Department of Biology Course Outline

WINTER 2025 BIOL 4005 3.0 The Scientific Method: Applications and Controversies

Course Instructors: We're co-teaching!

Dr. Carol Bucking [hear my name]
Dr. Tamara Kelly [hear my name]

How to address us & personal pronouns:

Dr. Bucking (she/her/hers)
Dr. Kelly (she/her/hers)

Email: biol4005@yorku.ca

Have a question or would like to talk with us? Scheduled 'student hours don't have as much uptake in 4th year courses, thus we find it's better if you request appointments (via email) as needed or ask us questions during/after class. We look forward to hearing from you!

Prerequisites: must be in fourth year (≥ 60 credits) of a Biology program.

Office Location: Please use email to contact us.

Class Location: CLH 110 (click for map)

Class Time: Wed. 8:30 – 11:30 am (thus, each class = 3 classes)

Library Study Spaces on Campus:
Book a study space at the library

Course Format: BIOL 4005 is an in-person interactive course. Each class will have activities (mainly groupwork), so attendance is strongly encouraged. We understand you might not be able to make it to every class and have accounted for this in the course assessment.

Classes (or portions thereof) will be recorded, but it depends on what we're doing in class that day.

Important Dates

Drop Deadline: March 14, 2025 (*last day to drop without course on transcript*)
Course Withdrawal Deadline: April 4, 2025 (*course still appears on transcript with 'W'*)

- York University's Undergraduate Fall/Winter 2024-2025 Important Dates website

Where to find stuff in this course outline!

Land Acknowledgement

As members of the York University community, we acknowledge our presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, and the Huron-Wendat, and the current treaty holders, the Mississaugas of the Credit First Nation. This territory is subject of the Dish with One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region. A land acknowledgement is just one step in the

reconciliation process. As settlers on this land, and as biologists, we have a responsibility to respect and care for this land and its resources. At Native Land, find out more about the traditional homelands that you occupy.

We must acknowledge the lands that support all aspects of our learning. *eClass* is powered by Moodle, headquartered in West Perth, Australia. The Whadjuk people of the Noongar nation are the traditional custodians of this area for more than 45 000 years. *Perusall* is in Austin, Texas, part of the land that is collaboratively caretaken by several Indigenous groups, including the Alabama-Coushatta, Caddo, Carrizo/Comecrudo, Coahuiltecan, Comanche, Kikapoo, Lipan Apache, Tonkawa, and Ysleta Del Sur Pueblo. *Microsoft* is in the occupied land of the coastal Salish people, who have resided there since time immemorial. *Panopto* has headquarters on the unceded land of the Duwamish people of the Coast Salish.

Welcome to BIOL 4005!

What are the consequences if scientists don't act with integrity in their research? This course examines the principles of integrity required at each step of the scientific method and research, as well as our responsibilities as scientists to society and the public. We build on personal experiences/knowledge of integrity to explore issues such as plagiarism and fraudulent data in scientific works and the impact of such transgressions. We'll also investigate ethical dilemmas that may arise in professions that many of you might be considering.

While this class includes lecture material, it focuses primarily on analysis of case studies and include discussions of experimental design and preparing papers for journal submission. We'll look at case studies of clear-cut cases, along with more ambiguous situations, and work towards identifying the issues, why an action was unethical or lacking integrity, and ways this could have been avoided or corrected. In sum, we aim to provide you with the knowledge and skills to act ethically and responsibly as a scientist.

In examining these you'll **develop transferable skills, such as critical thinking, writing, and presenting that will help you in whatever future schooling/career you pursue.** And we think it goes without saying—but we'll put a small reminder here—that **a course about integrity requires that we all act with integrity**, in our teaching and in completion of assignments.

Course Calendar Description: This course explores issues of integrity as associated with the scientific method and research, including our responsibilities as scientists within a framework of integrity and veracity. The importance of ethical conduct, particularly with respect to writing, data collection, presentation of results, and attribution will be discussed as well as the implications of violations (*e.g.,* plagiarism, results tampering). Lectures will provide background information and in-class case studies will be used for examples and in-depth exploration via problem-based learning.

