Science YORK Department of Biology Course Outline

Fall 2024, BIOL 4120 Sections A & B, APPLIED IMMUNOLOGY, 3.0

Course Instructors: Tanya Da Sylva Hear my name

How to address me: Dr. Da Sylva **Personal Pronouns:** she/her/hers

Email: biol4120@yorku.ca

Note: If you have a question, you can send me an email, book a one-on-one appointment, visit me during student hours or approach me after class.

Student Hours: I'll be available for at least half an hour after class on Mon & Wed (when classes are held). Come to the front of the class, we can talk there or head to my office together.

What are 'Student Hours'?

Student hours are dedicated times through the week for the course instructor to meet with YOU. Pop in to introduce yourself, ask questions about the course, or discuss content from the course.

Note: If these times don't work for you, email me and we can arrange an alternate time to meet.

Course Format: BIOL 4120 is an interactive and blended course. When we do have class meetings, they will be mainly activities and discussion, so attendance is strongly encouraged. Some marks will require class attendance; I understand that you might not be able to make it to every class and have accounted for this in the course assessment.

Classes (or portions thereof) may be recorded, depending on what we're doing in class. Please note, recordings pick up sounds in the classroom and thus your voice may be recorded.

Prerequisites: SC/BIOL 3120 3.0

Class Times:

There are two sections of BIOL4120 this semester. You must attend the section you are enrolled in.

Section A, Mon. & Wed. **1:00pm – 2:30pm** Section B, Mon. & Wed. 4:00pm - 5:30pm

- Blended delivery Not all class periods are used; when held, classes will usually be in-person (on campus). A few class periods may be held on Zoom. The class schedule and format (in-person or Zoom) will be posted to eClass.
- Note: Zoom is not a replacement for inperson attendance when required; unless specifically stated attendance in-person (on campus) is required.

Class Location: CB 129

You may want to check the York courses site before attending class in case there are last minute changes. York will not communicate these changes to you.

Click here for visual directions.

Study Spaces on Campus:

https://currentstudents.yorku.ca/study-spaces

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Land Acknowledgement

York University recognizes that many Indigenous Nations have longstanding relationships with the territories upon which York University campuses are located that precede the establishment of York University. As members of the York 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. It is now home to many First Nation, Inuit, and Métis communities. We acknowledge 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. As settlers on this land, and as biologists, we have a responsibility to respect and care for this land and its resources. You can find out more about the traditional homelands that you occupy by heading to https://native-land.ca.

We'll be using several technologies this term to help us connect and accomplish our goals. To consider the impact and implications of using these tools, we should also acknowledge where these tools "reside" in terms of their headquarters. 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, and we acknowledge and respect their continuing contributions to the region that includes Perth. Perusall is in Austin, Texas and is part of the land that has been—and continues to be—shared and caretaken by several Indigenous groups, including the Alabama-Coushatta, Caddo, Carrizo/Comecrudo, Coahuiltecan, Comanche, Kikapoo, Lipan Apache, Tonkawa, and Ysleta Del Sur Pueblo. Microsoft, which connects us through email and slide decks is in the traditionally occupied land of the Sammamish, Duwamish, Snoqualmie, Suquamish, Muckleshhoot, Snohamish, Tulalip, and other coastal Salish people since time immemorial.

Welcome to this Course!

Welcome to BIOL 4120! Together we explore the structure and function of the immune system and its applications. You will work individually and in groups to explore in greater depth areas of immunology that are of particular interest to you, while also building a deeper understanding of the questions being addressed in the field today.

Course Calendar Description: In this course you will build a deeper understanding of the molecular, cellular, and regulatory mechanisms of the immune system while exploring the research on, and application of, immunology in living systems. Three lecture hours. One term. Three credits.

COURSE LEVEL LEARNING OBJECTIVES

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

Course Content

- 1. Critically evaluate information about immunology from a variety of sources.
- 2. Synthesize and apply knowledge of the immune response to discussions of organism function and pathology.
- Evaluate the impact of cellular, molecular and/or regulatory aberrations of the immune response on organism function.
- Explain, with examples, how principles of immunology have been applied to the development of drugs, vaccines, and experimental and diagnostic techniques.
- 1. Communicate information, arguments, analyses, and defensible conclusions accurately and reliably in verbal/written form, using displays of data where appropriate, on your own and in small groups.

Skills

- 2. Work effectively and collegially with your peers.
- 3. Use immunological terminology in correct scientific context.
- 4. Evaluate information provided in a reading, presentation, word problem, figure, or data set.
- 5. Critically evaluate scientific literature; synthesize and summarize key points from published literature to provide relevant information and support for an assignment, argument, etc. in experimental systems
- 6. Answer questions for quizzes, activities, and Deep Questions with academic integrity.

Equity, Diversity & Inclusion in BIOL 4120

I am committed to providing and encouraging an environment of equity, diversity, and inclusion (EDI) within this course. I designed this course with a commitment to the principles of Universal Design for Learning and evidence-based teaching practices. I believe that you can all succeed! This class is a community, and we are here to learn and succeed together and support each other.

Although we don't delve into a lot of history in this course, we should acknowledge that 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. I hope to continue improving this course, integrating diverse scientists and experiences. Please contact me at biol4120@yorku.ca or if you have any suggestions to improve the course in terms of equity, diversity, and inclusion.

We are always in the process of learning! I will make mistakes, and hopefully correct myself. I expect the same effort and accountability from all of you. In the interest of improving though, if anything was said in class (by anyone, including me) that made you feel uncomfortable, please talk to me about it (anonymous feedback is an option).

