BIOL*1090
INTRODUCTION TO MOLECULAR AND CELLULAR BIOLOGY
Fall 2015, 0.5 credits

DEPARTMENT OF MOLECULAR AND CELLULAR BIOLOGY
UNIVERSITY OF GUELPH

Course Objectives

This course is designed to explore foundational concepts of cell biology and genetics. These areas are the focus of a great deal of fascinating research with far-reaching biomedical, ethical, and social implications. The structure and function of cellular components will be discussed in the context of their contribution to the functioning of organisms, highlighting the importance of organelles in the function of eukaryotic cells and ultimately higher tissue assemblies. Topics will also include the study of genes and chromosomes, the mechanisms underlying the transmission of traits from one generation to the next, and the role of mutations that lead to the generation of genetic diversity and disease.

By the end of this course, students will understand the connections between the biology of cells and the inheritance of genetic information, and will appreciate the foundational importance of genetics and cell biology in all aspects of biological science. Students will also have gained experience at scientific writing for an audience of their peers, and applied their cellular and molecular perspective to an interdisciplinary problem.

Teaching Team

Instructors

Instructors	Dr. Joseph Colasanti	Dr. Terry Van Raay
Office Number	Summerlee Science Complex Room 4467	Summerlee Science Complex Room 3460
Phone Extension	Ext. 58052	Ext. 52864
Office Hours	Office Hours:Tuesdays,11:30am-12:30pm or Thursdays, 1:30-3:30pm Oct 28 through Dec 4	Office Hours: Mondays, 10:30am -12:00 noon or Wednesdays, 1:30-3:00 pm Sept 14 through Oct 28

Course Coordinator
Marissa Dahari
Summerlee Science Complex Room 3503
Ext. 53329

mdahari@uoguelph.ca

Course Email: **biol1090@uoguelph.ca**

Teaching Assistants
The seminar instructors are graduate students in the Department of Molecular and Cellular Biology. Please do not contact them outside of your seminar unless they have given you permission to do so.

Course Web Page
There is a CourseLink site set up for this course. This will allow you to access the course material, post questions on the discussion board (see below), access useful websites, and check your grades. You can access this CourseLink from http://courselink.uoguelph.ca. Your username is your Central Login ID and your password is your uoguelph email password.

5 Steps to Getting Help in BIOL*1090

Step 1: Read all posted instructions relevant to your question.

Step 2: Consult the discussion board on CourseLink. The discussion board is an open forum to promote exchange of information between students. You are encouraged to post clear, concise questions and to try to answer other students' posts. When posting a question please use a subject line that clearly indicates the topic of your question, making it easy for other students to find topics they wish to discuss. The teaching team will monitor the discussion board and provide input when deemed appropriate. Please keep all questions and comments relevant to the course. Offensive postings will not be tolerated.

Step 3: Post your question to the relevant discussion board on CourseLink.

Step 4: Go to your SLG leader

Step 5: If you are not satisfied by the responses to your questions, send your question to the course email, biol1090@uoguelph.ca. Alternatively, see an instructor during office hours posted above.

Questions regarding individual circumstances should be directed to the course email.

Lectures
Section 01: Mondays and Wednesdays at 3:30 – 4:20 am in War Mem
Section 02: Mondays and Wednesdays at 12:30-1:20 pm in ROZH 104.

All material given in lectures is the responsibility of the student, including announcements regarding reading and seminar assignments.

Learning Outcomes

By the end of this course, students should be able to:

1. Demonstrate an understanding of the fundamental elements of cell structure and molecular and Mendelian genetics.
2. Identify and evaluate the different types of scientific literature and execute an effective search of the scientific literature for completion of course assignments.
3. Integrate concepts from a broad range of disciplines in biological science to produce a poster as a member of an interdisciplinary team.
4. Synthesize ideas and communicate concepts in cellular and molecular biology using written communication skills in written assignments and examinations.
5. Practice working independently using online workshops to complete course assignments.
6. Manage time effectively and follow instructions to meet deadlines for course requirements.
7. Demonstrate proper attribution of others' ideas to avoid plagiarism in scientific communication.

Tentative Lecture Schedule

Week	Topic
1	DNA, chromosome, mitosis
2	Meiosis, Mendelian principles of inheritance
3	Application of Mendel's principles
4	Sex Chromosomes, mutations
5	From genotype to phenotype
6	Transcription, Translation
7	The cell is the fundamental unit of life
8	Cell membranes
9-11	Organelles
12	The nucleus

Seminars

The seminars will reinforce key lecture concepts through the investigation of a case study. Case-study seminars are scheduled for the weeks of **Sept 21-24**, **Oct. 5-8**, **Oct. 19-22** and **Oct. 26-29**. Assignments will be due at the beginning of seminars during the weeks of Oct 5-8, Oct 19-22 and Oct. 26-29. **Attendance is mandatory**. Details regarding the assignments, times and locations of seminars are available on CourseLink.