Course level learning objectives: Upon successful completion of this course, you should be able to:

Course Content	Skills
1. Demonstrate knowledge of principles of integrity and ethical practice involved in the scientific method and research. 2. Critically evaluate case studies of ethical issues. 3. Propose potential ways to avoid/correct violations of ethical scientific conduct.	1. Form cogent arguments about issues of integrity as related to practicing science, demonstrating critical thinking and problem-solving. 2. Present arguments and evidence both orally and in writing to various levels and audiences. 3. Communicate and work effectively, responsibly, and collegially with your peers.

4. Apply a framework of integrity in science to personal experiences, as well as in a broader, societal context.
5. Demonstrate comprehension of how experimental design, execution, and analysis influences results and interpretations of data.
4. Synthesize and summarize key points from literature or case studies to provide relevant information and support for an argument, etc.
5. Create new knowledge with academic integrity, acknowledging clearly which ideas are not your own.

Equity, Diversity, and Inclusion in BIOL 4005:

We want the course to challenge you, but we also are committed to providing and **fostering an inclusive, equitable environment that supports your learning, growth, and success** and allows for diverse viewpoints. In that spirit, we designed this course with a **commitment to the principles of Universal Design for Learning and evidence-based teaching practices**. As instructors who are guided by evidence, we believe that everyone in this course can succeed! This class is a community, and we are here to learn, support, and succeed together.

Although we don't delve into a lot of history in this course, **we must acknowledge that the context and application of science is subjective, influenced by cultural context, and has often been exclusionary in whose voices were allowed and amplified**. This means that there can often be biases in our materials, which we are working to reduce and ultimately eliminate. Our hope is to continue improving this course, integrating diverse scientists and experiences. Please let us know via biol4005@yorku.ca or our surveys/anonymous feedback if you have any suggestions to improve the course in terms of equity, diversity, and inclusion.

To help us create an environment where each one of us, and our identities, are respected we'll have a survey where you can let us know if you have a name that differs from the York official records, your pronouns, and anything that you think might impact your ability to succeed in this course. Equity is not something that happens overnight, and we're still learning. We will make mistakes, and hopefully correct ourselves. **In the interest of improving, please talk to us (anonymous feedback on eClass is also an option) if anything was said in class (by anyone, including us) that made you feel uncomfortable.**

York U students come from far and wide and represent a diversity of cultures and backgrounds. To support students whose primary language is not English, services are available at York including individual appointments, and group events, such as ESL Café.

Community Guidelines

The following values are fundamental to academic integrity and are adapted from the International Center for Academic Integrity*. In our course, we will seek to behave with these values in mind:

	As students, we will...	As a teaching team, we will...
Honesty and Integrity (remember this is a course about integrity)	• Honestly demonstrate our knowledge & abilities on course work. • Communicate openly without using deception, including citing appropriate sources.	• Provide honest feedback on your course work. • Communicate openly & honestly about course expectations & standards via the syllabus, instructions, & rubrics.
Responsibility	• Complete pre-class preparation work & assignments on time. • Show up to class on time & try to be present as possible. • Participate fully & contribute to team learning & activities.	• Provide timely feedback on your course work. • Show up to class on time & be mentally/ physically present. • Create relevant assessments & class activities.

	As students, we will…	As a teaching team, we will…
Respect	• Speak openly with one another, while respecting diverse perspectives. • Provide sufficient space for others to voice their ideas.	• Respect your perspectives even as we challenge you to think more deeply & critically. • Facilitate respectful exchange of ideas.
Fairness	• Contribute fully & equally to collaborative work (i.e., no freeloading). • Not seek unfair advantage over other students in the course.	• Create fair assignments & assessments & provide feedback in a fair & timely manner. • Treat all students equitably.
Trust	• Stay on topic during class. • Be open & transparent about what we are doing in class. • Not distribute course materials to others without authorization.	• Be available to you when we say we are. • Follow through on our promises. • Not modify course expectations or standards without communicating with everyone in the course.
Courage	• Say/do something when we see actions that undermine any above values**.** • Accept a lower or failing grade or other consequences of upholding & protecting the above values.	• Say/do something when we see actions that undermine any above values. • Accept the consequences (*e.g.,* lower teaching evaluations) of upholding & protecting the above values.

[2] This class statement of values is adapted from Tricia Bertram Gallant, Ph.D.