YorkU 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. See: https://www.yorku.ca/laps/eslolc/ for more information.

This course has been designed according to Universal Design for Learning (UDL) principles that introduce flexibility into the course and addresses many accommodations (and the time provided allows for self-accommodation). However, if you are struggling to complete assignments on time or feel you need an alternative format, please reach out to me as soon as possible. We can then discuss ways to ensure your full participation in the course, and work with you to consider options, and how to best coordinate any accommodations.

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	 Honestly demonstrate our knowledge and abilities on assignments and exams Communicate openly without using deception, including citing appropriate sources 	 Provide honest feedback on your demonstration of knowledge and abilities on assignments and exams Communicate openly and honestly about the expectations and standards of the course via the syllabus, and with respect to assignments and exams
Responsibility	 Complete assignments on time and in full preparation for class Participate fully and contribute to team learning and activities 	 Provide timely feedback on your assignments and exams Show up to class on time, and be mentally and physically present Create relevant assessments and class activities
Respect	 Speak openly with one another, while respecting diverse viewpoints and perspectives Provide sufficient space for others to voice their ideas 	 Respect your perspectives even while we challenge you to think more deeply and critically Help facilitate respectful exchange of ideas
Fairness	 Contribute fully and equally to collaborative work, so that we are not freeloading off others Not seek unfair advantage over fellow students in the course 	 Create fair assignments and exams, and grade them in a fair, and timely manner Treat all students equitably
Trust	 Not engage in personal affairs while on class time Be open and transparent about what we are doing in class Not distribute course materials to others without authorization 	 Be available to all students when we say we will be Follow through on our promises Not modify the expectations or standards without communicating with everyone in the course
Courage	 Say or do something when we see actions that undermine any of the above values Accept a lower or failing grade or other consequences of upholding and protecting the above values 	 Say or do something when we see actions that undermine any of the above values Accept the consequences (e.g., lower teaching evaluations) of upholding and protecting the above values

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

Contacting the Instructor

Please use biol4120@yorku.ca to contact me (Dr. Da Sylva), not the eClass message system or personal email address; use your yorku.ca email address, if possible, as emails from other addresses are likely to be filtered as spam/junk and will delay your receiving a response. **The** subject line should include a relevant topic description. To use professional and personal time more effectively, email is typically not checked between 5 pm and 9 am, nor at any time on the weekends.

Learning Materials

Textbook: There is no required textbook for this course! We'll be engaging extensively with the scientific literature in immunology. We may also use a variety of other reliable sources of information. You are expected to read relevant/assigned papers prior to class. In completing both individual and group assignments, you will need to research and read additional scientific literature, beyond that assigned for class.

eClass: We'll be using eClass (https://eclass.yorku.ca/) extensively in this course; it's where you'll find announcements, course materials, resources, discussion forums, etc. Please check your email account associated with eClass regularly (at least three times per week) for course announcements.

Technology Checklist:



Note: Zoom may be used for one-on-one meetings and Zoom along with a webcam and microphone will be necessary for some class periods. If you don't have access to a computer, webcam, and/or microphone there single workspaces available for student use on campus at the library. are (https://www.library.yorku.ca/web/ask-services/printing-and-computing/computing/public-computers-labs/). If you feel lack of access to a computer, webcam and/or microphone may impact your performance in the course (i.e., completing marked components) please email me to discuss the issue.

Assessment in this Course

This course is set up to help you to develop your skills in thinking critically, writing, collaborating, and presenting—skills that are useful no matter what your career—in the context immunology. Research about learning strongly suggests that the most important factor in learning is doing the work of reading, writing, recalling, practicing, synthesizing, and analyzing – all things that you will be doing in this course!

Most of this course involves learning from primary and secondary literature, and discussions with your peers; there is a limited component of this course that is "lecture-y". Class time focuses on

discussion, activities, and sometimes time for work on individual or team projects. Therefore, participation is key in this course, and you won't succeed if you aren't willing to participate and collaborate.

As a blended course, not all class periods will be used; when classes are held, your participation and presence are appreciated by the instructor and student colleagues in the class. You'll gain much more from the course by being an active participant in it! When class periods are not used, you'll still be engaging with the course through online or other work.

You should have sufficient time to complete all course elements. You may still find yourself struggling to complete assignments on time but that doesn't mean you can't do it; it often means you just need more support to do so. **There is no shame in asking for help!** Being able to accurately assess your progress and seek resources or support as necessary is one of the key traits professional schools and employers look for.

Grade Breakdown

COMPONENT	WEIGHTING & INFORMATION
ANNOTATIONS	8%
ACTIVITIES	5%
JOURNAL CLUB	
ARTICLE DISCUSSIONS	2%
LITERATURE SYNTHESIS	15%
CLINICAL IMMUNOLOGY & IMMUNOTHERAPY	
"WHAT'S NEW IN" SYNOPSIS (HANDOUT)	8%
PRESENTATION: ADVANCEMENTS IN UNDERSTANDING	26% (multiple elements)
THERAPEUTIC INNOVATION REPORT	28% (multiple elements)
PLANNING & PROGRESS	7% (multiple elements)
TEAM & SELF EVALUATION #	1%

^{*}You must complete the Team & Self Evaluation to receive a grade on the Presentation (*Advancements in Understanding*).

NOTE: You may be asked to submit electronic copies of any written work first to Turnitin and then to Crowdmark/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.

THIS COURSE DOES NOT HAVE ANY MIDTERMS OR FINAL EXAMS. I have worked to ensure that major assignments are scaffolded with elements to help keep you on track. If you are struggling to stay on track, please reach out to me so that I can support you (through email biol4120@yorku.ca or drop-in

hours). You're also highly encouraged to collaborate with your peers and support each other (though individual assignment submissions must be your own unique work, unless otherwise noted).

