

## Department of Biology Course Outline

SC/BIOL 2040 3.00 Genetics  
Fall 2019

### Course Description

A study of the organization and behaviour of genes and chromosomes and their roles in cells, organisms, populations and evolution. Three lecture hours, one (mandatory) tutorial hour.

### Prerequisites (strictly enforced)

Both SC/BIOL 1000 3.00 & SC/BIOL 1001 3.00, or SC/ISCI 1110 6.0, or both SC/ISCI 1101 3.0 & SC/ISCI 1102 3.00. Course credit exclusion: SC/BIOL 2040 4.00.

### Course Instructors and Contact Information

**Course Instructor:** Dr. Tamara Kelly [biol2040@yorku.ca](mailto:biol2040@yorku.ca)

**TA Coordinator:** TBA [biol2040@yorku.ca](mailto:biol2040@yorku.ca)

**TAs\*:** TBA

\*Please contact only your own Tutorial Section TAs

**Dr. Kelly's Drop-in student hours:** subject to change; any changes will be posted to Moodle.

Wed (in person) 12:00 pm – 1:00 pm (168 Farquharson) – *start Sept. 18*

Thurs. (in person) 3:00 pm – 4:00 pm (168 Farquharson) – *start Sept. 12*

Fri. (online) 11:15 am – 12:15 pm via Adobe Connect – *start Sept. 13*

- Drop-in times don't fit with your schedule? Request in-person or virtual (e.g., by Skype) appointment.

### Schedule

**Classes (ACW 109):** Tuesdays/Thursdays 1:00 – 2:30 pm

**Tutorials (LSB 101):** Tues. (2:30, 3:30, 4:30, 5:30 pm)/Wed. (1:30, 2:30, 3:30 pm)

- Attend the tutorial section in which you are registered. Permanent switches allowed until Mon. Sept. 9<sup>th</sup> at 3:00 pm.

### Evaluation (to be formalized by Sept. 20, 2019)

<b>Midterm 1*</b>	20%	Tues. Oct. 8 (during class time, ACW 109); two-stage
<b>Midterm 2*</b>	20%	Tues. Nov. 12 (during class time, ACW 109); two-stage
<b>Final Exam*</b>	30%	Dec. exam period, scheduled by Registrar's Office; two-stage
<b>Tutorials<sup>∅</sup></b>	16%	Weekly (best 8 of 9); two-stage; mandatory even if repeating; see schedule online
<b>Activities**</b>	6%	In-class (iClicker, worksheets, etc.)/online assignments (Moodle)
<b>Quizzes<sup>†</sup></b>	7%	Weekly online pre-class preparation quizzes (includes reflective question)
<b>Reflections</b>	1%	Post-midterm reflections; due Fri. Oct. 11 and Fri. Nov. 15

The assessment methods I use reflect my intent to provide an assessment of your performance, but more importantly, continual practice and on-going feedback on your learning.

- \*Midterm and final exams are **two-stage exams**, where Stage 1 is an individual exam, and Stage 2 is a group exam. Stage 1 is weighted as 85%, and Stage 2 is 15%. **If Stage 1 grade > Stage 2, it will count for 100% of the test grade.**
  - \*You **must** pass the sum of the midterms and the final (*i.e.*, **get a grade of 35/70 on the exams**) to pass the course. You must also write both midterms to be eligible to write the final examination.
  - \*The exam with the highest score will be weighted 5% more, while the test with the lowest score will be weighted 5% less. *E.g.*, if you earn 70% on Midterm 1, 75% on Midterm 2, and 80% on the Final Exam, your exams are weighted as follows: Midterm 1 – 15%; Midterm 2 – 20%; Final – 35%.
- <sup>∅</sup> Tutorials are **mandatory** and you **must attend the tutorial in which you are registered**. You are allowed 1 temporary switch per term, for valid reasons only. **Makeup tutorials may be available for students with valid reasons.** Because tutorials are held within a very short time frame, makeup tutorials **may not be possible and thus the missed tutorial would count as your dropped tutorial mark.** Without a legitimate documented reason, you will receive a zero for a missed tutorial.