Contacting Us

Please use **biol4005@yorku.ca** to contact us, **not** the eClass message system, nor our personal email addresses. **This allows us to address your email in a timely fashion.** In your emails, please:

- **Use your yorku.ca email address** (emails from other addresses are often sent to spam).
- Put a **relevant description** in the email **subject line** (e.g., "*Debate presentation*")
  - If your email is urgent, please indicate this in the subject line & send with high priority.
- **Include your name, and student number** at the end of your email.
- **Consider booking an appointment**, rather than sending a long email if you have a concern/question that will take a considerable amount of time to read or answer.
- **Allow 2 business days for a response.** To use our professional and personal time more effectively, we typically don't check email 7 pm and 7 am, nor on the weekends.

Learning Materials

~~**Textbook:**~~ There is **NO** textbook for this course! We'll use journal articles, media articles, websites, prepared cases, and some lectures to examine scientific integrity. Individual and team assignments will require additional research beyond that provided in class. All resources available from York or are open access.

eClass site (click to access) here you'll find announcements, course materials, resources, discussion forums, etc. Check your email account associated with eClass regularly (>3x/week) for course announcements.

Technology Checklist:

Internet-enabled device	Access to reliable internet for eClass	Zoom/ similar for team meetings	Webcam for team meetings	Microphone for team meetings

Assessment in this Course

What will I be doing in this class?

A lot of different things. **Most of this course involves learning from the scientific integrity cases, scientific literature, and discussions with your peers**; there is a limited component of this course that is a traditional lecture-based approach. Class time focuses on discussion and individual and group activities. This course will help you to develop your skills in thinking critically, writing, collaborating, and presenting; skills that are useful no matter what your career. Classes, or portions thereof, will be recorded *depending on what we're doing that day*, however, you'll gain more from the course by participating in the in-class activities.

Since there's no textbook, are there assigned readings?

Yes! To help keep you on track, during the first five weeks you are asked to watch short lectures, do some reading, and/or annotate assigned readings in *Perusall* before coming to class. For assignments, you'll need to do further research than the material provided by us. If you are struggling with an idea talk to your peers (in class, on eClass, etc.), find and read additional references, and/or come see us. Please draw our attention to concepts you find confusing—it's likely other students have the same questions! The course is work-intensive, but we hope you find yourself well supported and your experiences valuable!

Can I be a tourist, just listen, and not participate?

Participation is key in this course, and you won't succeed if you aren't willing to participate and collaborate. Every one of you has valuable input and perspectives to contribute. There are marks given for participation (as part of the engagement activities) to encourage you to stretch your mind and discuss material in and out of class. The rules for earning engagement points are simple: participation should be relevant/on-topic; you must participate to earn these marks, and a good faith effort must be shown. Please be respectful of your peers' thoughts and opinions; you can disagree, just do so politely.

There's some teamwork in this course. Do I have to work as a part of a team?

Most careers involve some work as part of a team (and you usually won't get to choose who you work with on those teams), thus it's incredibly valuable to gain experience and skills that help you work well in teams. This is also something you could potentially discuss in a job or professional school interview. In this course, resources and time in class will be provided to help you and your team to be successful, including developing communication strategies, and planning effectively.

What topics will we cover in this course?

We're going to examine integrity at all stages of the scientific process. Please refer to the calendar at the end of this syllabus, and to the course eClass website for more detail on the course schedule.

Reducing unintentional bias

For most assignments, you'll submit your work to Crowdmark or eClass or similar. When possible, we try to reduce unintentional bias in grading by grading anonymously. **When we ask you <u>not</u> to put your name on your assignment (particularly for Crowdmark), please follow this request.**

Can I hand in an assignment late?

Yes and No. Since life can suck rocks sometimes, we are offering flexibility in deadlines for *some* course assignments in the form of three (3) grace days and allow for self-accommodation. These grace days can be added to **an applicable assignment deadline** (see below in the course breakdown sections) and you do not have to request to use them. **Course assignments that don't have grace days are time sensitive, and we have tried to allow for enough time within the schedule.** More information is available in the Course Breakdown section. **Late assignments (past the grace days or final deadlines) are not accepted.**

Course Breakdown

COMPONENT	WEIGHTING & INFORMATION
1 ENGAGEMENT (typically in class)	9%
2 REFLECTIVE RESPONSES (in class)	6% (best 3 of 4)
3 PREDICAMENT ASSIGNMENT#	10% (multiple elements)
4 CASE STUDY	25% (multiple assignments and elements)
5 DEBATE#	20% (multiple elements)
6 REFLECTION	10% (initial, surveys, final)
7 FINAL EXAM*	20% (last class)