LATE POLICY: Life happens! I want to see you succeed, and I understand this course is not the only thing you have going on in your life. Many activities and assignment elements have some flexibility (e.g., grace periods where assignments can be handed in after the due date without penalty, dropping the lowest etc). There are also other policies in place to help you balance your individual needs with course completion (detailed in this syllabus).

Grace periods, or other flexibility policies have been built into the course structure (this syllabus) wherever possible. In general, further extensions or accommodations for missed assignments/activities, not noted in this syllable will not be granted. That means, these missed or late assignments (beyond grace period, or after due date where no grace period is noted) will receive a zero. If you feel you have circumstances that require additional accommodation, please reach out to me as soon as possible.

RELIGIOUS ACCOMMODATION. You are entitled to religious accommodation where necessary. **Please let me know of any potential religious conflicts within the first 3 weeks of term.** See 'University Policies' for more information. There will be a few days where your participation is absolutely required so that you and your peers get the full benefit of the exercise or event.

Important Dates

Drop Deadline: November 8, 2024 (last day to drop without course on transcript)

Course Withdrawal Deadline: Dec 3, 2024 (course still appears on transcript with 'W")

Annotations (8%)

Through assigned readings and in-class work, you'll learn about different topics in the course, as well as be introduced to and practice skills that are needed for the individual and group work. To support effective reading practices and prepare for class activities you will annotate assigned readings in Perusall **before coming to class**. Perusall has collaborative annotation tools that help you in your reading and analyses of the primary and secondary literature.

Each Perusall annotation assignment will be worth 5 points; part marks are possible. Perusall Assignment points will be based on the quality of your annotations and thorough reading of the assigned paper. Quality of annotations is determined by depth of thought, not accuracy (i.e., right/wrong). The number of annotations required may vary by assignment and will be clearly stated in the assignment itself.

Perusall Annotations are due before the start of class (12 pm; noon). There are no extensions, grace days or make-ups for Perusall assignments as these readings prepare you for class (missed or late annotation assignments will receive zero. There are five annotation assignments, your best four of five assignments will be used to calculate your final Annotations mark (8%). In other words, your lowest annotation assignment will be dropped. This policy also allows you to miss one annotation assignment without penalty (missed or late assignments = zero).

Below, I've listed the topics, readings and **dates to help you plan ahead**. Please note readings, and dates may change (updates will be posted to eClass).

WEEK	DUE DATE (BY 12PM; NOON)	TOPIC	PAPERS#	GRACE DAYS
2	2 Mon. Sept 9 Complexity of the immune response		Annotation # 1Lopez, 2022 andZach & Greslehner, 2023	No
Wed. Sept 11	Wed. Sept 11	Trained immunity & exposure history	Annotation #2: Cheong et al., 2023	No
3	Mon. Sept 16	Recent clinical developments	 Annotation #3, you'll be assigned one of: Varadé et al., 2021 Weber et al., 2020 	No
4	Mon. Sept 23	The double-edged sword of inflammation	 Annotation #4, you'll be assigned one of: Medzhitov, 2021 Xu et al., 2020 	No
	Wed. Sept 25	Allergic responses	Annotation #5: • Akdis et al., 2023	No
5 & 6	Mon. Sept 30 & Mon. Oct 7	NOTE: you will also have readings assigned in Perusall due Sept 30 and Oct 7, but these are part of the Journal Club assignment (see below).		

^{*} For some annotation assignments you will be assigned one article from a group of readings, and/or only specific pages of an article may be assigned. When you access the Perusall assignment (on Perusall), you'll only see the article, and/or part you've been assigned. Therefore, while you are encouraged to read all articles, in their entirety (access through York Libraries), you are only required to do the assigned articles/parts in the Perusall.

Activities (5%)

This class relies on the participation of all students! You will earn points for completing class activities. Points will be earned during class time and will mainly be group activities. You'll earn Activity points almost every class period between Sept 9 – Oct 9 (5 points per class). Activities will be graded on a good faith effort.

There are no extensions or make-ups (if you are not in class, you cannot earn the points). Understanding that you may have to miss a few classes, you need only 80% of the total Activity points to earn the full marks toward your Activities grade. This is to account for missed activities for any reason, including missing the deadline, technological/internet problems, illness, etc.

If you earn less than 80% of the total Activities points, your mark out of 5 will be pro-rated. So, for example, if you earn 70% of the total engagement points, your mark will be (70/80)*5 = 4.4/5 for the Activities component of the course.

Tentative schedule and points per class is given below. You should track your own activity participation; activity marks may not be posted to the eClass gradebook until the end of term.

DATE	TOTAL POINTS
MON. SEPT 9	5 points
WED. SEPT 11	5 points
MON. SEPT 16	5 points
WED. SEPT 18	5 points
MON. SEPT 23	5 points
WED. SEPT 25	5 points
MON. SEPT 30	5 points
WED. OCT 9	5 points
TOTAL	40 points (80% = 30 points*)

^{*} Note, as no activity is worth less than 5 points, 80% will be taken as 30 points

Journal Club (17%; multiple components)

You will participate in an asynchronous journal club, where you'll discuss and analyze two primary research articles to gain a deeper understanding of the immune response, as well as the cutting-edge questions, research and debates occurring in the field. Journal clubs are a common and valued feature of many educational and professional programs (e.g., medical residencies, dental schools, undergraduate programs, and so on). They provide a way to discuss the current state of a field while helping you develop critical thinking skills and learn about new ideas and methods. By presenting and participating in journal clubs you are also developing your communication, presentation, and teamwork skills.

