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Course Overview and Goals:

MGY200 introduces you to genetics and microbiology with an emphasis on the process by which scientific discoveries are made. Fundamental concepts are taught from a historical point of view to teach both the concept and the thought – the *imagination* and *ingenuity* that is essential to scientific discovery. The course then transitions into the modern era of genetics and its ultimate impact on human health. Lectures will walk students through topical biological problems and the cutting-edge approaches that are used to better understand biology and tackle threats to our health. Examples will be taken from the world-class labs of Toronto-area scientists and others to illustrate the current state-of-the-art. Topics to be discussed include combating emerging and recurring microbial threats, the biology of cancer, the power of stem cells, distinguishing features of the human species, using CRISPR and other tools to engineer genes and genomes, and understanding longevity.

Below you'll find all the following information about MGY200H1:

1. [Prerequisites](#) for the course
 2. [Course logistics](#), including timing and location
 3. [Course requirements and administration](#), including information on required readings
 4. The [engagement norms and expectations](#) for MGY200H1
 5. How to best [get help](#) if you're struggling in this course
 6. [Student accommodations](#) and information about accommodated testing
 7. The [evaluation and grading scheme](#), including important deadlines for assessments and tests
 8. The [class schedule](#)
 9. [Assessment details](#) for each graded component in the course
 10. Important [course policies](#) that are specific to MGY200H1
 11. Important [institutional policies](#) that are applied to all courses at the University of Toronto
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Prerequisites:

To participate in this class, we assume that you have taken the following courses:

- BIO120H1
- BIO230H1/BIO255H1

If this is not the case, and you have been given special permission to take this course, you are responsible for any prerequisite material that is assumed as prior knowledge during class.

Course Logistics:

When: Tuesday *and* Thursday, 12:10 – 1:00pm

Where: Tuesdays: McLennan Physical Laboratories ([MP](#)) Room 102

Thursdays: Sidney Smith Hall ([SS](#)) Room 2117

Course Requirements & Administration:

All course-related materials, including:

- Announcements
- Lecture notes
- Defined terms & assigned reading / viewing / listening materials
- Midterm and Exam information
- Assignment descriptions and rubrics
- Grades and feedback on graded material

will be communicated **through Quercus and in class**. There is no textbook for MGY200H1 – the assigned preparative material and lecture content covers everything that you are expected to learn.

A Note on Reading Materials:

Any academic papers that you are asked to read, as well as almost any other academic work that you can think of is **free to access** for students at the University of Toronto. Our library system is one of the best in the world, and we have site licenses for almost all journals of interest. From a campus IP, accessing almost all the world's biological / biomedical literature will be free.

Off campus, you can access the University of Toronto library [here](#). You may want to consider accessing the database [Pubmed](#) to search for papers of interest.

Engagement Norms & Expectations:

In addition to adhering to the [UofT Codes of Conduct](#), below are the main course engagement norms and expectations. These are essentially the “rules” for ensuring that everyone benefits from the same safe and supportive learning environment. As your instructors, we expect that you will:

- Take full responsibility for your own learning
- Come on time and prepared to class
- Complete all coursework on time, and to the best of your abilities
- Act as our partners in creating and sustaining an environment of personal and academic integrity and honesty, acting responsibly in the context of writing, citing, referencing, attributing appropriately, and testing
- Contribute to building a positive classroom community by actively participating in class and helping your peers learn
- Treat your fellow students, instructor, guests, and teaching assistants with respect, and embrace the diversity of learners in our cohort
- Be thoughtful about how your language, tone, and / or humour may be interpreted, especially in the online environment
- Communicate openly regarding any conflicts, questions, or problems that may arise

As students, you are entitled to expect that we will:

- Establish and maintain a constructive, safe, and respectful environment for learning
- Come prepared to every class
- Plan each class to help you achieve the course's learning objectives
- Provide clear guidelines for every test and assessment
- Act as your partners in creating and sustaining an environment of personal and academic integrity and honesty, acting responsibly in the context of grading and assessment
- Provide timely and useful feedback

Getting Help in MGY200H1:

If you encounter difficulties with the material in any part of the course, please first consult the reference material. If after reading the background material you still have questions, please ask your instructor or the TA team! The best time to catch us for questions is in person, before / during / after class time. None of us have set office hours, but we will all be more than happy to stay after class to discuss course topics for as long as needed. In addition, extra help can be easily acquired by setting up a time to chat with the professors. Simply email [the speaker whose content you have a question about](#) to arrange a time to chat.