- Tutorials are two-stage (50% individual; 50% group) assignments that help you apply material from the previous week(s), and give you feedback on your understanding. No textbooks or notes are allowed.
- If you miss a tutorial for whatever reason etc., this will count as your dropped tutorial
- **\*\*Includes in-class activities (e.g., REEF questions, worksheets) & online assignments.** Most items earn points for participation/completion with good-faith effort (*acceptable level of effort and quality of responses*, not marked for correctness). The lowest 20% of activities & assignments will be dropped from your grade (thus you need only earn 80% of the total number of activity points to earn full marks for this part of the course). This allows for missed classes (e.g., due to illness or other reasons) or malfunctioning hardware/software.
  - The bring-your-own-device software, **REEF**, requires that you have a (charged) web-enabled device such as a smartphone, tablet, or laptop. If you do not have such a device, the [library loans out tablets and laptops](#).
- **\*Pre-class preparation quizzes:** Will consist of ~8 – 15 questions related to pre-class readings/videos, which you're expected to complete prior to class. Marked on basis of correctness. You have 2 attempts for each quiz; the highest quiz grade counts. Quizzes typically open on Thursday afternoons and close the following Tuesday morning. Each question = 1 point and the lowest 20% of quiz questions (including zeroes) will be dropped from your grade. This is to account for a missed/forgotten quiz, software issues, etc.

## Important Dates

<b>Last day to switch tutorials:</b>	Mon. Sept. 9, by 3:00 pm
<b>Tutorials start:</b>	Tues. Sept. 10 & 11, run weekly with noted exceptions (see Moodle)
<b>Midterm 1:</b>	Tues. Oct. 8
<b>Drop Deadline:</b>	Fri. Nov. 8 (Last day to drop the course without course on transcript)
<b>Midterm 2:</b>	Tues. Nov. 12 ( <b><i>Please note this is after the drop deadline!</i></b> )
<b>Course withdrawal:</b>	Sat. Nov. 9 to Dec. 3 (Course still appears on transcript with "W")
<b>Final Exam:</b>	TBA, during December exam period (cumulative)

For additional important dates such as holidays, refer to the ["Important Dates"](#) section of the Registrar's Website.

## Resources

### 1. Textbook (OPTIONAL):

- **Klug et al. 2<sup>nd</sup> Custom Edition for York University. Concepts of Genetics.** Available new (~\$130)/used.
  - Available as softcover (can be re-sold) OR e-book (essentially 12-month rental code; can't be transferred between individuals—*i.e.*, can't sell it/give it away).
  - Used copies are fine; you **won't need access** to Mastering Genetics for F2019.
  - If you bought the e-text in 2018, let me know and I can likely get your e-text subscription extended.
    - If you buy the e-book instructions on access are [here](#) on Moodle.



### 2. Moodle Site:

Announcements, quizzes, grades, and other course information is communicated through the course Moodle site. Please check it daily. Technical issues with Moodle should be directed to LTS. From the [student computing site](#), there is a live support chat available between 8:30 and 4:30 Monday through Friday or you can submit a service request or email [askit@yorku.ca](mailto:askit@yorku.ca)

### 3. Learning Goals & Outcomes (LOs):

The LOs form the foundation of the course—they're what I expect you to be able to do by the end of the course. Tests, quizzes, in-class activities, etc., are all based on these so it's wise to refer to them repeatedly throughout the course. Some LOs you will be able to do simply by completing the pre-class readings & videos; others we will cover only in class. However, the majority of LOs will be covered through a combination of pre-class readings/video and in-class work. On Moodle you will find a list of weekly pre-class reading & videos with associated learning outcomes, as well as a comprehensive list of LOs for the entire course (these will be updated throughout the course).

### 4. Learning/Study Strategies:

I want every student to learn and do as well as possible in this course (and others)! As with learning anything else, academic learning involves motivation and practise and there are strategies that can help you study more effectively. Research in the field of cognitive science has revealed that many of the commonly used strategies (e.g., re-reading notes) are **NOT** effective study strategies; they take up time, but don't really result in comparable gains in learning. To help you avoid wasting your time and energy with inefficient studying habits, there is a whole section on study

strategies on Moodle. I'll revisit these in some classes, but you'll be asked to read about them and reflect on them in your first quiz.