Journal Club Papers are grouped into topics, there are five topics with two papers each. **You will be assigned to a topic**. You will discuss both papers individually with your peers (asynchronously through Perusall). Once these discussions have concluded, you will then synthesize the knowledge gained across both readings

TOPIC	PAPERS
INFLAMMASOMES	Roth et al. 2021 & Zhang et al. 2023
AGEING & THE IMMUNE SYSTEM	Collier et al. 2021 & Lim et al. 2024
CANCER IMMUNOLOGY	Cheng et al. 2023 & Cini et al. 2023
VACCINE DESIGN	Arevalo et al. 2022 & Brandi et al. 2022
TOLERANCE	Ahrends et al. 2021 & Downey et al. 2022

Discussions will be asynchronous and take place on Perusall. I will open Perusall assignments where you will contribute your thoughts and ideas, respond to others and communicate with peers in a respectful, constructive and collegial manner - so that everyone can gain a deeper understanding of the subject matter. As you are expected to have a fulsome discussion of the paper, not just annotate, the requirements may be different than the previous "pre-class" annotations. Expectations will be discussed in class and posted within the Perusall assignment.

To make sure your group is reading, and therefore discussing, the same papers at the same time we will schedule the readings as shown in the table below. Everyone's life is busy! The asynchronous nature of these discussions will give you some flexibility to work around other commitments, but your participation must still be timely. Therefore, no extensions will be granted. **Discussion contributions made after the deadline will not count towards your mark.**

	DISCUSSION OPENS	DISCUSSION CLOSES (DUE DATE)
ARTICLE DISCUSSION #1	Tues. Sept 24	Mon. Sept 30 (12pm, noon)
ARTICLE DISCUSSION #2	Tues. Oct 1	Mon. Oct 7 (12pm, noon)

LITERATURE SYNTHESIS (15%)

After completion of the last article discussion, you will integrate information across both articles to build a more comprehensive understanding of the topic, including implications of the latest findings, gaps in knowledge and potential areas for future investigation. **Your Literature Synthesis assignment has two components:** (1) a guided synthesis discussion, in class on Mon Oct 7, and (2) a brief written synthesis report.

- **Guided discussion. During class on Mon Oct 7,** you will join with other peers in your topic group to discuss common themes and integrate information from the two articles. I will provide prompts and further instructions to guide your discussion. You are expected to engage in a fulsome discussion during class, following all instructions given.
- **Synthesis Report.** After class on Oct 7, you will be given further instructions for the written synthesis report. The synthesis will be in the form of concise, short responses to provided prompts. The instructions I provide to guide class discussion on Oct 7, will be designed to assist you in completing this written report. However, your synthesis report is an individual submission and should be in your own words.
 - o DUE Friday, October 11 by 11:59 pm
 - **Grace Period.** You can submit up until Mon. Oct 14 (11:59pm) without penalty. Submissions made after Oct. 14 will not be marked and therefore, receive a grade of zero.

Note: Your Literature Synthesis grade (15%) will include <u>marks for both</u> participation in the guided discussion and the written Synthesis Report. Of the 15%, approximately 2% will come from active participation in class on Oct. 7.

What if I can't attend class on Oct 7th? When classes are held, attendance is expected but life happens! If you miss class due to unforeseen and unavoidable circumstances, you must contact me as soon as possible, (email biol4120@yorku.ca) and no later than 9am on Fri Oct 11th.

In your email you should briefly describe your reason for missing class (no medical or other documentation necessary). Provided you have an acceptable reason, your written report will make up the full weight of the assignment grade (15%). Note, accommodations are at my discretion and not all circumstances will be accommodated; planned absences are unlikely to be accommodated as the expectation is that you will be available to attend class throughout the semester. If accommodation is not granted, you will receive zero for the discussion portion of your mark.

Clinical Immunology & Immunotherapy

The field of Immunology is vast; there is no way in 12 weeks to deeply learn about all the topics that fall under "Applied Immunology", even if we focus on just clinical applications!

Therefore, within a small group you will dive more deeply into a specific, or one type of, immune mediated illness. You will need to do a 'deep dive' of the literature within your topic area, identifying the role of the immune response in pathology, knowledge gaps, challenges to treatment/prevention, and recent clinical innovations.

You will be assigned a group by the start of class on Wed., Sept. 16, and your group will decide together which immune mediated illness you will focus on. This immune mediated illness will be the focus of both group and individual assignments. As a group you'll work together to build a broad understanding of the illness and therapeutic landscape. Individually you will focus on the recent development and impact of one specific immunotherapy.

Communication of scientific concepts in a variety of formats, for multiple purposes is a valuable skill! You will use your findings to create multiple end products, some representing individual work and some representing group work. The end-products are briefly described below, and further details on all elements are provided within the relevant sections on future pages (i.e., keep reading for more details!).

- "What's New In..." Synopsis Handout. You will share a concise description of the immune-mediated illness and recently developed immunotherapies with your class peers (other groups). The handout will be mainly visual/graphical in nature and focus on the therapeutic mechanisms. This will be a multi-page document, with both group sections and individual sections. Your handout will be posted online to share with the class.
 - DUE Friday, November 1 by 11:59pm (group submission; instructions will be posted to eClass).

• **Grace Period.** You can submit up until Mon. Nov 4 (11:59pm) without penalty. Submissions made after Nov. 4 (11:59pm) will receive a 20% per day (or fraction thereof) late penalty.