Student Accommodations:

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs.

Students with diverse learning styles and needs are welcome in this course. If you have a disability that may require accommodations, please contact the [Accessibility Services](#) office. If you are already registered with Accessibility Services and require accommodated testing, please inform [Accommodated Testing Services](#) about the date of the midterm in this class as soon as possible.

Evaluation and Grading Scheme:

Assignment		Percent of Assignment	Percent of Final Grade	Due Date	Submission
In-class Quizzes			20%	*Every Lecture	Quercus
Essay #1	Topic Selection Quiz	1%	10%	January 9 th	Quercus
	Title & Outline	9%		January 23 rd	
	Complete Essay	90%		February 13 th	
Midterm			25%	February 3 rd	In Person
Essay #2	Title & Outline	10%	10%	February 27 th	Quercus
	Complete Essay	90%		March 20 th	
Final Exam			35%	TBD	In Person

Assessment Details:

Each assessment is summarized below. More information about all assessments will be provided in class, and on Quercus.

In-class Quizzes – 20%

- Relevant terms and literature (and occasionally even videos or podcasts) will be disseminated before every class. Your classroom experience will be better if you take the time to look through this material before you arrive, and to help motivate you to do this, there will be a very short quiz at the beginning of every lecture, at exactly **12:10pm**.
 - This includes all lectures, including the *first* lecture
 - *There will be no quiz on the midterm day
 - In total, this represents 23 quizzes, but we'll only use your best 19 quizzes to calculate your mark.
 - Everyone in the class gets **four free passes**. This means your worst four marks will be given a perfect score. This takes into account any and all absenteeism. There are no exceptions to this rule.
- Each quiz will be **three questions long**, almost exclusively multiple choice, and will take **less than five minutes** to complete.
- If you have accessibility needs that might require a modification to this quiz structure, please let us know by email asap.

Essay #1 and Essay #2 – 10% each; 20% total

- You will be responsible for writing two essays, each of which focusses on a research story / discovery that originates from a different lab within the Department of Molecular Genetics.
- Each essay requires a separate submission of a proposed Title and Outline on Quercus in advance of the final essay submission
- Essay #1 also requires the submission of the Topic Selection Quiz

Midterm – 25%

- The midterm will cover material presented in lectures, but could also include questions from assigned preparatory materials
- The midterm will take place during class time on February 3rd
- We will write our midterm in a **different room** than usual – Brennan Hall ([BR](#)) Room 200
- The midterm will consist of both multiple choice and short answer questions
 - Practice midterm questions will be posted on Quercus

Final Exam – 35%

- The final exam will take place during the spring term formal exam session, with the exact date and location to be determined by the Faculty of Arts and Science
- The exam will consist of both multiple choice and short answer questions
 - The exam will be cumulative, but will be heavily weighted towards the content that's taught *after* the midterm
 - Practice exam questions will be posted on Quercus

Test and Exam Conflicts and Makeup Testing:

- **Conflicts for Scheduled Tests:** If you encounter difficulties that are beyond your control and are unable to write the midterm at the scheduled time, we will make every effort to accommodate you.
 - Students who petition for special consideration for medical reasons **MUST** use the University of Toronto Student Medical Certificate and email Dr. Styles on the day that you are sick.
- **Midterm Makeup:** There will be one make-up exam for the midterm for those students with a valid U of T medical certificate. No other make-up will be offered.
 - The makeup midterm will be held the week following the scheduled midterm. Specific information about timing and location will be communicated directly to students who need to write this makeup test.

