

Department of Biology Course Outline

SC/BIOL 3120 3.00 Immunobiology Winter 2017

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: 210 Bethune

Office hours As posted on Moodle or by appointment

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

Emails must include your full name and student number and have a descriptive subject line. Expect an average response time of 2 business days. Email will not be checked on weekends or holidays.

Schedule

Wednesdays 7-10pm; LAS B

Evaluation

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

Reading & Reflection Activities _____	5%
Group Project (multiple components; final project due March 28 th) _____	15%
Midterm 1 (class time February 8 th) _____	20%
Midterm 2 (class time March 15 th) _____	25%
Cumulative Final Exam (TBA; date and time set by Registrar) _____	35%

Details on test/assignment expectations can be found on Moodle.

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

Important Dates

Midterm 1: February 8th, 2017

Midterm 2: March 15th, 2017

Group Project: multiple components, see assignment outline; major work due March 28th

Final Exam: TBA; date and time set by registrar

Reading & Reflections Activities: There will be multiple activities throughout the term, roughly one every week – two weeks.

Classes Start: Thursday, January 5th, our first class is Wednesday, January 11th

Reading Week: Saturday, February 18th – Friday, February 24th

Drop Date: Friday, March 10th (course does not appear on transcript)

Last Day of Classes: Wednesday, April 5th

Course Withdrawal Period: March 11th – April 5th (course still appears on your transcript)

Exam Period: April 7th – 24th (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 7th Edition*. J. Owen, J. Punt and S. Stranford. W.H. Freeman and Company Publishers

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

You are expected 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.

Readings are meant to prepare you to actively participate in class; you are not expected to understand the material from the textbook alone. **If you are spending more than one hour on each reading before class please speak to me** – you are likely reading too deeply. You should also be revisiting the readings after class.

A draft of textbook readings is below (the order of readings may change as the course progresses):

Class of (remember to read before class)	Topic	Chapters
Jan. 11 th & 18 th	Introduction to the immune system; fundamentals of the innate immune response, including cell signalling	1 – 4; Ch. 3 (pp. 65 – 80 only)*
Jan. 25 th	Innate immune responses; complement pathways	5 & 6
February 1 st	MHC	8
February 8 th	Midterm 1	
February 15 th	Generation of diversity, before antigen encounter, in the adaptive immune system	7 & 3 (pp. 80 – 100)*
March 1 st	B- and T-cell development	9 & 10
March 8 th	B- and T-cell activation; adaptive immune responses	11 – 14*
March 15 th	Midterm 2	
March 22 nd , 29 th , and April 5 th	Clinical Immunology	15 -19

***Note:** Chapters 3 and 4 are not covered in much depth; pay attention to depth of in-class discussions. Chapter 14 contains little new information, instead, summarizing visually and with experimental data the information contained in previous chapters. The end of chapter 14 contains links to the numerous videos mentioned within. For Chapters 3, 4 and 14th it might be best to review only the posted slides (instead of textbook) before class. Entire chapters may not be covered, especially in chapters 3, 4 and 13-19.

Experiential Education and E-Learning

Experiential education: You will gain hands-on skill development in teamwork and scientific communication. You will go through some case studies and 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

Information on 2-stage Testing:

- Numerous educators have used 2-stage tests as a way to turn the assessment process into a learning experience. 2-stage tests involve writing tests both as an individual and in a group. When your group disagrees on an answer you get to discuss the subject right away perhaps correcting your own misconceptions before you leave the exam room. We will use 2-stage testing for our midterms and final exam.
- You will arrive for your test and write the 1st stage - individual test; this will be like a

traditional test. You will hand in your scantron and test booklet when you are done but remain seated until the end of the 1st stage. Once everyone's tests have been collected you will assemble into groups of four.

- In your groups you will be given another test booklet and scantrons to begin the 2nd stage (group test) - this test will be similar to the one you just completed by yourself. You will now have additional time to complete the test again in groups. You will not be allowed to write the group test by yourself or in groups of less or more than 4 people (unless unavoidable due to class numbers).
- Your mark will be calculated as follows - 85% individual score plus 15% group score. However if your individual score is higher than your group score you will simply have your individual score (100%).
- Students who normally write with Alternate Exams have been able to join the class for the 2nd stage (group). However, if you have any concerns about the testing format or joining the main room please let me know and we can discuss alternative accommodation.