- Presentation: Advancements in Understanding (team presentation). Your group will be working together to create and deliver a 10-minute presentation on the immune mediated illness (topic) you chose. In your presentation, you'll synthesize your research on the topic to provide an overview of the condition, highlighting the immunopathology, and key clinical advancements and challenges.
 - Presentations will take place during class on Wed. Nov 20, Mon. Nov 25 and Wed. Nov 27. You will be assigned a presentation day and are expected to attend the other groups' presentations as well.
- Therapeutic Innovation Report (individual paper). Within your group you will each, individually, be responsible for identifying one immune-mediated therapy recently developed to treat/prevent your chosen illness (immune mediated illness the group chose). You will, individually, write a paper on the development of your chosen therapy, including pre-clinical research findings, and assessment of its potential impact.
 - o **DUE Friday, November 29 by 11:59pm** (individual submission through Crowdmark).
 - **Grace Period.** You can submit up until Mon. Dec 2 (11:59pm) without penalty. Submissions made after Mon. Dec 2 (11:59pm) will receive a 20% per day (or fraction thereof) late penalty.

How WILL TEAMS BE MADE? I will assign you to a team. Once teams are assigned, they cannot be changed.

- To help me create groups, you will fill in a *Getting to Know You* form on eClass to tell me a little more about yourself. The *Getting to Know You* form will open by Mon. Sept 9 and is **due Fri. Sept 13, 11:59 pm.**
 - Note: Completing the form is not worth any marks but it will help me sort you into groups. If you do not fill in the form by the deadline, I will need to place you into a group without the information.

TEAMS WILL BE ANNOUNCED BY THE START OF CLASS ON WED SEPT 18. You will be given class time to work on your team charters on Wed. Sept 18 and should plan to be in class. If you can't make it to class on Sept 18, it is your responsibility to check eClass for your Team information and contact your team members to catch up on any conversations.

BIOL 4120 Da Sylva

Fall 2024

To encourage productive team environments and help keep you on track there are multiple individual

and group elements, that will help you successfully produce the three final products described above.

	WEIGHT	DUE	TEAM OR INDIVIDUAL SUBMISSION	GRACE DAYS (NO PENALTY)
Team introductions & work on charter		During class on Wed. Sept 18	*See note below	No
Team Charter + Topic Choice (incl. list of individual therapeutic innovations)	3%	Fri. Sept 20, 11:59 pm	Group	Yes, until Mon Sept 23, 11:59 pm
Individual Progress Report	2%	Mon. Oct 21, 11:59 pm	Individual	Yes, until Wed Oct 23, 11:59 pm
Team Progress Meeting	2%	Oct 21 – Oct 23; Grps must meet with me (booking instructions will be posted)	Group	No
"What's New In" Synopsis (Handout)	8%	Fri. Nov 1, 11:59 pm	Group (incl. grp & indiv sections)	Yes, until Mon Nov 4, 11:59 pm
Practice & Peer Review - Team Presentation (Advancements in Understanding)	3%	During class on Wed. Nov 13	Group	No
Draft Therapeutic Innovation Report (indiv. paper); submitted to me & a peer reviewer	1%	Fri. Nov 15, 11:59 pm	Individual	No
Return of Peer Review - Therapeutic Innovation Report Peer Review (your review of a peer's draft)	2%	Fri. Nov 22, 11:59 pm	Individual	No
Team Presentations (Advancements in Understanding)	20% #	During class Nov 20, Nov 25 & Nov 27	Group	No
Peer Q&A Facilitation	2%	During presentations (classes of Nov 20 – 27)	Group	No
Audience Feedback (on presentations)	1%	During presentations (classes of Nov 20 – 27)	Individual	No
Therapeutic Innovation Report (individual paper)	25%	Fri. Nov 29, 11:59 pm	Individual	Yes, until Mon Dec 2, 11:59 pm
Team & Self Evaluation	1% #	Mon. Dec 2, 11:59 pm	Individual	Yes, until Tues Dec 3, 11:59 pm

[#] You must complete the Team & Self Evaluation to receive a grade on the Presentation (*Advancements in Understanding*).

PLANNING & PROGRESS (multiple elements; 7%)

You are free, as a team, to decide how work is distributed but all team members are expected to contribute equitably. If there are issues with your contributions to the group your Team Project mark may be reduced. This may include reductions to individual components, and/or reductions to the total category mark.

Conflicts within your group? I will be available throughout the term to meet with people individually or as a group to help navigate and resolve issues. Please reach out before your work is due!

TEAM CHARTER + TOPIC (3%; Due Fri. Sept 20, 11:59 pm)

You'll choose an immune-mediated illness (topic) and create/develop a team charter (i.e., a sort of contract) with the members of your team, which all members will need to sign. All team members will be expected to adhere to the charter and contribute substantively and equitably. Your submission will include the Team Charter, topic, and a list of the therapeutic innovations chosen by each individual Team member. Only one member of the group will need to submit the Charter + Topic through Crowdmark. Further information, and a template charter will be posted to eClass. Note, class time on Wed. Sept 18, will be used for Team introductions and charter discussions; all group members are expected to attend class on Sept 18.

• **Grace period.** You will be able to submit, without penalty up until Mon. Sept 23 (11:59 pm)

TEAM PROGRESS MEETING (2%; Oct 21 - 23)

All teams must meet with me to discuss their progress on the Advancements in Understanding presentation and "What's New In..." Synopsis (handout) between Oct 21 - 23. Meetings will be 15 minutes long and take place on Zoom. We will not have class the week of Oct 21 in part to free up time for these progress meetings. You will choose a time that works for everyone in the group and book an appointment to meet with me. List of times, and scheduling instructions will be posted to eClass.