**We've also learned a lot about in-class time and how that can be used to promote better learning** so that you aren't spending many hours just before the exam trying to binge study. This course has been set up to promote and practice active learning using evidence-based practices. This approach will help you self-assess your own knowledge; it will help you identify what you do and don't understand so that you can spend time (on your own, in office hours, with peers) focussing on the material you are struggling with. This ability to reflect and self-assess your understanding is referred to as "metacognition" (thinking about your thinking), and there's a lot of evidence to suggest that it is a key ingredient in learning and academic success. An example of a metacognitive approach is when you're asked to discuss your answer to a clicker question or worksheet with your peers—it helps you think more deeply about the concepts than just listening passively to a lecture so long as you contribute to the discussion and are honest about what you know. With in-class, online, and tutorial activities, you will be receiving a large amount of feedback on your understanding of the course material. Use this to direct your studying. If you don't understand something, it's best to try and figure it out sooner rather than later (i.e., don't leave it till just before the exam)—head to drop-in student hours, PASS, or peer tutoring to ask questions.

Remember, a key factor in learning and performing well is to take care of your health—both physical and mental!

#### 5. Me, your TAs, and Your Peers:

**My role as an instructor** is to provide you with multiple learning opportunities in an environment that challenges you, and to encourage you to ask questions, and engage in the scientific process such that you can succeed in mastering your learning goals and outcomes. I have several student hours per week in 104 LSB—please drop by! If you'd like to have a more personal conversation, please contact me at [biol2040@yorku.ca](mailto:biol2040@yorku.ca) to set up an appointment (try to give me a few days' notice).

We're all in this together and there's no ranking in this course, so that means that this class is collaborative, and not competitive. This class is based on a model of collaborative learning as we know that students can learn a lot from other students, in addition to help they get from their instructor. In class and tutorials, you'll have opportunities to ask your peers questions, explain your reasoning and get feedback. I've also set up a discussion board, and typically the PASS Leader runs a Facebook page. My hope is that you'll develop effective study strategies and a strong supportive learning community, and that together these will help you, not only in this class, but in others as well.

**Check out the tips for studying & information on the Activities, Quizzes, & Tutorials parts of your grade on Moodle.**

### Learning Goals & Outcomes

The big questions driving this course are:  
What is heredity?

How does what's in our DNA impact phenotype?

In this course, we'll explore and apply genetics concepts, looking at genetics through the lens of the scientific process. We'll work on integrating all of the basics you've gained from first year and building on those. A strong understanding of genetic fundamentals is necessary to understand diseases (including non-hereditary ones), breakthroughs in modern medicine, agriculture, and risks to species. Genetics as a discipline has large implications for health and economics, and there are also ethical issues that arise with many applications of genetics. **See the last page of the syllabus for a list of topics & a tentative schedule.**

Upon successful completion of this course, you should be able to:

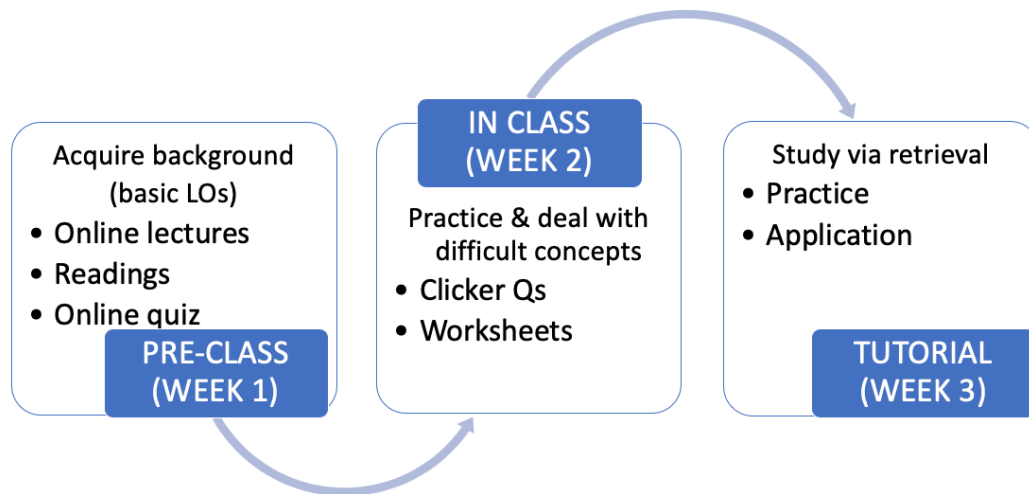
- Relate concepts from BIOL 1000 and 1001 to those in BIOL 2040. (*Review as necessary.*)
- Communicate information, arguments, and analyses, and defensible conclusions accurately and reliably (in verbal and written form) on your own and in small groups.
- Work effectively and collegially with your peers.
- Use genetic terminology in its correct scientific context.
- Interpret and analyse information provided in a figure; given data, construct a figure.
- Describe the molecular anatomy of genes and genomes (how DNA is organized), and how genetic information is duplicated.
- Describe how genetic information is expressed so it affects an organism's structure and function, and how gene activity can be altered in the absence of changes in DNA sequence.
- Compare different types of mutations, describe how each can affect genes and the corresponding mRNAs and proteins
- Describe factors that can influence the relationship between genotype and phenotype.
- Explain the molecular basis, at the protein level, for different genetic outcomes of alleles of the same gene.

