

BIOL 462/BL: Immunology

BIOL 633/BL: Advanced Immunology

3 credits

Winter 2022 (Thursday 5:45-8:15pm) CC-305

Location: Blended format

Instructor: Dr. Andrew Wieczorek

Email: Andrew.wieczorek@concordia.ca

Office: SP375.35

Tel: 848-2424 ext. 3395

Office hours: TBA in first week of class

Pre-requisites: BIOL 266, 364, 367.

COURSE DESCRIPTION

The role of the immune system in maintenance of body homeostasis is presented with particular reference to cells and tissues of the immune system, their organization as well as their structural and functional relationships. Topics include: maturation and differentiation of B and T lymphocytes; structure and properties of antibodies; immune responses to antigens; genetic aspects of anti-body synthesis; immunological considerations in AIDS, cancer, and autoimmune diseases. Lectures and seminars.

COURSE OBJECTIVES

This course is designed to provide students with a background in cells, tissues, and organs of the immune system as well as mechanisms underlying immune function at the molecular level. Techniques for detection of antibodies and antigens as well as vaccine development are discussed. Students will develop an ability to work in groups in the delivery of a presentation which summarizes and critically analyzes an original research article on immunology. Students will also master skills in constructing a literature review on scientifically relevant content regarding the field of immunology.

COURSE SCHEDULE

1. Introduction to the immune system
2. Cells, tissues, and organs of the immune system
3. Receptors and Signalling
4. Innate immunity
5. Complement system
6. Organization of receptor genes
7. Major Histocompatibility complexes and antigen presentation
8. T-cell and B-cell development
9. T-cell and B-cell Responses
10. Immune Response
11. Scientific Methods
12. Hypersensitivity and autoimmunity
13. Immunodeficiencies and cancers
14. Vaccines
15. *Student Presentations*

COURSE RESOURCES

Course notes, tutorials, and Powerpoint presentations will be available on MOODLE. For online content, pre-recorded presentations of the material will be available at the start of each online session on Yuja (see link on the course MOODLE page). Students are expected to watch the presentations, take notes, write down questions, and participate in a discussion and question & answer period

Recommended Textbook: Kuby Immunology, 8th edition. Owens, J. et al. MacMillan Publishing

Attendance at all lectures is **very strongly** encouraged, and students are expected to **participate fully** in all activities. Students who miss in-class evaluations or assignments will receive a grade of zero for that assessment. Please inform the instructor **at the beginning of the term** of any difficulties, physical or learning disabilities that you may have or as soon as possible in the case of an injury, so that you can be accommodated.

A discussion forum will be made available for students to post questions and answers and will remain open for the duration of the semester.

WEEKLY SCHEDULE:

In person dates:

Jan 13, 27

Feb 10, 24

March 10, 24,

April 7

GRADING

1. Midterm (Feb 24th) 25%
2. Presentation 10%
3. Academic Literature Review 10%
4. Mini-assignments, quizzes, in-class assignments, 15%
5. Final exam (cumulative) 40%

Total: 100%

Grading scheme: A+=90<; A=85-89; A-=80-84; B+=77-79; B=74-76; B-=70-73; C+=67-69; C=64-66; C-=60-63; D+=57-59; D=54-56; D-=50-53; F=<50

The mid-term test and the final exam will comprise multiple choice answer questions and questions requiring short essay type answers.

Late submission of the mini-research assignment or academic literature review will result in a 10% deduction, followed by a subsequent grade of 0 if not handed in by 24 hours after the deadline

Student Presentations

Each group of 4-5 students will give a 20 minute presentation on a single original research article. Presentations should include: the background behind the research, important figures demonstrating findings, and a conclusion. 5 minutes will be reserved for questions from peers.

Student Academic Literature Review

Each student will be required to pick a topic of their choosing within the realm of immunology and write a 5-page double spaced (8 pages for BIOL633 students) literature review on the topic. A minimum of 6 peer-reviewed scientific original research articles should be used as the basis for the information discussed in the review.

DISCLAIMER (UNIVERSITY)

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

BEHAVIOUR

All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications. Concordia students are subject to the Code of Rights and Responsibilities which applies both when students are physically and virtually engaged in any University activity, including classes, seminars, meetings, etc. Students engaged in University activities must respect this Code when engaging with any members of the Concordia community, including faculty, staff, and students, whether such interactions are verbal or in writing, face to face or online/virtual. Failing to comply with the Code may result in charges and sanctions, as outlined in the Code.

INTELLECTUAL PROPERTY

Content belonging to instructors shared in online courses, including, but not limited to, online lectures, course notes, and video recordings of classes remain the intellectual property of the faculty member. It may not be distributed, published or broadcast, in whole or in part, without the express permission of the faculty member. Students are also forbidden to use their own means of recording any elements of an online class or lecture without express permission of the instructor. Any unauthorized sharing of course content may constitute a breach of the Academic Code of Conduct and/or the Code of Rights and Responsibilities. As specified in the Policy on Intellectual Property, the University does not claim any ownership of or interest in any student IP. All university members retain copyright over their work.

ETHICS

The most common offense under the Academic Code of Conduct is plagiarism which the Code defines as **"the presentation of the work of another person as one's own or without proper acknowledgement"** (Article 16a). This could be material copied word for word from books, journals, internet sites, professor's course notes, etc. It could be material that is paraphrased but closely resembles the original source. It could be the work of a fellow student, for example, an answer on a quiz, data for a lab report, a paper or assignment completed by another student. It might be a paper purchased through one of the many available sources. Plagiarism does not refer to words alone - it can also refer to copying images, graphs, tables, and ideas. "Presentation" is not limited to written work. It also includes oral presentations, computer assignments and artistic works. If you translate the work of another person into French or English and do not cite the source, this is also plagiarism. If you cite your own work without the correct citation, this too is plagiarism.

Do not copy, paraphrase or translate anything from anywhere without saying where you obtained it! (Source: *The Academic Integrity Website: <http://provost.concordia.ca/academicintegrity/plagiarism/>*) This information is an adaptation of the material produced by the Code Administrator of the Faculty of Arts and Science at Concordia University
Source: The Academic Integrity Website: <http://provost.concordia.ca/academicintegrity/>

STUDENT RESOURCES

1. Access Centre for Students with Disabilities:
concordia.ca/students/accessibility
2. Student Success Centre: concordia.ca/students/success
3. Name of the Department's Academic Advisor
4. Counselling and Psychological Services:
concordia.ca/students/counselling-life-skills
5. Concordia Library Citation and Style Guides:
<https://library.concordia.ca/help/citing>
6. Health Services: concordia.ca/students/health
7. Financial Aid and Awards: concordia.ca/offices/faao
8. Academic Integrity: concordia.ca/students/academic-integrity
9. Dean of Students Office: concordia.ca/offices/dean-students
10. International Students Office:
concordia.ca/students/international
11. Student Hub: concordia.ca/students
12. Sexual Assault Resource Centre:
concordia.ca/students/sexual-assault
13. As a Concordia student, you are a member of the Concordia Student Union and have many resources available to you including:
 - a. HOJO (Off Campus Housing and Job Bank):
csu.qc.ca/services/housing-and-job-bank-hojo/
 - b. CSU Advocacy Centre: csu.qc.ca/services/advocacy-centre/
14. Aboriginal Student Resource Centre:
concordia.ca/students/aboriginalhttp://www.concordia.ca/info/currentstudents/student-services/