

## Department of Biology Course Outline

SC/BIOL 3120 3.00 Immunobiology  
Winter 2020

### Course Description

The biology and chemistry of the immune response. Structure and function of antibodies; antibody diversity; anatomy and development of the immune system; cellular interactions; immunological responses in disease. Production and use of monoclonal and polyclonal antibodies. Three lecture hours. One term. Three credits.

### Prerequisites

SC/BIOL 2020 3.00, SC/BIOL 2021 3.00, SC/BIOL 2040 3.00, SC/BIOL 2070 3.00.

### Course Instructors and Contact Information

**Course Instructor:** Dr. Tanya Da Sylva

**Office:** 151A Farquharson

**Office hours** As posted on Moodle or by appointment

- Office hours are times when you can drop-in (no appointment necessary) and ask questions or discuss course matters.

**Email:** [bio3120@yorku.ca](mailto:bio3120@yorku.ca) (note: it's bio **not** bioL)

**Emails must include your name and student number and have a descriptive subject line.** Expect an average response time of 3 business days. Email will not be checked on weekends or holidays.

Email is not a substitute for office hours. Some questions and/or concerns are better addressed in person and you will be asked to come to office hours or make an appointment with me.

### Schedule

Mondays and Wednesdays, 5:30 – 7 pm in VH D

## Evaluation

The final grade for the course will be based on the following items weighted as indicated+:

Innate Assignment (February 10, 2020) _____	12%
Adaptive Assignment (March 16, 2020) _____	12%
SciComm Lesson (January 31, 2020) _____	1%
SciComm Project (March 2, 2020) _____	15%
Immuno & Me (March 20, 2020) _____	4%
Weekly activities (weekly) _____	8%
Midterm 1 (February 12, 2020) _____	15%
Midterm 2 (March 18, 2020) _____	15%
Final Exam (TBD; announced by Registrar) _____	18%

*\*If you do better on your final exam than either Midterm 1 or Midterm 2, 5% weight from the lowest scoring midterm will be transferred to your final exam.*

+Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles

## Important Dates

Classes Start: Monday, January 6<sup>th</sup>

Winter Reading Week (NO CLASS): February 15<sup>th</sup> – 21<sup>st</sup>

Drop Date: March 13<sup>th</sup>

Last Day of Classes: April 5<sup>th</sup>

Course Withdrawal Period: March 14<sup>th</sup> – April 5<sup>th</sup> (course appears on your transcript without a grade and with a "W" notation)

Exam Period: April 7<sup>th</sup> – 25<sup>th</sup> (inclusive)\*

**\* It is your responsibility as a student to ensure that you are available to sit for examinations during the entire exam period.**

NOTE: Important dates may change to verify and for additional important dates such as holidays, refer to the "Important Dates" section of the Registrar's Website at <http://www.yorku.ca/yorkweb/cs.htm>

## Resources

**Required Textbook:** *Kuby Immunology 8<sup>th</sup> Edition*. J. Owen, J. Punt and S. Stranford. W.H. Freeman and Company Publishers.

Please see the Reading Schedule on Moodle for important information on textbook readings. Additional readings may be assigned or recommended during the course

## Learning Outcomes

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

- Use current and historical research in immunology to support discussions and explanations of the immune response
- Discuss the role of, and relationships between, cells of the hematopoietic system in the immune response
- Explain the major components of the mammalian immune response; distinguishing between and describing the interactions of the innate and adaptive immune branches and the cellular and humoral branches of immunity.
- Describe and discuss unique features of the adaptive immune response including the generation of diversity, clonal selection, self-tolerance and memory responses.
- Explain the development, activation and effector responses of immune cells
- Relate knowledge of the development and mechanisms of the immune response to the understanding of disease processes, immune therapy and the use of immunological mechanisms and methods in experimental systems.

## Course Content

We will learn about many cell types, molecules, signalling pathways, biological processes, regulatory networks, and other components of the immune system. We will focus on the mammalian immune response but will touch upon non-mammalian immune systems and the evolution of immunity. You will be exposed to a lot of 'new' information. One of the best ways to learn all this new information is to focus on the connections between the different parts of the immune system and keep returning to the 'big picture' concepts. Class is an opportunity for me to help you do this.