- Describe the mechanisms by which an organism’s genome is passed on to the next generation.
- Deduce information about patterns of inheritance, genes, alleles, gene functions, and probabilities from analyses of genetic crosses and pedigrees (family histories).
- Describe the phenomenon of linkage and how it affects assortment of alleles during meiosis.
- Justify the value of studying genetics in organisms other than humans.
- Interpret results from molecular genetic analyses in humans and model organisms.
- Describe experimental methods commonly used to analyse genetic variation, including gene structure, expression, function, and location; interpret results from these methods.
- Describe the processes that can affect the frequency of phenotypes (and genotypes) in a population over time.
- Evaluate the societal and ethical impacts of various genetic techniques, studies, and applications.

**Topic-specific learning outcomes are available on the Moodle Course Website.**

## Course Content

This course works on a **3-week learning cycle** for any given set of concepts. This approach is rooted in research that shows practicing retrieval of material and testing yourself frequently (*e.g.*, each week) leads to better learning than binge-studying immediately before tests. It may feel like more work than you’re used to in other courses, but it will help you establish good habits of practice and studying, and the pay-off should be less anxiety before a test!



**As in all courses, you are expected to spend time beyond the in-class/tutorial course hours in preparation, review, studying, etc., related to the course.**

## Experiential Education and E-Learning

**e-learning:** This class employs a “flipped” approach in that you do the basics of reading and watching videos outside of class, and in-class we practice, figure out where you are struggling via interactive technology and worksheets, and then work on developing an understanding of these challenging concepts.

**Experiential education:** This course offers hands-on skill development in teamwork. As well, we will look at a few case studies; throughout the course you are asked to reflect on your learning.

## Feedback

As I mentioned earlier, feedback is an important part of learning and improving and it’s not just for you—I’m also hoping to gain feedback from you!

Although I’ve taught this course several times, I’m always trying to improve it. While course evaluations are helpful, they are at the end of the course and don’t help me change anything during the course. Throughout the term, small activities will be undertaken to help me get a clearer idea of how you’re learning and also to get specific feedback on certain aspects of the class. Most of these activities should also help you in your own learning (by exploring course concepts and engaging in metacognition)\* and activity points will be awarded for contributing. Receiving feedback in an effective way is a skill that we’ll all be working on (including me!)—to use feedback we need to work on keeping an open mind and not be defensive in the face of constructive suggestions/feedback, which can be challenging – it’s a work in progress!

\*Responses from clicker questions and worksheets, and questions in class and office hours let me know where you know the material pretty thoroughly and where you are struggling. This helps me to figure out where I need to provide more support (*e.g.*, an online video explaining a concept).

## Course Policies

This part might seem boring, but it's important you read it ahead of time so that you are familiar with policies now rather than after the fact.

### 1. E-MAIL ETIQUETTE:

- Email [biol2040@yorku.ca](mailto:biol2040@yorku.ca) (NOT the Moodle email function).
- I'll try to respond within 2 business days, but this isn't always possible. I typically don't check email between 7 pm & 7 am, nor on the weekends.
- **Subject line:** your name, student number & a brief indication of topic (e.g., 'Question regarding gene regulation).
- Remember, you are in a **professional environment**, & thus all your correspondence, including emails, should be professionally conducted.
- Before emailing me, **consider the nature of your question & whether another resource should be consulted first.** For example, tutorial-related queries should be directed to the TA Coordinator. **Don't be surprised if you don't receive a response to a question that could be easily answered by looking at the Course Outline or the Moodle site.**
- If you have a question that is long & convoluted, please attend drop-in hours. Many questions can't be answered adequately via email. I also encourage you to make use of the discussion board.