Late policy & missed assignments: We understand that we all have a lot to balance, and we want to reduce the worry that comes with deadlines and things that can impact them, so we've built in some buffers such as grace days (below). Course elements that don't have grace days are time sensitive (e.g., you must prepare for a class, peer to review), and we've aimed to allow enough time within the schedule for you to complete these. Missed assignments (i.e., missed deadlines as no late assignments are accepted; #3-6) other than Engagement and Reflective Responses will be reweighted to the final exam. ***To write the final exam, you must complete at least 25% of the course assessments #3 to #6.** If you miss the final exam, the makeup will be an oral exam.

- **Grace days:** Many, but not all, assignments have grace days. These are 3 calendar days that can be added to an applicable assignment deadline (see course components below). Technically, an assignment submitted within the grace days period is late, but there is no penalty deducted. For assignments with grace days available you **don't** have to request to use them. If an assignment with grace days is due 11:59 pm, Friday, you would have until 11:59 pm the following Monday to submit it without penalty.
  - We expect you to start your assignments ***before*** the grace days begin. **Submissions will not be accepted after the end of the grace days.**
- **Best x/y:** For Engagement and Reflective Responses, we drop a set proportion of the assignments. This means that if you miss one, it shouldn't impact your mark.
- **Religious accommodation:** **Within the first 3 weeks of term, please let us know of any religious conflicts** as this helps us better accommodate you. See 'University Policies' for more information. There are a few days where your participation is crucial so that you and your peers get the full benefit of the exercise, and every effort has been made to schedule these interactions outside of religious observances.

References/citations are expected for all assignments. If it's not your original idea, you must cite it.

Intellectual property and ownership: The expectation is that the work submitted is your original thoughts. You are fully responsible for **any** work you submit. If you use any tools to prepare this work, you're responsible for ensuring that it is correct. You cannot receive a grade for work that is shown not to be your own (e.g., plagiarism); a zero (0) will be assigned. The material used in this course is not yours to be posted elsewhere.

Turnitin: You must submit electronic copies of **any** written work (*e.g.,* article critique) first to Turnitin and then to Crowdmark or eClass. This is to ensure that your hard work, having been added to the database, can't be plagiarized in the future by students at any university.

Teamwork: Teams will be assigned by us, and some class time will be provided to work on your project, although additional time out of class will also be needed. To facilitate effective team behaviour and

communication, you'll create/develop a ***team charter*** with your partners, which all of you will need to sign. You're expected to adhere to the team charter and contribute substantively and equitably to any collaborative projects. **NOTE:** Up to 2/3 of the team assignments (Predicament and Debate – together worth 30% of your course grade) can be deducted for an individual's lack of teamwork and collaboration. That is, an A/A+ within the course represents not only knowledge of course material, but a willingness to participate in teamwork. **#Your post-debate Team evaluations MUST be completed to earn marks for the team projects (Predicament & Debate) toward your final course grade.**

1 Engagement (9%, best 90%) (Individual & Team)

This class relies on participation. Some engagement points will be earned during class time (typically through group activities), while others will be earned for preparing for class during weeks 1 to 5 (watching pre-recorded lectures, Perusall annotations, etc.) Perusall is a collaborative annotation tool that helps you in your reading and analyses of the primary literature and case studies. Preparation for each class will be worth ~10-15 points, as will each class's engagement activities. Perusall will be graded for providing thoughtful annotations, whereas most other engagement points will be awarded for good faith effort/completion. **You need only 90% of the total engagement points to earn the full Engagement marks towards your grade**

Because the marking scheme has flexibility for missed classes and technical glitches, **additional exemptions/extensions (including grace days and doctor's notes) cannot be granted or accepted, as participation is a crucial component of this course.** If you earn less than 90% of the total engagement points, your mark out of 10 will be adjusted accordingly.

E.g., if you earn 80% of the total engagement points, your mark will be (80/90)*10 = 8.89/10.