In class I will provide you with the information and tools that will help you navigate the complexities of the immune response. To do this **I need you to come to class prepared** which includes completing the textbook readings before class and being prepared to answer questions or complete activities given in class.

Pre-class readings are meant to prepare you to actively participate in class; **you are not expected to understand the material from the textbook alone.** A Reading Schedule will be posted to Moodle. **If you are spending more than one hour on each reading before class, please speak to me.** You should also be revisiting the readings after class.

Please don't hesitate to ask questions in class, in office hours or on our Moodle forum. There are no silly questions. The immune system is complicated, even professional immunologists are only experts in a small subset of the field. This is your first course in immunology; you're supposed to have questions!

## Experiential Education and E-Learning

**Experiential education:** You will gain hands-on skill development in teamwork and scientific communication. You will go through case studies and be expected to apply course concepts to real world issues. Throughout the term you will be asked to reflect on your learning and connect course concepts to your own experiences.

## Other Information

### Additional Information:

- You will be responsible for material presented in class and associated textbook sections. The textbook is your resource and will help you understand this material. It contains many of the visuals presented in the lectures. Pay careful attention to the Figures and to the questions and guidelines for study at the end of each chapter.
- Audio recording (ONLY audio) of the lecture is permitted. Recordings can only be shared with students enrolled in the course and section the recording was made of. Therefore, recordings CANNOT be uploaded to public websites or otherwise shared publicly. Students in violation of these policies may have legal action taken against them.
- The midterms will consist predominantly of multiple-choice but may include short answer, fill-in, matching, calculating and drawing type questions.
- Your comprehensive final will take place during the exam period and will have the same type of questions as the midterms and may have essay questions. **It is your responsibility as a student to ensure that you are available to sit for examinations during the entire exam period.** Under no circumstances will makeup exams (midterm or final) be provided because of conflict with vacation plans.
- All assignment/test grades will be posted to Moodle when available. **Do not email asking when grades will be posted** or for your grade; these emails will not receive a response.
- It is your responsibility to earn your grade. Individually adjusting a student's grade without academic merit is unethical. All requests for grade "bumping" will be ignored.

## Course Policies

### Grading and Policies for Missed Tests and Assignments

**Grading:** The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (for a full description see the York University Undergraduate Calendar – <http://calendars.registrar.yorku.ca/2014-2015/academic/grades/index.htm>)

**Missed Midterm/Exam – General Policies:** Students must have an **urgent reason** for missing a course test, such as illness, compassionate grounds, etc., Supporting documentation (e.g., attending physician's statement) may be required.

- **It is YOUR responsibility to get to class on time.** Plan to be on campus early on test days; transit and/or traffic issues happen but you cannot be given extra time to write. Plan to be at exams early.
- **Bad weather will not postpone a test unless York officially closes campus.**
- Valid and appropriately detailed documentation supporting the events preventing your attendance may be required.
- **NOT all situations will be accommodated**, meaning that a zero will be assigned on the missed test.

**Midterms:** You MUST fill in the missed test form on Moodle **within five business days** of missing the test (the sooner the better). The form will explain any documentation necessary.

- **One make-up will be scheduled for each midterm.** Only one make up date will be scheduled for each midterm. If you have a valid reason for missing both the original midterm and the make up midterm then the weight of the missed test(s) will be transferred to your final exam. Make up tests may occur anytime before the end of the last class (i.e., the make up for midterm 1 may happen *after* midterm 2) and may not be the same format as the original test. Further extensions or accommodation will require you to submit a petition to the Faculty.

