Life Science 2GO3: Genes, Genomes, and Society  
Winter 2018

INSTRUCTOR:  
Kimberley Dej, Ph.D., GSB105, dej@mcmaster.ca  
Please post course-related questions to LS2G03@mcmaster.ca only.  
Office hours posted on Avenue to Learn.

LECTURES:  
Monday, Wednesday, Thursday, 10:30am  
MDCL 1105

TUTORIALS:  
Online tutorials and readings are available to assist in explaining genetic principles and calculations. Tutorials are associated with short problem sets and online quizzes.

COURSE DESCRIPTION:  
Genetics is the study of the patterns of inheritance that govern our appearance, behaviour, and health. We seek to understand these patterns of inheritance and the biology that underlies them. With the 21st century came the sequencing of the human genome giving us the Age of Genomics. Our individual genome is the collection of all of the genes that we have inherited from each of our two biological parents. We will examine the fundamental principles of genetics that allow us to understand the avalanche of data available to us. We can then explore how recent genetic advances offers limitless promise and poses complex ethical issues. As citizens we need to understand the basic biological tenets of genetics so that we can make informed decisions about how genetic information is interpreted, used, represented, and shared.

TUTORIALS:  
Online tutorials and readings are available to assist in explaining genetic principles and calculations. Tutorials are associated with short problem sets and online quizzes.

COURSE AIMS:  
Understand and apply the basic principles of Mendelian genetics.  
Identify the principles behind interpreting genomic information.  
Apply genetic principles to critically analyze case studies.  
Practice the numeracy skills necessary to apply and interpret genetic research and clinical data.  
Identify common misconceptions about genetics and find ways to explain the principles  
Critically analyze common popular perceptions about genetics.  
Identify and practice science literacy skills and apply to the field of genetics.  
Thoughtfully and civilly engage in evidence-based discussions about the ethical application of genetic information.

COURSE OBJECTIVES:  
By the end of this course students should be able to:  
• Understand and explain basic principles of Mendelian genetics  
• Apply basic principles of probability and statistics to genetic data  
• Apply critical thinking skills in the interpretation and application of genetics information  
• Develop written and oral communication skills to explain genetic principles

FORMAT:  
This course uses Avenue to Learn to post the course outline, assignments, and other notices.  
Go to http://avenue.mcmaster.ca to find out how to log-on to the course’s platform

TEXTBOOK/READINGS:  
There is not a required textbook for this course. Required readings will be provided for each lecture.  
Most readings can be found at Nature Scitable: http://www.nature.com/scitable
COURSE EVALUATIONS:

Tests 1, 2, 3, and 4: (18% each) The best three grades of four will be used in the calculation of your final grade. Each of the first three tests is a 50-minute, in-class test that focuses upon the concepts, principles, and calculations in the prior lectures. Note that test 4 is a cumulative 50-minute test in the last week of class. (TOTAL: 54%)

Tutorials: (10%) 11 online quizzes will be available – each is worth 1% (top 10/11 grades taken). These are good practice for the tests. While discussion about the tutorial material for the quizzes is encouraged, it is to your advantage to be able to complete the quizzes independently. (TOTAL: 10%)

Genetics infographic: (14%) In groups of 2 or 3, you will prepare a one-page infographic that explains a genetic concept or question. You will also be asked to reflect upon the assignment as part of your ePortfolio (4%). (TOTAL: 18%)

Assignments: (TOTAL: 18%)
- Opinion Piece: (6%) A current topic in genetics will be provided. You are asked to write a short opinion piece on the topic with reference to the current understanding of the science behind the topic (maximum 750 words).
- Movie Review: (6%) A popular science fiction movie will be assigned. You are asked to write a short review of the accuracy of the science within the movie (maximum 750 words).
- Personal Genome Testing: (6%) You will be provided with a data set to analyze with respect to personal genome testing (PGT).

SCHEDULE OF LECTURE MATERIAL: (Assignments and tests are usually due on Thursdays.)

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<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Tutorial</th>
<th>Tests</th>
<th>Assignments</th>
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<tbody>
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<td>Introduction to the course on Thursday January 4th</td>
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<td>Week 1</td>
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<td>Week 6</td>
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<td>Week 12</td>
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* Test grade is best 3 of 4. Test #4 is cumulative.
If you miss any one test, you must submit an MSAF and write the other 3 tests.

