family); for such circumstances accommodation may be offered at the discretion of the instructor, provided (a) the instructor is notified in **advance of the exam** (not after) and (b) the student provides documented evidence of the circumstance (i.e. medical certificate). The accommodation will be in the form of a make-up exam or adjusting the weighting of the final lecture exam to make up the missing marks, at the discretion of the instructor.

Please note: holidays or scheduled flights are not considered to be emergencies!

Late Penalties

Unless otherwise stated, all assignments are due at the **beginning** of the lab/class of the due date. There is a 10% /day late penalty (including weekend days). The format is expected to be professional, i.e. a neat, legible, clean copy. "Rough" drafts risk rejection and a subsequent late penalty.

If the assignment is more than one page, separate pages **must be stapled before** you come to class.

Attendance:

You are expected to attend all classes, and be on time. It is your responsibility to acquire **all** information given during a class missed, incl. notes, hand-outs, assignments, changed exam dates etc.

Missed exams or quizzes cannot be made up except in case of documented illness (doctor's note required). Lab attendance is *mandatory*.

Do not book trips until the exam schedule is known.

Labs:

A **1% final grade penalty** applies to any unexcused absence from lab. Frequent lates will count as an absence. Should you miss roll call at the beginning of lab, please identify yourself to the instructor as late or you may remain marked absent. Lab assignments can only be handed in for labs actually attended.

It is *absolutely* necessary to read and mentally work through each exercise before coming to lab. You should expect a **short pre-lab quiz at the start of each lab**. Questions are drawn from the labs to be done that day

Assignments:

Unless otherwise stated, all assignments are due at the *beginning* of the lab/class of the due date. There is a **10%/day late penalty**. The format is expected to be professional, i.e. a neat, legible, clean copy. "Rough" drafts risk rejection and a subsequent late penalty. If the assignment is more than one page, **separate pages must be stapled before** you come to class.

Study Habits:

You will probably find Biology 232 not very difficult or very tough, but surprisingly labor-intensive. Good (and regular) study habits are required to do well in this course. You should plan on a *minimum* of 6 hours outside of scheduled class time for the completion of assignments and for general studying. Joining a study group can help this make more fun.

Lecture notes will be provided in point form. These should be used as a study guide, not as your sole source of information! You will need to write down additional key words for examples and explanations given during lecture. It is also recommended practice to transcribe these notes into a study-friendly format after each lecture, incorporating additional information from your textbook. Study these notes before the next class to prepare yourself for new material, which will often build on previously covered material.

Due to time constraints, not all details can be covered in lecture, and you may be held responsible for textbook material not specifically discussed in class. Please keep up with your readings, and take advantage of office hours if you need extra clarification and help, or simply would like to discuss a topic a little further. **You will not be granted an altered exam time based on conflict with booked flights.**