Course description

The goal of this course is to examine the myriad of ways that genetics affects our everyday lives through deconstruction of issues of the day. This will include all relevant genetic techniques and theories pertaining to the topic of the day, including genetic modification, personal medicine and commercial uses. We will also explore some of the social machinery that regulates the use of genetics in everyday life. By the end of this course, students will be able to judge the merits of genetics used in all walks of life, evaluate and advise on public policy related to the use of genes in society, as well as dissect and critically evaluate both media and scientific reports on new and novel genetic techniques.

Lecturer: Dr. Reynald Tremblay, Sessional Lecturer (MCB)
Office - SCIE 4443, reynaldt@uoguelph.ca.
Office hours: by appointment

Course schedule
Lectures
Tuesdays
11:30am – 2:20pm
Mackinnon Building, Room 227

Learning goals and rationale

1) Understand the basics of how genetic information/manipulation is used in everyday life
2) Distinguish between what constitutes scientific evidence and what is opinion
3) Critically evaluate genetic topics of the day
4) Establish theoretical guidelines to address new/novel uses of genes

Course Resources

The Desire2Learn (D2L) site (access via “course link” at http://www.uoguelph.ca/) provides a lot of information about the course including abbreviated lecture notes and your marks.

There is no required textbook for this course. Throughout the semester, additional readings will be posted on the D2L site for the course, as well as suggestions on databases to use for scientific searches.
Course Content

The course is composed of a single class each week, divided into several subsections with breaks throughout. Each class, excepting the first one, will have a group quiz on the background material/assigned readings, followed by a discussion of the topic of the week, then ending with a brief lecture covering the foundational information needed to approach the following week's discussion.

<table>
<thead>
<tr>
<th>Date</th>
<th>Class number</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 15</td>
<td>1</td>
<td>Course setup, getting to know one another</td>
</tr>
<tr>
<td>September 22</td>
<td>2</td>
<td>GMO part I</td>
</tr>
<tr>
<td>September 29</td>
<td>3</td>
<td>Personal Genetics</td>
</tr>
<tr>
<td>October 5</td>
<td>4</td>
<td>Epigenetics</td>
</tr>
<tr>
<td>October 13</td>
<td>-</td>
<td>Fall break – No Class – Rescheduled to Thursday, December 3</td>
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<tr>
<td>October 20</td>
<td>5</td>
<td>Mid-term, Science Fiction/Science fact</td>
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<tr>
<td>October 27</td>
<td>6</td>
<td>Large-scale Genetics</td>
</tr>
<tr>
<td>November 3</td>
<td>7</td>
<td>Cancer Genetics</td>
</tr>
<tr>
<td>November 10</td>
<td>8</td>
<td>Medical/industrial applications</td>
</tr>
<tr>
<td>November 17</td>
<td>9</td>
<td>Agricultural breeding</td>
</tr>
<tr>
<td>November 24</td>
<td>10</td>
<td>Historical Genetics</td>
</tr>
<tr>
<td>December 1</td>
<td>11</td>
<td>Legal system and Genetics</td>
</tr>
<tr>
<td>December 3</td>
<td>12</td>
<td>GMO part II (Make-up date for fall break)</td>
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Methods of Assessment

Your grade for the course will be determined from the total results of groups quizzes, a 1 hour mid-term, participation, discussion moderation, a technical review paper and a final theoretical paper due at the end of the semester (see below for marks breakdown/due dates).

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percentage</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Group Quiz</td>
<td>16%</td>
<td>In class, beginning September 22nd</td>
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<tr>
<td>Mid-term examination</td>
<td>14%</td>
<td>In class, October 20th</td>
</tr>
<tr>
<td>Participation</td>
<td>25%</td>
<td>In class, on going</td>
</tr>
<tr>
<td>Discussion Moderation</td>
<td>10%</td>
<td>In class, on going</td>
</tr>
<tr>
<td>Topics review paper</td>
<td>15%</td>
<td>November 3rd, at start of class</td>
</tr>
<tr>
<td>Theoretical paper</td>
<td>20%</td>
<td>December 3rd, at start of class</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
</tbody>
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Group Quizzes will occur at the beginning of 8 classes, covering the background techniques and material assigned the previous week. The technical aspects are cumulative.
**Topics review paper** The review paper will cover one of the many techniques described throughout the first 3 classes, and will consist of a scientific literature review of the development and use of the assigned technique.

**Theoretical paper** This paper will explore the considerations of a newly developed genetic technique in the not-so-distant future. This paper is to explore societal, economical and ethical issues surrounding the newly developed (but not existing today) technique.

The midterm will cover all material presented in the classes prior to the midterm, as well as all assigned reading material. The exam will consist of multiple choice and short-answer questions covering the techniques and methods used in genetics.

**Important Dates**

- **First Group Quiz** Tuesday, September 22nd, 2015
- **Midterm** Tuesday, October 20th, 2015
- **Review paper** Tuesday, November 3rd, 2015
- **Drop Date (without penalty)** Friday, November 6th, 2015
- **Theoretical paper** Thursday, December 3rd, 2015
- **Make-up date for fall break** Thursday, December 3rd, 2015

**Course and University Policies**

**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 (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact, and be prepared to provide supporting documentation. See the undergraduate calendar for information on regulations and procedures for Academic Consideration: [http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml](http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml)

**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 the Centre for Students with Disabilities (soon to be renamed Student Accessibility Services) as soon as possible.
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: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

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

Drop Date
The last date to drop one-semester courses, without academic penalty, is the 40th class day. To confirm the actual date please see the schedule of dates in the Undergraduate Calendar. For regulations and procedures for Dropping Courses, see the Undergraduate Calendar: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

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.

Recording of Materials
Presentations which 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 or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Grading
If you have questions about the grading of the midterms or quizzes, please contact Drs Heyland and Tremblay within 1 week of the posting of the marks. A mark for the lab reports will only be given if the report is handed in prior to the end of your assigned lab section. If you are unable to attend that section, please make arrangements with Drs Heyland or Tremblay. Do not attend another section without asking first, as the labs have limited space. For questions about lab
reports, please speak to the TAs first in regards to grading. If there are still concerns about grading, please bring them to the attention of Drs Heyland and/or Tremblay.

Campus Resources

The Academic Calendar is the source of information about the University of Guelph’s procedures, policies and regulations which apply to undergraduate, graduate and diploma programs:
http://www.uoguelph.ca/registrar/calendars/index.cfm?index

If you are concerned about any aspect of your academic program:

- make an appointment with a program counsellor in your degree program. [链接]

If you are struggling to succeed academically:

- There are numerous academic resources offered by the Learning Commons, including Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple-choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. [链接]

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. [链接]
- Student Health Services is located on campus and is available to provide medical attention. [链接]
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high-performance situations. [链接]

If you have a documented disability or think you may have a disability:

- The Centre for Students with Disabilities (CSD) can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability. For more information, including how to register with the centre please see: [链接]