Class Schedule:

Week	Date	Topic	Lecturer
1	Tuesday January 6 th	Course Introduction <i>and</i> Patterns of Inheritance	Dr. Styles
	Thursday January 8 th	Genetic Linkage	Dr. Styles
2	Tuesday January 13 th	DNA is The Vessel	Dr. Styles
	Thursday January 15 th	Code Cracking: Reading DNA	Dr. Styles
3	Tuesday January 20 th	Cracking A Different Code: Reading Academic Papers	Dr. Styles
	Thursday January 22 nd	Molecular Biology	Dr. Styles
4	Tuesday January 27 th	Libraries and Sequencing	Dr. Styles
	Thursday January 29 th	Genetic Screens and Mutagens	Dr. Styles
5	Tuesday February 3 rd	MIDTERM	
	Thursday February 5 th	Fundamental Genetic Concepts	Dr. Styles
6	Tuesday February 10 th	Chemical Genetics	Dr. Styles
	Thursday February 12 th	Enter the Matrix: Computational Biology Investigations	Dr. Bader

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7	Tuesday February 17 th	WINTER READING WEEK – NO CLASSES THIS WEEK	
	Thursday February 19 th		
8	Tuesday February 24 th	Genetic Variation in Health and Disease	Dr. Hill
	Thursday February 26 th	Protein Structure	Dr. Hill
9	Tuesday March 3 rd	Infectious Disease	Dr. Hill
	Thursday March 5 th	What Makes a Pathogen?	Dr. Hill
10	Tuesday March 10 th	Emerging Infectious Diseases	Dr. Hill
	Thursday March 12 th	Antibiotic Mechanisms	Dr. Hill
11	Tuesday March 17 th	Antibiotic Resistance	Dr. Hill
	Thursday March 19 th	Stem Cells	Dr. Huang
12	Tuesday March 24 th	Cancer Genetics	Dr. Huang
	Thursday March 26 th	Model Organisms to Study Cancer	Dr. Huang
13	Tuesday March 31 st	Genetic Interactions	Dr. Huang
	Thursday April 2 nd	Protein-Protein Interactions	Dr. Huang

Course Policies:

Deadlines: Unless otherwise specified, assignments are due at **9:00PM** on the noted due date. Please adhere to the posted deadlines for all assignments. If this is not possible, please reach out to Dr. Styles.

Note that this applies *only* to take-home assignments. In-class quizzes must be completed at the beginning of each lecture. Failing to do so will result in a grade of 0% on the quiz.

Note also that this *does not apply* to the midterm or to the final exam, which must be written in person at the time and location specified by the course coordinator, and by the Faculty of Arts and Science. All times, dates, and locations of in person tests will be communicated directly on Quercus.

Copyright and Privacy: This course, including your participation, may be recorded during some sessions. In the event that a session or a portion of a session will be recorded, this will be clearly announced before the recording begins. Course videos and materials belong to the instructor, the University, guest lecturer and/or other sources depending on the specific facts of each situation, and are protected by copyright. **Do not** copy or share any course or student materials or videos without my explicit written permission. Otherwise all such reproduction is an infringement of copyright and is absolutely prohibited. For questions or concerns about recording and use of videos in which your participation appears, please contact the relevant term instructor.

The Use of Generative AI: Generative Artificial Intelligence (AI), and specifically foundational models that can create writing using minimal human prompting, are proliferating. This includes not only Microsoft Copilot, ChatGPT, and Claude, but many writing assistants that are built on this or similar AI

technologies. We, as instructors, are still learning the best way to navigate the existence of AI tools. A critical concern with generative AI is its widespread and pervasive failure to correctly cite information, such as attributing an idea to an incorrect or inappropriate source. Correctly referencing your sources is a cornerstone of academia and critical in many types of work. **To underscore the importance of appropriate referencing, inappropriate referencing (regardless of the origin, AI or not) will result in an 8% deduction for each infraction from essay grades in this course.**

The use of Generative AI is **not permitted** for any of the following:

- Finding quiz answers during an in-class quiz
- Creating an outline for your essay
- Writing original work that you claim as your own
- Representing an AI-generated idea or expression of an idea as your own

Use of generative AI tools in such a manner will be considered an [academic offense](#).