ENGAGEMENT (9%)	WEIGHT OF FINAL GRADE	DUE	3 GRACE DAYS ALLOWED?
Pre-class preparation (Perusall papers and watching videos)	3.5% (best 90%)	Mostly weeks 1 – 5, but throughout course	NO
In-class activities	3.5% (best 90%)	Mostly weeks 1 – 5, but throughout course	NO
Team Charter	2%	Fri. Jan. 31, 11:59 pm	YES

2 Responses (6%, best 3 of 4) (Individual)

During each class you'll be provided with at least one scenario that you'll be asked to analyse as a case, identifying if there was a breach, why the actions lacked integrity, what your next steps would be if you were dealing with such as case. The task here is to think through the case, address each of the posted questions, and provide your reasoning, not to be "correct". Responses will be due during the time provided in class and are to be **completed in-person during class**. Best 3 of 4 reflective responses will comprise your grade for this component; missed responses will be grade of "0".

REFLECTIVE RESPONSES (6%)	WEIGHT OF FINAL GRADE	DUE	3 GRACE DAYS ALLOWED?
Respond to a case presented in class	6%	Weeks 2, 3, 4, 5 – in class	NO

3 Predicament Assignment (10%) (Team)

For this assignment you'll be provided with a type of scientific misconduct. Your team will then create a scenario like the ones we have in class, complete with questions (and a marking key!) for your peers to answer. During the in-class "Predicament Peer Work" assigned peers will answer your questions (via online worksheets you'll create), which your team will mark according to your key.

If either of the classes for this assignment are missed, weighting will be transferred to the final exam.

PREDICAMENT ASSIGNMENT (10%)	WEIGHT OF FINAL GRADE	DUE	3 GRACE DAYS ALLOWED?
Scenario & question/answer key creation (graded by Drs. Bucking & Kelly)	7%	Wed. Feb. 26, in class	NO
Peer review of completed questions	3%	Wed. Mar. 5, in class	NO

4 Case Study (25%) (Individual)

Critical analysis and oral/written communication are essential skills when it comes to discussing scientific integrity. In this course, you'll have an opportunity to practice these skills using a case study analysis. In the case study, we'll assign you a case and provide you with one or more resources from which to start. Considering these resources **and others you find**, you'll present your analysis in two formats: as a 3–5-minute video and in writing, allowing you to develop different types of communication skills. Citations and references are expected whenever you present something that is not your original idea. To earn a B or above, you are expected to go beyond the papers provided. You'll evaluate and grade three peers' videos and in Week 6 contribute to an in-class discussion with peers who worked on different cases as you did. During class you'll then reflect on any changes in your opinion/analysis and update your analysis accordingly.

CASE STUDY COMPONENT (25%)	WEIGHT OF FINAL GRADE	DUE	3 GRACE DAYS ALLOWED?
Video analysis (peer graded)	5%	Thurs. Jan. 30, 11:59 pm	YES
Written analysis	7%	Thurs. Feb. 6, 11:59 pm	YES
Peer Review of peers' videos	5%	Fri. Feb. 7, 11:59 pm	YES
Modification to written analysis & Reflection	8%	Wed. Feb. 12, in-class	NO

5 Debate (20%) (Team)

The primary goal of the debate is to critically examine each step of the scientific method and explore the various ways in which these steps can be compromised. Through a structured debate, in teams of 5 members, you will engage with ethical dilemmas based on the steps of the scientific method, recognize potential perversions, and propose solutions to uphold integrity in scientific research. References to cases discussed in class are required, as are additional new cases beyond what has been presented in class. Teams will be assigned a specific topic related to a step in the scientific method, after which the team will work to prepare their arguments, conduct research and develop supporting materials. Your team will present your critical analysis in two formats: an in-class debate with another team and a written analysis. Through the debate you will demonstrate a deeper understanding of the consequences of unethical practices and measures to prevent such corruptions.

COMPONENT OF DEBATE (20%)	WEIGHT OF FINAL GRADE	DUE	3 GRACE DAYS ALLOWED?
Written analysis	5%	Wed. Mar. 12, 11:59 PM	YES
In class presentation	15%	Wed. Mar. 19 & Wed. Mar. 26	NO

6 Reflection (10%) (Individual)

Reflection is a form of personal response to experiences and helps us to process new information and changing mindsets, as well as develop self-awareness and metacognition (*i.e.,* thinking about your thinking). Much of what we'll discuss in this course has been touched on only superficially in other science courses and thus it won't be surprising if you find your opinions shifting over the course of the term. That's what this assignment is about, documenting and exploring those changes. What changes in mindset and opinion have you experienced? Why? We have designed some surveys to help challenge/examine your opinions as well. You should include examples along with your reasoning. It is important to remember that opinions are not "correct" or "incorrect". We work within our experiences to find out more about the world in an evidenced based way.