Final Research Project: 100%

CHANGES WILL BE POSTED ON AVENUE TO LEARN

THIS CALENDAR IS TENTATIVE AS OF JANUARY 2nd, 2018.
CHANGES TO COURSE OUTLINE:
At certain points in the course it may make good sense to modify the schedule outlined. The instructor reserves the right to modify elements of the course and will notify students accordingly (in class and post any changes onto Avenue to Learn). Posted changes take precedence over this course outline.

POLICY ON MISSED WORK, EXTENSIONS AND LATE PENALTIES:
We recognize that the use and reliance on the MSAF by students is closely tied with both stress and time management. With that in mind, we have developed a more flexible grading scheme to help you plan and manage both stress and time. This reflects our commitment to Universal Instructional Design Principles as well as McMaster’s Forward with FLEXibity, which “aims to enhance accessibility and to equitably meet the learning needs of a diverse student body.”

Module quizzes
Quizzes are completed individually on Avenue to Learn. If you miss a quiz, there is no opportunity to make it up. The top 10 of 11 quiz grades will contribute to 10% of your final course grade.

Individual Assignments:
Assignments submitted by the due date will receive both feedback and a grade. You may submit your assignment up to 3 days late with no late penalty applied and no MSAF required. If you submit during the 3-day grace period, you will receive a grade, but there will be no feedback provided by the TAs. Assignments not submitted within 3 days of the due date will receive a grade of zero. MSAFS are not accepted or required for these assignments, and we will not provide additional accommodations beyond the 3-day grace period.

Group Assignment (infographic):
Assignments submitted by the due date will receive both feedback and a grade. You may submit your assignment up to 3 days late with no late penalty applied and no MSAF required. If you submit during the 3-day grace period, you will receive a grade, but there will be no feedback provided by the TAs. Assignments not submitted within 3 days of the due date will receive a grade of zero. MSAFS are not accepted or required for these assignments, and we will not provide additional accommodations beyond the 3-day grace period.

Lecture Tests
The top three test grades of the four tests written will be used to calculate 54% of your test grade. You MUST write at least 3 tests. If you miss one of the first three lecture tests, you must submit an MSAF and contact the instructor. As a result, you will be required to write test #4 in the last week of class. Test #4 will be a cumulative test that covers the entire term.

REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK’ for details.
If you are absent from the university for a minor medical reason, lasting fewer than 5 days, you may report your absence, once per term, without documentation, using the McMaster Student Absence Form. Absences for a longer duration or for other reasons must be reported to your Faculty/Program office, with documentation, and relief from term work may not necessarily be granted.

When using the MSAF, enter the instructor’s contact (LS2G03@mcmaster.ca) should be entered as the contact for the course and you must contact the instructor (LS2G03@mcmaster.ca) to learn what relief may be granted for the work you have missed, and relevant details such as revised deadlines, or time and location of a make-up exam. Please note that the online MSAF can only be used for term work worth less than 25% and it cannot be used for the final examination.

Note the following:
With an approved MSAF the following accommodations may be granted (accommodation is not guaranteed).

- If you miss a test and submit an MSAF, your grade of zero on that test will be dropped. As a result, you MUST complete test #4 in the final week of class.
- MSAFs will not be accepted for online quizzes. If you miss a quiz, a grade of zero will automatically be assigned. The top 10 of 11 quiz grades will be recorded in your final grade.
- MSAFs will not be accepted for assignments. There is a three-day grace period for submission of assignments available to all students.
ADDITIONAL STATEMENTS

ACADEMIC INTEGRITY
You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results, or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at http://www.mcmaster.ca/academicintegrity.

The following illustrates some forms of academic dishonesty:
  • Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
  • Improper collaboration in group work. While we encourage you to work with your peers in solving problems on your assignments, copying of answers is not acceptable. Your final work must be your own.
  • Copying or using unauthorized aids in tests and examinations.
  • Submission of work previously submitted to another course.

Use of Turnitin.com
In this course we may be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Turnitin.com and in hard copy so that it can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to www.mcmaster.ca/academicintegrity.

ACADEMIC ACCOMMODATIONS OF STUDENTS WITH DISABILITIES
Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator (Instructor or Instructional Assistant). Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University’s Policy for Academic Accommodation of Students with Disabilities.

GRADERS
Grades obtained in Life Science 2G03 will be converted according to the scheme generally used at McMaster University which can be viewed here: http://registrar.mcmaster.ca/exams/grades/
When the final marks are obtained, ALL borderline cases will be reviewed and, where warranted, adjustments will be made in the final mark.