

## Biol 4011 FA – Fundamentals of Immunology (2020FS)

*Time and Place:* 5:30 pm to 7:00 pm, Tuesdays and Thursdays online via zoom; 1<sup>st</sup> class will be held on 8 September 2020.

*Course Instructor:* Dr. Ingeborg Zehbe, Research Chair (email: izehbe@lakeheadu.ca).

LU Office: CB 4018 (not currently staffed); Office hours: per request and via zoom; Zehbe Research Group website: zehbelab.com.

*Graduate Assistant:* MSc Candidate Ashley Faulkner; during the semester, please direct inquiries to [avfaulkn@lakeheadu.ca](mailto:avfaulkn@lakeheadu.ca); if these cannot be resolved then please request a time with Dr. Zehbe (izehbe@lakeheadu.ca).

*Textbook:* Janeway, Immunobiology (9<sup>th</sup> edition, 2016, Garland Science); please make sure to get the correct edition. Any edition prior to the 9<sup>th</sup> one is not adequate!

Date & Time	Lecturer / Presenter	Topic
Sept. 8/10	Dr. Ingeborg Zehbe & Ashley Faulkner	Course Introduction: marking scheme, assignments & Overview of immunology [Ch.1]
Sept. 15/17	Dr. Ingeborg Zehbe	The innate immune system: First lines of defense [Ch. 2, 3 (parts)]
Sept. 22/24	Dr. Ingeborg Zehbe	Induction of innate immunity [Ch. 3]
Sept. 29/Oct. 1	Drs Ingeborg Zehbe and Guillem Dayer & Ashley Faulkner	<u>Assignment 1:</u> Journal Club based on Immunology Methods A: Pre-seminar & Journal Article Discussion
Oct. 6/8	Drs Guillem Dayer & Ingeborg Zehbe	Global immune globulin structure and antibodies & Evolution of immunology
<b>Oct. 13/15</b>	<b>Reading week</b>	<b>N/A</b>
<b>Oct. 20/22</b>	Dr. Ingeborg Zehbe & Ashley Faulkner Question time for Mid-term Exam (optional)	<b>Mid-term Exam: Material from first half of the course</b> (exclusive of what was covered by assignment 1)
Oct. 27/29	Dr. Ingeborg Zehbe	Human leukocyte antigen (HLA): B and T lymphocyte development & receptors [Chs 6, 8]
Nov. 3/5	Dr. Ingeborg Zehbe	T cell-mediated immunity & the humoral immune response [Chs 9, 10]
Nov. 10/12	Dr. Ingeborg Zehbe	Integrated dynamics of innate and adaptive immunity & the mucosal immune system [Chs 11, 12]
Nov. 17/19	Drs Ingeborg Zehbe & Guillem Dayer & Ashley Faulkner	<u>Assignment 2:</u> Journal Club based on Immunology Methods B: Pre-seminar & Journal Article Discussion
Nov. 24/26	Dr. Ingeborg Zehbe & Ashley Faulkner	Immune tolerance, immune deficiency and autoimmunity & Debate (vaccination)

Dec. 1	Dr. Ingeborg Zehbe & Ashley Faulkner	Question time for Final Exam (optional)
<b>TBD</b>	<b>Final Exam</b>	<b>Material from second half of the course</b> (exclusive of what was covered by assignment 2)

### Course rationale

Focus on fundamental principles of basic immunology from first engagement of innate immunity to the generation of the adaptive immune response with strong focus on vertebrates (humans). No previous knowledge in immunology is necessary. Some insight in basic genetics and signalling pathways with their receptors is necessary.

### Course objective

Obtain knowledge of immunological principles related to:

- Cell surface molecules and receptors on cells of the immune system
- How immune cells develop and acquire the ability to recognize antigens
- How they interact to defend the organism against microbes
- How they malfunction in autoimmunity & immunodeficiency

### Lecture Structure

During the semester, lectures will be structured as formal lectures, preparatory seminars and group discussions.

### Mark Breakdown

Mid-term exam	25%
Assignments (2)	30% (2 x 15%)
Final exam	35%
Quizzes & Debate	10%

### Assignments (A1 and A2)

Students will be given two assignments during the course. A1 – Immunology Methods, which will include a preparatory/introductory seminar (Tuesday) followed by a quiz the same week (Thursday). A2 – Journal Club, which will include a preparatory seminar followed by moderated small-group journal article discussions.