### 2. ACCOMMODATIONS:

- **Submit a scan or photo of CDS Accommodation letters via the [Biology Department's Online Document Submission System](#) by Sept. 19, 2019.**
- Please make me (& TA Coordinator if tutorials are affected) aware of any **religious observance conflicts** occurring at any point during the term, for which accommodations will be required (no accommodations will be made for clicker questions; please see below), **by emailing [biol2040@yorku.ca](mailto:biol2040@yorku.ca) by Sept. 13, 2019.**
- **If you are writing with Alt Exams:** because we're using 2-stage tests, this means you'll need to be back in our classroom in time for the group part of the exam. Typically, the individual part is 40-45 mins long, so you should schedule with Alt Exams accordingly.
- If you feel that there are extenuating circumstances that may interfere with your ability to successfully complete the course requirements, please discuss the matter with me as soon as possible.
- "Senate policy states that students are expected to monitor their progress in courses, taking into account their personal & academic circumstances, & to make the necessary adjustments to their workload to meet the requirements & deadlines." (from Senate Policy of Students' Responsibilities in the Petition/Appeal Processes). **The drop deadline is Nov. 8, 2019.**
- Students with who require reasonable accommodations in resources or evaluation methods are encouraged to consult with the [Student Accessibility Services](#) & ensure that requests for appropriate accommodations are arranged with the me early in the term.

### 3. MISSED MIDTERMS/FINAL:

- There are **no** makeup midterms; if you miss a midterm (you're absent on that day), the weighting will automatically be transferred to the Final Exam, which is cumulative.
- **If you miss the FINAL EXAM** you must [petition](#) your home faculty for [deferred standing](#). It is the Petition Committee's decision whether deferred standing is granted; if it is, the committee will set the deadline for writing the deferred exam. Denied petitions will result in a zero on the final exam.
  - The format of the make-up final exam can differ from the original final exam format.

### 4. ACTIVITIES: in-class activities & online:

- You must register for iClicker (REEF) to receive marks for the clicker questions; bring a web-enabled device to each class and **please make sure it's charged before class** as there are limited outlets in our lecture hall.
- **You must use your own iClicker account. Use of an account not registered to you is considered a breach of Academic Honesty & will be reported to the Associate Dean, Faculty of Science.**
- Clicker questions, worksheet, & discussion marks are gained on the basis of participation. Because the nature of this clicker/worksheet/etc. marking scheme considers missed classes and technical glitches (by dropping the lowest 20%), doctor's notes, etc., will **NOT** be accepted for missed classes.
- Clicker questions are worth 5 points per day (you must complete 75% of the questions to get the day's full 5 points). Worksheets are worth 5 points each. **Take a deep breath; missing one class is unlikely to affect your grade.**

### 5. PRE-CLASS PREPARATION QUIZZES:

- Quizzes occur weekly & mostly deal with pre-class video lectures/text readings to prepare you for the upcoming week of classes, however, some review questions may be included.
- With the exception of a participation point in each quiz (you must complete the appropriate question to gain this point), marks are awarded for quizzes on the basis of a correct answer. Because of the marking scheme, you need only earn 80% of the total number of quiz points to earn the full quiz component; thus, documentation, etc., will not be considered. **Missing one quiz is unlikely to have a large impact on your grade.** Students encountering longer-term medical issues (e.g., in hospital for greater than a few days) should contact me as soon as possible.
- Having issues with a quiz (e.g., can't see questions)? Please check your browser settings.