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 be given in a 2.5 to 3-hour block 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 or work conflicts.
- 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 a documented **urgent reason** for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by appropriate supporting documentation (e.g., attending physician's statement).

- Missing a midterm/exam due to weather will be excused ONLY if the University closes/cancels classes. In all other cases, **it is YOUR responsibility to get to class**

on time. Transit and/or traffic issues are never an excuse to miss exams. Plan to be at exams early.

- You **MUST** contact (email) your course director (bio3120@yorku.ca) **within TWO days (48hours)** of missing the test (the sooner the better).
- Valid and appropriately detailed documentation supporting the events (typically medical or emergency related) preventing your attendance must be submitted to 108 Farquharson (office temporarily relocated to 102 LSB), **within ONE week of the missed test.**
- Religious accommodations must be arranged at least 3 weeks prior to the midterm/exam (see general course policies below for guidelines).
- **IMPORTANT:** If you miss a test due to illness **you MUST see a Physician within 24 hours of the missed test – normally on the same day** - so that the Physician can confirm you are too ill to attend the test based on medical examination. Valid documentation for medical situations consists of a current “Attending Physician’s Statement” Only the current form will be accepted. If you do not use the current form you will be asked to return to your physician to have the correct form filled in. A note that simply says you were seen in the clinic will not be accepted. Any documentation should cover the date of the missed test.
- Contact your instructor to determine the appropriate documentation required for other circumstances.
- **If appropriate documentation is NOT provided within ONE week, a zero will be assigned on the missed test.**
- **NOT all situations will be accommodated**, meaning that a zero will be assigned on the missed test.

Midterms: **There will be no make-up midterms.** Students with acceptable documentation will have the weight of the midterm added to their final exam. Further extensions or accommodation will require students to submit a formal 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 (e.g. medical emergency, death of an immediate family member) **you must request deferred standing and notify the course director within 48 hours of missing the exam.**
 - See registrar.yorku.ca/exams/deferred for additional information.
- To request deferred standing **you must complete and submit a Deferred Standing Agreement Form** (see: registrar.yorku.ca/exams/deferred) **along with supporting documentation** to your Course Director **within ONE week of the missed exam.**
 - **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 of the Attending Physician’s statement form – no other versions will be accepted).
- If the Course Director approves the deferred standing request the date and time of the deferred exam is at the discretion of the course director. Deferred exams take priority over work for other courses. **If you miss the deferred exam will have to formally petition.**
- If the Course Director denies the deferred standing request you must submit a petition to the Faculty through the Office of the Registrar. Denied petitions will

result in a zero on the final exam. See <https://registrar.yorku.ca/petitions> for information regarding academic petitions.

Incomplete/Late Course Work Policies:

Extensions on *Reading & Reflection Activities* **will not be granted.**

- Reading & Reflection Activities will be submitted through Moodle and you will be given ample time to complete them. All missed submissions will receive a zero grade; no late submissions will be accepted. There will be ~7-10 activities. Your lowest two reading activities will be dropped and your grade will be calculated from the remaining Reading Activities plus your 2 reflections activities. **This allows you to miss some assignments without penalty.**

In general, extensions for any component of the *Group Project* assignment **will not be granted.** Submissions of most components will be online and groups are encouraged to plan ahead and not leave completion to the last minute. Individuals or groups with extenuating circumstances can contact me via bio3120@yorku.ca.

- All late submissions will be penalized as noted in the assignment outline.
- The major written project components (Progress report, Pamphlet/Factsheet, and Annotated Bibliography) will not be accepted more than 48 hours after the deadline. Submissions received more than 48 hours late will receive a zero.

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/>

Access/Disability

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

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

Additional information is available at the following websites:

Counselling & Disability Services - <http://cds.info.yorku.ca/>

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

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 (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/>