**Final Exam: It is your responsibility as a student to ensure that you are available to sit for examinations during the entire exam period.**

- If you miss the final exam for a valid reason **you must request deferred standing.** See [myacademicrecord.students.yorku.ca/deferred-standing](http://myacademicrecord.students.yorku.ca/deferred-standing) for additional information. (Both the *deferred standing agreement* and *attending physician's statement* can be found at this website.)
- To request deferred standing **you must complete a Deferred Standing Agreement Form and submit it along with supporting documentation** to me (T. Da Sylva) within 5 business days of the missed exam. Scanning the forms and emailing them to [bio3120@yorku.ca](mailto:bio3120@yorku.ca) is preferred.
- **Requests submitted after this time will be denied and you must formally petition**
- Doctor's notes are NOT sufficient for missed final exams; **you MUST have your doctor fill out the Attending Physician's Statement** (please make sure you are using the current version form – no other versions will be accepted).
- Please contact me about required documentation if an Attending Physician's Statement does not apply.
- If I approve the deferred standing request the date/time of the deferred exam is at my discretion. Deferred exams take priority over work for other courses. **If you miss the deferred exam you will have to formally petition for further accommodation.**
- If I deny the deferred standing request you must submit a petition. Denied petitions will result in a zero on the final exam.  
See [myacademicrecord.students.yorku.ca/academic-petitions](http://myacademicrecord.students.yorku.ca/academic-petitions) for information regarding academic petitions.
- Religious accommodations must be arranged at least 3 weeks prior to the exam (see general course policies below for guidelines).

**Innate Assignment and Adaptive Assignment:**

These assignments are meant to help you apply and communicate your understanding of the innate and adaptive immune responses. The assignments will overlap in content with the associated midterm (*Innate Assignment* with Midterm 1, *Adaptive Assignment* with Midterm 2) therefore, completing the assignment will also help you study for the midterms. The assignments **will be available for at least a week before the due date** and can be completed on your own. After each midterm you will also be given time to work with others on the associated assignment (though you must ultimately submit your own response) and ask questions. **It will be possible to complete these written responses completely during this class time if you choose to do so.** However,

- Your completed work must be in your own words and must be submitted through Moodle by 10 pm on the same night as the associated midterm.
- Answering these questions (doing this written work) will help you prepare for the midterms. Therefore **extensions, in general will not be granted.** Individuals with extenuating circumstances can contact me via [bio3120@yorku.ca](mailto:bio3120@yorku.ca). See the assignment outline for more details.

**Incomplete/Late Course Work Policies:**

**Extensions on Weekly Activities will not be granted.** *Weekly Activities* are completed through Moodle. They are marked based on participation. All missed submissions will receive a zero grade; no late submissions will be accepted. However the way your *Weekly Activities* grade is calculated **allows you to miss some of the weekly activities without penalty.** Please see the *Weekly Activities* outline on Moodle for more information.

In general, **extensions for any component of the SciComm Project or Immuno & Me assignments will not be granted.** Submission of most components will be online and you are encouraged to plan ahead; do not leave completion to the last minute! Individuals with extenuating circumstances can contact me via [bio3120@yorku.ca](mailto:bio3120@yorku.ca). All late submissions, without permitted extensions, will be penalized as noted in the assignment outline.

## University Policies

### Academic Honesty and Integrity

York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (<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 the student to abide by such standards.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - <http://www.yorku.ca/academicintegrity/>

**Important Note:** Numerous students in Faculty of Science courses have been charged with academic misconduct when materials they uploaded to third party repository sites (e.g. Course Hero, One Class, etc.) were taken and used by unknown students in later offerings of the course. The Faculty's Committee on Examinations and Academic Standards (CEAS) found in these cases that the burden of proof in a charge of aiding and abetting had been met, since the uploading students had chosen to ignore the reasonable likelihood of supporting plagiarism in this manner.

To avoid this risk, students are urged not to upload their work to these sites. Whenever a student submits work obtained through Course Hero or One Class, **the submitting student will be charged with plagiarism and the uploading student will be charged with aiding and abetting.**

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

### Access/Disability

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

Students in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs.

Additional Information:

Counselling & Disability Services - <https://counselling.students.yorku.ca/>

Counselling & Disability Services at Glendon - <https://www.glendon.yorku.ca/counselling/>

York Accessibility Hub - <http://accessibilityhub.info.yorku.ca/>

### Ethics Review Process

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

### Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May),

students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at [http://www.registrar.yorku.ca/pdf/exam\\_accommodation.pdf](http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf) (PDF)

### **Student Conduct in Academic Situations**

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. 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/>