#### 6. EXAM MARKS & REVIEWING EXAMS:

- Exams in this class are the two-stage format (more information in the first class), & marking typically takes ~2 weeks. Marks will be posted in Moodle. Exam marks are not negotiable.
- Exams will not be returned to you, but you will have **opportunities to review your exams**. These dates will be posted on Moodle. **If you think there is an error in your exam mark calculation, or have a concern about marking of a short-answer question, please see #7.**

#### 7. REGRADING/MARK CALCULATION ERRORS:

- If you think a written answer on a test was marked incorrectly you must submit a written rationale (based on academic merit\*) to 102 LSB (Undergraduate Biology Office) with 2 days of viewing your exam. **NOTE: re-marking can result in the mark being raised, confirmed, or lowered.**
- To be fair and consistent with regards to the entire class, **individual grades are NOT negotiable**. There are no 'extra credit' assignments. **Marks for tests and the course grades are not 'rounded' or 'bell-curved'.**
- Contact me ([biol2040@yorku.ca](mailto:biol2040@yorku.ca)) about marks **ONLY if there is a clear error in your mark (calculation, clerical, etc.) within ONE (1) week of the test score being made available to you**. It is highly unlikely that you will receive a response regarding any other mark-related queries.

*\*Academic grounds means you make an academic argument for why your answer is correct – statements such as “this grade does not reflect my knowledge” or “I really studied hard & I deserve a better grade” or “the answer is what it says in the key” are not academic grounds. You must explain where you think you earned the points.*

#### 8. FORUM CODE OF CONDUCT:

- You're encouraged to participate in the online Moodle Forums to discuss course concepts, organize study groups, & ask questions relating to Genetics. You are expected to follow these guidelines while using the Moodle forums:
  - i. Before posting a question, **read other threads** to see if your question has already been answered. (You can search the forums—you don't have to read each post!). If your question hasn't already been asked, please post in the most appropriate forum. Posts put in the inappropriate forum will be deleted.
  - ii. **Use a clear, informative subject line.** Try to be as specific as possible.
  - iii. Post comments appropriate to the particular discussion. Post only material relevant to BIOL 2040; **off-topic posts may be moved or deleted**;
  - iv. **Be respectful:** I've provided this space for you to discuss course material with your classmates. Posts containing personal insults/attacks/intimidation/inappropriate language/profanity will be removed. **(It is worth remembering that your instructor & TAs read forum posts!)**. Please follow the [York University Student Code of Rights & Responsibilities](#).
  - v. While it is appropriate to engage in debate/discourse on biological topics, such discussions should be respectful & evidence-based. Evidence should be from trusted sources—consult with the library or your instructor if you are not sure. See: <http://www.yorku.ca/webclass/module4a.html>
  - vi. Any posts that appear to violate our code of conduct may be edited, moved to a hidden forum, or deleted at the discretion of instructors/moderators. If posts give indications of violations of academic honesty or the York University Student Code, further action will be taken. If you notice any inappropriate threads please contact [Dr. Kelly](#).

*Disclaimer: While Moodle moderators/instructors will attempt to remove/edit objectionable/inappropriate material as quickly as possible, it is not always possible to review every post in a timely manner. All posts made on the forums express the views & opinions of the post's author & not the moderators/instructors (except for posts by these people) & they cannot be held liable.*

#### 9. ACADEMIC INTEGRITY:

- You should be familiar with, & follow [York University's policies regarding academic integrity](#). See: <https://spark.library.yorku.ca/academic-integrity-what-is-academic-integrity/>

## 10. RECORDING LECTURES:

- Photographs or video recordings of any portions of the lectures (including the slides) are **PROHIBITED**. Images & material presented are subject to Canadian copyright law.
- I record lectures for you—these recordings are allowed **ONLY** as a personal study aid, & are **NOT** allowed to be sold, passed on to others, or posted online. **Lectures (and all other course materials) are the intellectual property of the professor & cannot be distributed without permission.**

## University Policies

### Academic Honesty and Integrity

York students are required to maintain the highest standards of academic honesty and they are subject to the [Senate Policy on Academic Honesty](#). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards. There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the [Academic Integrity website](#).

**Important** A note from the Faculty of Science Committee on Examinations and Academic Standards:

Numerous students in Faculty of Science courses have been charged with academic misconduct when materials they uploaded to third party repository sites (*e.g.*, Course Hero, One Class, etc.) were taken and used by unknown students in later offerings of the course. The Faculty's Committee on Examinations and Academic Standards (CEAS) found in these cases that the burden of proof in a charge of aiding and abetting had been met, since the uploading students had been found in all cases to be willfully blind to the reasonable likelihood of supporting plagiarism in this manner. Accordingly, to avoid this risk, students are urged not to upload their work to these sites. Whenever a student submits work obtained through Course Hero or One Class, the submitting student will be charged with plagiarism and the **uploading student will be charged with aiding and abetting**.