Marks will be based on participation in the meeting and whether your group has met progress expectations. Further information, including progress expectations and marking scheme will be posted to eClass.

 If you fail to attend the meeting, you may receive part marks based on your contribution to your team's progress so far. You should email me and your team members to explain your absence.

INDIVIDUAL PROGRESS REPORT (2%; Due Mon Oct 21, 11:59 pm).

You'll document some of your readings and reflect on your assignment progress through completion of an eClass form. The form should only take ~10 to 15 minutes to complete.

• **Grace period.** You will be able to submit, without penalty up until Wed. Oct 23 (11:59 pm)

"WHAT'S NEW IN..." SYNOPSIS (HANDOUT; 8%)

You will share with the class a concise description of your team's chosen immune-mediated illness and the recently developed immunotherapies chosen by group members. The handout will be mainly visual/graphical in nature.

A rubric will be posted to eClass and there will be both individually and group-scored sections of the rubric.

The following sections will be included in the handout (note "page" = a standard letter sized page):

- Section 1: Overview (maximum one page). Your group will create a summary infographic, providing a high-level overview of the key features of your chosen illness. provide a high-level concise summary of the immune-mediated illness. The infographic will include a figure, designed and created by your group, highlighting the key features of the illness, and one to five sentences of textual summary (point form can be used and is encouraged).
 - Several of the articles we'll read in class have summary figures that you can use as examples, and we'll also address graphic design strategies in class.
 - o You will receive a group score for this section.
- Section 2: Recent Therapeutic Advances (maximum one page per group member). Each group member will design a figure illustrating the therapeutic mechanism of their chosen immunotherapy. Figures should be clear and concise, focusing on key information necessary for understanding. The figure should be accompanied by one to three bullet points of text (bullet point = one sentence), noting the state of development (e.g., currently in phase 1 clinical trials, etc.) and summarizing the key "take-home" message of the figure. Both the figure and written bullet points must fit on one letter sized page.
 - o You will receive individual scores for this section.
- Section 3: Future Outlook (one to five sentences or equivalent bullet points). Your group will wrap-up your handout, with a brief statement on the progress towards treating your chosen illness, and future outlook.
 - o You will receive a group score for this section.

The above sections will be combined into one document and saved as a pdf. The "What's New In..." Synopsis handout will be posted online and shared with the class. Instructions for posting/submission will be placed on eClass. **DUE Friday, November 1 by 11:59pm** (group submission; instructions will be posted to eClass).

• **Grace Period.** You can submit up until Mon. Nov 4 (11:59pm) without penalty. Submissions made after Nov. 4 (11:59pm) will receive a 20% per day late penalty.

PRESENTATION: ADVANCEMENTS IN UNDERSTANDING (multiple elements; 26%)

To share your knowledge with the class, your team will create and deliver a **10-minute presentation** synthesizing and summarizing your research on the topic (chosen immune-mediated illness).

Presentations will take place during class on Nov 20, Nov 25 and Nov 27. You will be assigned a presentation day. You should attend all presentation days, not just your own group's. To enhance peer engagement your group will be assigned to lead the Q&A period for another group, and you will individually provide feedback on other group presentations.

To prepare your presentation you'll need to do a 'deep dive' of the literature within your topic, synthesizing and integrating information from multiple sources. While there is no minimum or maximum number of sources you can use, to do well you will likely need to read and critically analyze at least 10 articles (primary or secondary research papers).

PRACTICE & PEER REVIEW (3%; during class Wed. Nov 13)

Your team must be ready to run-through a practice presentation (this includes having a draft of the presentation slides) by the start of class on Wed. Nov 13. During class, you'll be placed in a breakout room with another group. Each group will practice their talk and provide feedback to one group of peers (the other group sharing breakout room). Further instructions will be provided in class; marks are for providing meaningful review. **NOTE: Class on Nov 13 will be held remotely on Zoom (not on campus)**

o **If you cannot attend class on Nov 13**, the 3% weight will be transferred to your Team Presentation mark. Note, this is an individual adjustment, the weight of the Team Presentation will remain the same for all other group members.

PRESENTATION: ADVANCEMENTS IN UNDERSTANDING (20%; during class Nov 20 - 27)

You will be assigned a day (Nov 20, 25 or 27) for your 10-minute presentation (team presentation). On your assigned day, your group will deliver a presentation summarizing current knowledge on your topic, highlighting recent developments in our understanding of the illness, including key historical advancements and challenges in therapy.

Your group will be assigned a day to present, and all group members must attend class that day (even if the group member isn't speaking). I will attempt to accommodate scheduling conflicts when assigning your presentation day, however accommodations are not guaranteed. Once assigned a presentation day it cannot be changed.

While all team members are expected to contribute equitably to creating the presentation, not all team members are required to participate in the oral presentation itself (you can delegate "speaking" roles to specific people within the group).

 One member of your group will also submit your slides to me through Crowdmark, by 11:59 pm on your assigned presentation day. The slides themselves will not be marked but will help me with marking of your oral presentation.

Overview of presentation structure (further information, including rubric will be posted to eClass)

- Presentations will have a time limit of 10-minutes; if your presentation goes over 10-minutes, you may be cut off and you will lose marks. Your presentation will be followed by a ~5-minute Q&A period where you will be expected to answer questions from the audience.
- You will have a maximum of 12 slides, including a Title slide at the beginning and Works Cited slide at the end.
 - Title (first slide) should have a creative and descriptive title, along with the names of all group members (no student numbers).
 - Overview of the immune-mediated illness (topic; 4 9 slides). Focusing on recent advancements in our understanding, your presentation will highlight key factors involved in the etiology (causation) and pathological mechanisms as well as current standards in treatment/prevention and future outlook.
 - Wrap-up (1 slide)
 - Works Cited (last slide)

PEER Q&A FACILITATION (2%; during class presentations, Nov 20 - 27)

Your group will be assigned to lead the Q&A period for another group. Note, the Q&A period you'll be assigned may not be scheduled for the same day as your group's presentation.

- As a group you are expected to ask questions about the other group's presentation and to 'chair' the question period itself. You will be marked based on quality of questions asked and appropriate chairing of the question period.
- While this is a 'group' mark, if you (individually) cannot attend the assigned Q&A period (including associated presentation), you may not earn the 2%. To earn the 2% you must prove that you contributed to the creation of questions asked by your other group members, even if you weren't in class.

AUDIENCE FEEDBACK (1%; during class presentations, Nov 20 – 27)

Feedback forms will be posted to eClass for each presentation day. You are asked to provide feedback on all your classmates' presentations. One day's form will have sections for each group that presented that day (a form should take ~5 to 10 min to complete). Forms are due by 11:59pm on the associated day (e.g., feedback for presentations on Nov. 20 are due by 11:59pm on Nov. 20) but you are encouraged to complete the feedback forms at the end of class. No extensions will be given.

- You can only fill out feedback for presentations you witnessed! In other words, if you were not in class that day, you cannot fill in the day's form.
- Marks are for filling out the form following the instructions given. There will be 9 presentations for you to potentially give feedback on (2 to 4 per day). For full marks you must complete feedback for at least 7 presentations. If you give feedback on 5 6 presentations, you will earn 1%; feedback on 3 or fewer presentations will not earn any marks.

THERAPEUTIC INNOVATION REPORT (multiple elements; 28%)

You will identify one immune-mediated therapy <u>recently</u> developed to treat/prevent your chosen illness (topic). You will write a report on the development of your chosen therapy, including the therapeutic mechanism (i.e., why would this therapy work), pre-clinical research findings, and assessment of its potential impact. You will also need to situate your therapy in the context of the immunopathology of the condition and knowledge in the field. You can assume an audience of your peers (knowledge-level).

DRAFT & PEER REVIEW

Draft Submission (1%). You will submit a polished draft of your *Therapeutic Innovation Report* to a peer for review **by Fri Nov 15 (11:59pm).** Expectations of a 'polished draft' will be posted to eClass and marks will be for meeting these expectations by the deadline. To be respectful of your peer reviewer's time, **no extensions will be granted**.

- You will also submit your draft to me through Crowdmark by 11:59pm on Nov 15. Note, I will not be reviewing or commenting on your draft. Submission of your draft to me, serves as confirmation that your draft was prepared by the deadline.
- It is your responsibility to deliver your draft to your peer on time, I will not be distributing the drafts.

Peer Review (2%). You will critically evaluate a peer's (one) draft *Therapeutic Innovation Report.* Further instructions will be provided on eclass; marks are for following instructions and providing meaningful review. **Reviews must be returned to the draft's author by Fri. Nov 22, 11:59pm.** You will also submit a copy of your review to me for assigning marks.

THERAPEUTIC INNOVATION REPORT (25%; individual paper, due Fri. Nov 29, 11:59 pm) You must choose an immune-mediated therapy that has been recently developed for treatment/prevention of your group's chosen condition.

"Recently developed" means the therapy must still be in clinical trials or gained market authorization to treat/prevent your group's chosen illness, within the last three years.

- For further clarification, the therapy you choose must either:
 - o still be in the clinical trial stage (any phase), or
 - o been approved for use to treat the chosen illness by the American Food and Drug Administration (FDA) or Health Canada, no earlier than Jan. 1, 2021.

You'll independently research, analyse and synthesize the literature on your therapy and therapeutic mechanism, with an emphasis on recent work. In writing your report, you may use a combination of primary and secondary (e.g., review papers, metanalyses, etc.) papers and other reputable literature (e.g., clinical trial reports, government health data, etc.). There is no minimum or maximum number of sources, but to address your topic well you will need at least 3 primary sources (e.g., pre-clinical research on drug, etc.) and likely one or more secondary sources of information.

You will submit your final paper, individually, through Crowdmark (further details and rubric will be posted to eClass).

- **Grace period.** You will be able to submit, without penalty up until Mon. Dec 2 (11:59 pm). Submissions made after Mon. Dec 2 (11:59pm) will receive a 20% per day (or fraction thereof) late penalty.
 - O Note, I will also consider Deferred Standing applications for the Therapeutic Innovation Report. You must email me a completed Deferred Standing Agreement (DSA) form no later than one week after the end of the grace period. With the form you must provide evidence of an unexpected and unavoidable circumstance preventing you from completing end of term work. Deferred Standing is not guaranteed, and deferred deadlines are at my discretion. Without approved Deferred Standing the above late penalties will apply.

TEAM & SELF EVALUATION (1%)

You'll evaluate your own and your peers' contributions to the Team and reflect on your learning by completing an evaluation form (marks are for meeting criteria/instructions given in form). Forms will be open after the start of team presentations on Nov 20 and take ~10 to 15 min to complete.

You should wait until after your team presentation is completed before submitting your form. The Team & Self Evaluation form is **due on Dec 2 (11:59 pm)**

• Grace period. You will be able to submit, without penalty up until Tues. Aug 13 (11:59 pm)

Note: you must submit your Team & Self Evaluation to receive a mark for the Presentation (Advancements in Understanding).