Interdisciplinary Project (IdP)

The interdisciplinary project will take place during seminars in the weeks of Thursday Nov 12, Nov 16-19, Nov 23-27 and Nov 30-April 2. Students from BIOL*1070, BIOL*1080 and BIOL*1090 will be brought together to explore a complex topic from multiple perspectives. **Attendance is mandatory**. Details regarding the interdisciplinary project will be posted on CourseLink.

Recording of Materials
Presentations that are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate, guest lecturer, or graduate teaching assistant. Material recorded with permission is restricted to use for that course unless further permission is granted and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

Textbooks
The required textbooks for this course are:

Principles of Genetics by P. Snustad and M.J. Simmons, 6th Edition, 2012. John Wiley and Sons, Inc. New York, NY.

Cell and Molecular Biology: Concepts and Experiments by Gerald Karp, 7th Edition, 2013. John Wiley & Sons, Inc. New York, NY.

The textbooks are available on a 2 hour reserve in the library.

iClickers
iClicker technology will be implemented in the lectures. Participation will be optional, but is highly encouraged. iClickers can be purchased at the University Bookstore.

On-line Workshops
Workshops will be available to students on CourseLink. These workshops are designed to develop skills essential to the successful completion of assignments in BIOL*1070, BIOL*1080 and BIOL*1090. Students will access the workshops as needed in each of the courses. Further details will be posted on CourseLink.

Course Evaluation

Midterm Exam – Saturday, Oct 31st at 1:00 pm – 2:30 pm
The midterm exam will cover the lecture material from lectures 1 – 12 inclusive, and the material from seminars 1, 2, 3 and 4. The midterm exam is compulsory and will count for 30% of your final grade. Alternate times will be set for midterm exams only if there is a direct conflict with another course. No other reasons will be accepted (voluntary, medical, compassionate, or other reasons). **Conflicts must be reported to the course coordinator by October 9th.** If a student does not write the midterm exam they will receive a grade of 0% unless proper documentation is provided to the instructor. In cases with proper documentation, the weight of the missed midterm exam will be added to the final exam.

Final Exam – Wednesday, Dec 16th at 11:30 am – 1:30 pm
The final exam is a compulsory examination and will be comprehensive.

Grade Assessment

Assessment	Value (% of final grade)	Date	Learning Outcome
Seminar Assignments	4% (2% for each assignment based on your best 2 assignments)	In scheduled seminar during weeks of: Oct. 5-9, Oct. 19-23 and Oct. 26-30	1,4,6
Scientific Literature Assignment	4%	Oct.6	2,5,6
Midterm Exam	30%	Oct. 31	1,4,6
OnLine Workshops	2%		
Writing Assignment	10%	Nov. 10	1,4,5,6,7
Interdisciplinary Project	10%	In scheduled seminar during weeks from Nov 5-27	1,2,3,4,5,6,7
Final Exam	40%	Dec 16	1,4,6

Policy for Re-grading of Midterm Exams and Assignments
Students who wish to have their midterm exam or assignments re-graded must submit their exam or assignment within 1 week of the return of the midterm exam or assignment. The entire midterm exam or assignment will be re-graded so the mark may go up, down or remain unchanged.

Undergraduate Degree Regulations and Procedures
The Academic Calendar are the source of information about the University of Guelph's procedures, policies and regulations that apply to undergraduate, graduate and diploma programs.

E-mail Communication
As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement
When you find yourself unable to meet an in-course requirement because of illness or

compassionate reasons, please advise the course instructor in writing to the course e-mail biol1090@uoguelph.ca, with your name, and id#. See the Undergraduate Calendar for information on regulations and procedures for Academic Consideration:

Drop Date
The last date to drop one-semester courses, without academic penalty, is Friday, Nov 6, 2015. For regulations and procedures for Dropping Courses, see the Undergraduate Calendar.

Copies of out-of-class assignments
Keep paper and/or other reliable back-up copies of all out-of-class assignments; you may be asked to resubmit work at any time.

Accessibility
The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services SAS, formerly Centre for Students with Disabilities as soon as possible. For more information, contact SAS at 519-824-4120 ext. 56208 or email csd@uoguelph.ca

Academic Misconduct
The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar.