Biol 4011 FA – Fundamentals of Immunology (tentative)

Time and Place: 5:30 pm to 7:00 pm, Mondays and Wednesdays

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

LU Office: CB 4018; Office hours: Wednesdays, 4—5 pm; our group's website: zehbelab.com

Graduate Assistant: Paridhi Singh; during the semester, please direct inquiries to psingh31@lakeheadu.ca; Paridhi will be present during all lectures & seminars

Textbook: Janeway, Immunobiology (9th edition, 2016, Garland Science)

Date & Time	Lecturer / Presenter	Topic
Sept. 9/11	Dr. Ingeborg Zehbe & Paridhi Singh	Course Introduction: marking scheme, assignments & Overview of immunology [Ch.1]
Sept. 16/18	Dr. Ingeborg Zehbe	The innate immune system: First lines of defense [Ch. 2]
Sept. 23/25	Dr. Ingeborg Zehbe & Paridhi Singh	Assignment 1: Immunology Methods: Pre-seminar & Quiz
Sept. 30/Oct. 2	Dr. Ingeborg Zehbe	Induction of innate immunity [Ch. 3]
Oct. 7/9	Drs Guillem Dayer & Ingeborg Zehbe	Evolution of immunology & Global immune globulin structure and antibodies
Oct. 14/16	***Reading week***	***N/A***
Oct. 21/23	Dr. Ingeborg Zehbe & Paridhi Singh Question time for Mid-term Exam (optional)	**Mid-term Exam: Material from first half of the course** (exclusive of what was covered by assignment 1)
Oct. 28/30	Dr. Ingeborg Zehbe	Human leukocyte antigen (HLA): B and T lymphocyte development & receptors [Chs 6, 8]
Nov. 4/6	Dr. Ingeborg Zehbe	T cell-mediated immunity & the humoral immune response [Chs 9, 10]
Nov. 11/13	Dr. Ingeborg Zehbe	Integrated dynamics of innate and adaptive immunity & the mucosal immune system [Chs 11, 12]
Nov. 18/17	Drs Ingeborg Zehbe & Guillem Dayer & Paridhi Singh	Assignment 2: Journal Club: Pre-seminar & Journal Article Discussion
Nov. 25/27	Drs Ingeborg Zehbe & Guillem Dayer	Immune tolerance, immune deficiency and autoimmunity & Debate on an agreed topic
Dec. 2	Dr. Ingeborg Zehbe & Paridhi Singh	Question time for Final Exam (optional)
TBD	**Final Exam**	**Material from second half of the course** (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%
Participation	10%

Assignments (A1 and A2)

Students will be given two assignments during the course. A1 – Immunology Methods, which will include a preparatory/introductory seminar (Monday) followed by a quiz the same week (Wednesday). 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.