Regrading/Reappraisal Procedures

Reappraisal requests should be submitted to biol4120@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 instructions and/or rubric. If a written rationale is not included, requests for remarking will not be considered, nor will they receive a reply.

Academically valid grounds for remarking should show why you believe your work met the assignment instructions and/or rubric criteria. It is your responsibility to provide evidence of how your submission was met the relevant success criteria. Statements such as 'this mark doesn't reflect how hard I worked' or 'I need a higher mark' or 'the grading was not fair' or 'I think I did this well' do not have academic merit and will not receive responses. You also cannot compare your results to other students'. Your assignment must have merit ON ITS OWN.

Requests for reappraisal that do not include a written rationale providing academically valid reasons will not receive a reply.

Note: **reappraisal can result in the mark being raised, lowered, or staying the same.** Reappraisal grades are considered final. I will strive to review all reappraisals within 3 weeks, but it may take longer.

Please note that to be fair and consistent individual **grades are not negotiable**. I have designed this course to have no one heavily weighted element and there is considerable flexibility and buffer built into the course. There are no 'extra credit' assignments, individual grades are not "bumped" and course grades are not "curved". All requests for such will be ignored.

University Policies

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: https://calendars.students.yorku.ca/2022-2023/grades-and-grading-schemes

Academic 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 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 Honesty (http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/). The Policy affirms the responsibility of faculty members to foster acceptable

standards of academic conduct and of you, as a student to abide by such standards. Please review and familiarize yourself with the policy.

There is also an 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 intentionally or unintentionally)
- 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:

https://spark.library.yorku.ca/academic-integrity-what-is-academic-integrity/. Information on the process of investigations into breaches of academic honesty:

https://spark.library.yorku.ca/academic-integrity-breach-of-policy-on-academic-honesty/

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 for Students (Academic and Well-Being)

Academic Advising*: https://www.yorku.ca/science/academic-advising/* Departments also offer program-specific advising. Check with your Department's Undergraduate Office.

Centre for Human Rights, Equity, and Inclusion: https://rights.info.yorku.ca

Centre for Indigenous Students Services: https://aboriginal.info.yorku.ca/

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

Keep.meSAFE: https://myssp.app/keepmesafe/ca/home

Learning Commons (general academic learning supports including library research, time management, study skills, career planning, etc.): https://learningcommons.yorku.ca/

Peer Assisted Study Sessions (PASS): https://www.yorku.ca/colleges/bethune/get-help/pass/

Peer Tutoring: https://www.yorku.ca/colleges/bethune/get-help/peer-tutoring/

Sexual Violence Response and Support: https://thecentre.yorku.ca

Student Counselling, Health & Well-being: https://counselling.students.yorku.ca/

Support Services for International Students: https://yorkinternational.yorku.ca/international-student-support/

Writing Services: https://www.yorku.ca/colleges/bethune/get-help/writing/

York University Student Services: https://family.yorku.ca/student-services/#SCD

York University Student Well-being Resources: https://www.yorku.ca/well-being/resources/students/

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) needing 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 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: https://accessibility.students.yorku.ca

York Accessibility Hub: http://accessibilityhub.info.yorku.ca/

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. To arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), you must complete and submit an accommodation request form at least 3 weeks before the exam period begins. https://secure.students.yorku.ca/pdf/religious-accommodation-agreement-final-examinations.pdf

Student and Instructor Conduct in Academic Situations

We (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. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at http://secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/.

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.

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

https://calendars.students.yorku.ca/2021-2022/policies-and-regulations

Course Overview – schedule subject to change

WEEK	DO WE HAVE CLASS?		ON-CAMPUS OR ZOOM?	WHAT ARE WE DOING?
1	Wed Sept 4	YES	On-campus	Intro to course
	Mon Sept 9	YES	On-campus	Pre-reading (annotation) before class; class activity/discussion
2	Wed Sept 11	YES	On-campus	Pre-reading (annotation) before class; class activity/discussion
	Mon Sept 16	YES	On campus	Pre-reading (annotation) before class; class activity/discussion
3	Wed Sept 18	YES	On campus	Team introductions & work on Team Charter (Clinical Immunology & Immunotherapy)
4	Mon Sept 23	YES	On campus	Pre-reading (annotation) before class; class activity/discussion
4	Wed Sept 25	YES	On campus	Pre-reading (annotation) before class; class activity/discussion
5	Mon Sept 30	YES	On campus	Journal Club Article Discussion #1 before class (on Perusall; class activity/discussion
	Wed Oct 2	NO		Work on projects and Journal Club Article Discussion #2
6	Mon Oct 7	YES	On campus	Journal Club Discussion #2 before class; Synthesis discussions in class
	Wed Oct 9	YES	On campus	Class activity/discussion
7	Mon Oct 21	NO		Work on projects; Teams must meet with me on Zoom (Oct 21 –
-	Wed Oct 23	NO		23; Team Progress Meeting)
8	Mon Oct 28	NO		Work on projects
	Wed Oct 30	NO		Work on projects
9	Mon Nov 4	NO		Work on projects
	Wed Nov 6	NO		
10	Mon Nov 11	NO		Work on projects
	Wed Nov 13	YES	Zoom	Team Presentation Practice & Peer Review
11	Mon Nov 18	NO		Work on projects
	Wed Nov 20	YES	TBD	Team Presentations
12	Mon Nov 25	YES	TBD	Team Presentations
	Wed Nov 27	YES	TBD	
	Mon Dec 2	NO		Wrap-up term

See Annotations & Journal Club sections for topics covered in class activity/discussion