The use of Generative AI is **permitted** for:

- Brainstorming and generating ideas
- Helping you narrow down your lab search / finding a lab in our department that is of interest to you as you begin considering your essays (note – you'll need to be clear with a GenAI platform what your specific interests are for this to work!)
- Proofreading and copy editing of **your original work**
- As a learning aid to support your understanding of a concept described in a paper or in class, noting that these tools can 'hallucinate' – provide incorrect information. We encourage you to reach out to your professors / TA's for help, but there may be instances in which generative AI could help support your learning
- Practicing concepts in this course

You are ultimately accountable for the work that you submit, and instructors reserve the right to ask you to explain your process for creating your assignment. Copying or representing an idea that has been AI generated as your own may be considered an academic offence in this course, and is prohibited. This course policy is designed to promote your learning and development, and to help you reach our course learning outcomes – with this in mind, we expect that the work that you submit in this course is your own original writing and is not the product of generative AI. In other words, **no AI content is allowed in your final submission.**

Institutional Policies:

Academic Integrity: This is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. [The University of Toronto's Code of Behaviour on Academic Matters](#) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

1. Using someone else's ideas or words without appropriate acknowledgement.
2. Submitting your own work in more than one course without the permission of the instructor.
3. Making up sources or facts.
4. Taking an idea from a source and not acknowledging it with a citation, including:
 - Copying material word for word and failing to indicate that the words are copied from a source through the use of quotation marks and citation of the source material.
 - Changing a few words in a sentence or reversing the order of clause. This is not paraphrasing! You must read, internalize the information, think about it, and reframe it with your own mind, and express that reframed idea using your own words. There is always a new way to express an idea in one's own words.
 - Translating material from a source in another language without acknowledgement.
5. Obtaining or providing unauthorized assistance on any assignment, including assistance from Generative AI, as explained by the [course policies](#).

On tests, exams or in-class assignments:

1. Using or possessing unauthorized aids.
2. Looking at someone else's answers during an exam or test.
3. Misrepresenting your identity.

In academic work:

1. Falsifying institutional documents or grades.
2. Falsifying or altering any documentation required by the University.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour, research and citation methods, you are expected to seek out additional information on academic integrity from your instructor / other institutional resources.

Learn more:

UofT Academic Integrity – [Resources for Students](#), [Perils and Pitfalls](#), [Smart Strategies](#)
UofT Writing Centre – [How Not to Plagiarize](#)

Plagiarism Detection Tools: Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the [Centre for Teaching Support & Innovation web site](#).

Accessibility Needs: The University of Toronto is committed to accessibility, and provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible to initiate the registration process (<http://www.studentlife.utoronto.ca/as>).

Services and Support: The following are some important links to help you with academic and/or technical service and support:

- General student services and resources at Student Life (<http://www.studentlife.utoronto.ca>)
- Full library service through University of Toronto Libraries (<https://onesearch.library.utoronto.ca>)
- Resources on conducting online research through University Libraries Research (<https://onesearch.library.utoronto.ca/research>)
- Resources on academic support from the Academic Success Centre (<http://www.studentlife.utoronto.ca/asc>)
- Learner support at the Writing Centre (<http://writing.utoronto.ca/writing-centres/graduate-students/>)
- Information about Accessibility Services (<http://www.studentlife.utoronto.ca/as>)
- Information for Technical Support/Quercus Support (<https://community.canvaslms.com/t5/Student-Guide/tkb-p/student>)