COMPONENT OF REFLECTION	WEIGHT OF FINAL GRADE	DUE	3 GRACE DAYS ALLOWED?
Initial reflection	1%	Fri. Jan. 17, 11:59 pm	YES
Surveys (x4)	2% (0.5% each)	Weeks 1-4	NO
Final reflection	7%	Fri. Apr. 4, 11:59 pm	YES

7 Final Exam (20%) (Individual)

The final exam is in-person during our last class and is **designed to take 85 minutes,** but you will have the full class time (170 minutes) to complete it. In general, the format will be the following: you will be given a few (~1 to 3) new cases that you will then analyse in the same manner that we have analysed cases throughout the term and be asked to relate them to cases studied across the term (i.e., similarities/differences). **To write the final exam, you must complete at least 25% of the course assessments #3 to #6.** If you miss the final exam, the makeup will be an oral exam.

COMPONENT OF EXAM	WEIGHT OF FINAL GRADE	DUE	3 GRACE DAYS ALLOWED?
Final exam **(IN-CLASS)**	20%	Wed. Apr. 2	NO

Regrading/Reappraisal Procedures

Both instructors will provide feedback on work, and where grades differ, the average of the two grades will be awarded for any work. **Reappraisal requests should be submitted to biol4005@yorku.ca within 5 business days of the work being returned or feedback being made available.** The request must include a half-page written rationale providing academically valid reasons for the reappraisal requests and should refer directly to the assignment overview and rubric. Note: **reappraisal can result in the mark being raised, lowered, or**

staying the same. Reappraisal grades are considered final. We will strive to review all reappraisals within 2 weeks.

Please note that to be fair and consistent, **grades are not negotiable**. We have designed this course to have no one element heavily weighted and there is considerable flexibility and buffer built into the course. Grades will not be "curved". There are no alternative assignments that can be completed as 'extra credit'.

University Policies and Other Useful Information

Grading Scheme

In accordance with the York University Undergraduate Calendar Regulations, the letter grades assigned in undergraduate courses at York conform to the descriptions and grade ranges shown here: York University grade descriptions and ranges.

Honesty and Integrity

Academic misconduct undermines the values of honesty, trust, respect, fairness, and responsibility that we expect in this class. York University provides supports such as academic integrity workshops to ensure, as far as possible, that you understand the norms and standards of academic integrity that we expect you to uphold.

You are required to maintain the highest standards of academic honesty and are subject to the Senate Policy on Academic Conduct and Procedures. The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of you, as the student to abide by such standards. Please review and familiarize yourself with the policy.

There is also a York University academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve your research and writing skills, and cope with University life. You are expected to review the materials on the Academic Integrity website:

Examples of actions that do not adhere to York's Academic Integrity Policy include:

- Plagiarism (passing off someone else's work as your own)
- Accessing unauthorized sites for assignments or tests
- Unauthorized collaboration on assignment and exams
- Uploading work to third party repository sites (e.g., Course Hero, One Class, etc.)
- Scanning, sharing, uploading, or publishing exams, tests, or scholarly work

For more information on what academic integrity is and why it is important see please see the Learning Commons' tutorial. Information on the process of investigations into breaches of academic honesty can be found at these academic integrity FAQs.

Important Note from the FSc Committee on Examinations & Academic Standards (CEAS): 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. Whenever a student submits work obtained through an external site (*e.g.,* Course Hero, Chegg), the **submitting student will be charged with plagiarism** and the **uploading student will be charged with aiding and abetting**. To avoid this risk, students are urged not to upload their work to these sites.

Assistance & Supports for Students

We all need help from time to time and York has a variety of resources available to support you in your courses and your daily life. Below you can find links to these resources.

Faculty of Science Academic Advising – Departments also offer program-specific advising. Check with your Department's Undergraduate Office.

York University Learning Commons – General academic learning supports including library research, time management, study skills, career planning, etc.)

Bethune College Writing Services – Faculty of Science & Lassonde students can get support for written assignments (whether you're just starting or want someone to read it over).

York University Library – The library is your one-stop shop for information! Get articles & other resources (including resources for student success), study, use the equipment in the Making & Media Creation Labs, & check out their workshops.