Note also that **exams, tests, and other assignments are the copyrighted works of the professor assigning them, whether copyright is overtly claimed or not (i.e. whether the © is used or not)**. Scanning these documents constitutes copying, which is a breach of Canadian copyright law, and the breach is aggravated when scans are shared or uploaded to third party repository sites.

### Access/Disability

York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.

Students in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

**Additional information is available at the following websites:**

- [Student Counselling and Development](#)
- [Counselling \(Glendon\)](#)
- [York Accessibility Hub](#)

### Ethics Review Process

York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants*. In particular, students proposing to undertake research involving human participants (*e.g.*, interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an *Application for Ethical Approval of Research Involving Human Participants* at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

### Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of

class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an [Examination Accommodation Form](#), which can be obtained from Student Client Services, Student Services Centre.

### Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. Click [here for the policy and procedures governing disruptive and/or harassing behaviour by students in academic situations](#).

## TENTATIVE COURSE TOPIC SCHEDULE

This schedule is tentative and subject to change:

Week:	Pre-Class Quiz (material for following week)	Class	Topic (subject to change)	Tutorial # & Topic (material from preceding week)
1	Quiz 1A – Course Outline & Study strategies Quiz 1B – Anatomy of Genes & Genomes	Sept. 5	Intro; Study Strategies	<b>NO TUTORIAL</b>
2	Quiz 2 – Transcription & gene expression	Sept. 10	Anatomy of genes & genomes	<b>Tutorial 1</b> – review of basic genetics from BIOL 1000/1001
		Sept. 12	Anatomy of genes & genomes	
3	Quiz 3 – Chromatin remodelling	Sept. 17	Gene expression	<b>Tutorial 2</b> – anatomy of genes & genomes
		Sept. 19	Gene expression	
4	Quiz 4 – Genetic & phenotypic variation	Sept. 24	Gene expression	<b>Tutorial 3</b> – gene expression
		Sept. 26	Gene expression/mutation	
5	Quiz 5 - Inheritance	Oct. 1	Mutation	<b>Tutorial 4</b> – gene expression
		Oct. 3	Mutation	
6	Quiz 6 – Inheritance II	Oct. 8	<b>MIDTERM 1 – inclusive of Oct. 3</b>	<b>NO TUTORIAL</b> ; Post-Midterm 1 reflection assignment (online)
		Oct. 10	Inheritance	
		Oct. 15	<b>READING WEEK</b>	<b>NO TUTORIAL</b>
		Oct. 17	<b>READING WEEK</b>	
7	Quiz 7 – Pedigrees & probabilities	Oct. 22	Inheritance	<b>Tutorial 5</b> – inheritance (may cover some of material from pre-midterm 1)
		Oct. 24	Inheritance	
8	Quiz 7 – Pedigrees & probabilities	Oct. 29	Deducing probabilities	<b>Tutorial 6</b> – inheritance, probabilities
		Oct. 31	Deducing probabilities	
9	Quiz 8 – Gene interaction	Nov. 5	Applying probabilities to pedigrees	<b>Tutorial 7</b> – probabilities
		Nov. 7	Applying probabilities to pedigrees	
10	Quiz 9 – Linkage & gene mapping	Nov. 12	<b>MIDTERM 2 - inclusive of Nov. 7</b>	<b>NO TUTORIAL</b> ; Post-Midterm 2 reflection assignment (online)
		Nov. 14	Gene Interaction	
11	<b>NO QUIZ</b>	Nov. 19	Gene Interaction	<b>Tutorial 8</b> – gene interaction (may cover some material pre-midterm 2)
		Nov. 21	Gene Interaction/Linkage	
12	<b>NO QUIZ</b>	Nov. 26	Linkage & molecular analyses	<b>Tutorial 9</b> – gene interaction/linkage
		Nov. 28	Linkage & molecular analyses	
13		Dec. 3	Linkage & molecular analyses	<b>NO TUTORIAL</b>