### Mid-term Exam

To be written in class and will be based off the material covered in the first half of the course.

### Final Exam

To be written during the examination period and will be based off the material covered in the second half of the course.

## CODE OF CONDUCT

- It is essential to attend each lecture to get most out of this course and it is estimated to work at least 6 hours weekly.
- Check your Desire2Learn/MyCourseLink page on a regular basis to obtain posted information, documents and journal articles.
- Study regularly by reading the suggested chapters in your text book.
- If you have difficulties accessing your online course, please contact [helpdesk@lakeheadu.ca](mailto:helpdesk@lakeheadu.ca).
- In the event that you are sick for a quiz or an exam, a medical note (the original) is required to have this test or exam rescheduled.
- No extra work will be allowed to bump up a mark.
- Academic dishonesty: Please, note that academic dishonesty (such as plagiarism, cheating, and impersonation) is considered a serious academic offense. For more information, please go to:  
<http://policies.lakeheadu.ca/policy.php?pid=60>  
<http://www.lakeheadu.ca/current-students/rights-and-responsibilities>  
<https://www.lakeheadu.ca/current-students/student-success-centre/skills-for-success-seminars/thunder-bay/node/45182>
- Use email to schedule appointments with your instructor or for questions related to the course content. **Emails will only be answered during official office hours of Lakehead University.**
- Disrespectful comments during Zoom classroom exchanges between students or between students and the professor, as well as comments of a sexist, racist, or homophobic nature or against any disabilities will not be tolerated.
- Learners are asked to behave in the discussions in a professional and civil manner. If you are in doubt, do not post it! Instructors reserve the right to remove any postings deemed inappropriate, unprofessional, or otherwise distracting from the course.

### • **Copyright Compliance:**

Students understand and agree that all instructional, reference, and administrative materials to which students are given access in this course, whether they consist of text, still or kinetic images, or sound, whether they are in digital or hard copy formats, and in whatever media they are offered, are protected in their entirety by copyright, and that to comply with this copyright and the law.

(a) Students may access and download the course materials only for their own personal and non-commercial use for this course; and (b) Students are not permitted to download, copy, store (in any medium), forward or share, transmit, broadcast, show, post or play in public, adapt, or change in any way any text, image, or sound component of the course materials for any other purpose whatsoever except as expressly authorized, and only to the extent authorized, in writing, by the course instructor. Students further understand and agree that, if they infringe the copyright

of the course materials in any way, they may be prosecuted under the Lakehead University Student Code of Conduct – Academic Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviours that support the University’s academic values.

- **Exam/Assignment Integrity**

Students understand and agree that:

(a) Unless otherwise allowed by the course instructor, they must complete the assignments in this course without the assistance of anyone else.

(b) Unless otherwise allowed by the course instructor, they must not access any sources or materials (in print, online, or in any other way) to complete any course exam. They further understand and agree that, if they violate either of these two rules, or if they provide any false or misleading information about their completion of course assignments or exams, they may be prosecuted under the Lakehead University Student Code of Conduct – Academic Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviours that support the University’s academic values.

**\*\*\* Disclaimer and Notice Regarding Recording \*\*\***

In the context of remote instruction and participation, video and audio recordings of class activities may occasionally be made to ensure students' and instructors' easy and comprehensive access to those discussions.

Any such recordings are confidential and are intended only for the use of the course students and instructors. They may otherwise not be used or disclosed.

During recording, to protect others' privacy, each student should ensure that no one else is present in the location where they are being recorded without that non-student's consent. The recordings are made under the authority of sections 3 and 14 of The Lakehead University Act, 1965.

Questions or concerns about the recordings may be directed to your instructor Dr. Ingeborg Zehbe.

Students will always be notified before the instructor begins recording. Out of respect for your peers’ privacy and learning experience, please do not take unauthorized screen shots or recordings during class.

- Student Accessibility Services:

<https://www.lakeheadu.ca/faculty-and-staff/departments/services/sas>

- Indigenous Services:

<https://www.lakeheadu.ca/current-students/student-services/tb/aboriginal-services>

- Counselling Centre:

<https://www.lakeheadu.ca/current-students/student-health-and-counselling-centre>

- Human Rights and Equity Services:

<https://www.lakeheadu.ca/faculty-and-staff/departments/services/human-rights-and-equity>