York University Student Services – Links to all student services (academic & personal)

Centre for Indigenous Students Services – Community space & supports for Indigenous students

York International Support Services for International Students – Advising, peer mentoring, & information about on-campus employment for international students

York University English as a Second Language Open Learning Centre – Offers support to English as another language students to improve English skills

York University Centre for Human Rights, Equity, and Inclusion

York University Student Counselling, Health & Well-being

York University Student Well-being Resources – Wide variety of resources to support your personal well-being

Office of Student Community Relations – Offers conflict resolution services & supports students through crises

Food Access, Funding, & Supports/Resources – Information on meal programs, food banks, emergency bursaries, community gardens, & more

The Centre for Sexual Violence Response and Support – Provides support & resources for those who have experienced or been impacted by sexual or gender-based violence

Good2Talk 24-hour Ontario Student Helpline: Call 1-866-925-5454 or Text: GOOD2TALKON to 686868

Suicide Crisis Helpline (24 hours a day/7 days per week): https://988.ca; Call or Text 9-8-8.

GuardMe Student Support Program – free, confidential health & well-being support

Bethune College Peer Assisted Study Sessions (PASS) – Facilitated study groups – available for specific 1st & 2nd year science courses

Bethune College Peer Tutoring – one-on-one drop-in tutoring to help you better understand concepts

York Federation of Students Food Support Centre – provides free non-perishable food & basic need items

If you have a suggestion to add to this list, please let us know!

Accessibility

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

If you need of these services, please register with accessibility 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 accessibility 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 Accessibility Services**
- **York Accessibility Hub**

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 assignment or in-class engagement activity pose such a conflict for you, contact the Course Director within 14 days of the date for which accommodation is sought (however, the *earlier you contact us, the better!)*. Procedures are outlined in York's *Academic Accommodation for Students' Religious Observances*.

Ethics Review Process

York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants*. Ethics approval must be obtained prior to starting any research activities involving human participants, including research conducted by graduate or undergraduate students for a course/thesis/project/dissertation. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

Student and Instructor 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. Please see the policy and procedures governing disruptive and/or harassing behaviour by students in academic situations.

Academic accommodation refers to educational practices, systems and support mechanisms designed to accommodate diversity and difference. The purpose of accommodation is to enable students to perform the essential requirements of their academic programs. At no time does academic accommodation undermine or compromise the learning objectives that are established by the academic authorities of the University.

Please consult the University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know.

Course Overview – *topic timeline subject to change*

Topic	Monday	Tuesday	Wednesday	Thursday	Friday
January					
1 Scientific integrity	*Term starts* **6**	**7**	*First Day of Class* *Scientific Misconduct Survey* **8**	**9**	*Team partner form due* **10**
2 Collaboration & Conflict of Interest	**13**	*Collaboration & COI survey due* **14**	*RR1* *Teams!* **15**	**16**	*GTKY survey due* *Initial reflection due* **17**
3 Expt Design & Data Part I	**20**	*Data survey due* **21**	*RR2, presentation dates* **22**	**23**	**24**
4 Expt Design & Data Part II	**27**	*Publication survey due* **28**	*RR3* **29**	*Case study video analysis due* **30**	*Team Charter due* **31**
February					
5 Publishing & Replication	**3**	**4**	*RR4* **5**	*Case study written analysis due* **6**	*Case study peer review due* **7**
6 Case Analysis	**10**	**11**	*Find out debate topics, Case jigsaw* *Case study reflection due* **12**	**13**	**14**
No Classes!	**17 Reading Week**	**18 Reading Week**	**19 Reading Week**	**20 Reading Week**	**21 Reading Week**
7 Predicaments	**24**	**25**	*Predicament Creation* **26**	**27**	**28**
March					
8 Debates	**3**	**4**	*Predicament Answers* **5**	**6**	**7**
9 Debates	**10**	**11**	*Written debate due* **12**	**13**	**Drop Deadline** **14**
10 Debates	**17**	**18**	*In-class Debates (1-2)* **19**	**20**	**21**
11 Review	**24**	**25**	*In-class Debates (3-5)* **26**	**27**	**28**
April					
12 Final Exam	**31**	**1**	*Final Exam (in class)* **2**	**3**	*Final reflection due* *Last day of class* **4** *Withdrawal deadline*