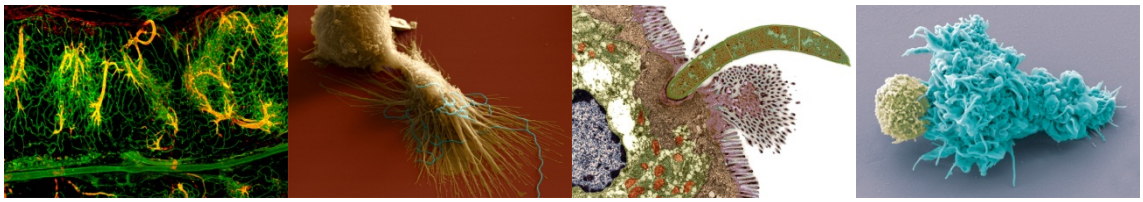
BIOC39H – Immunology



http://www.cell.com/cell_picture_show-immunology

Winter 2015
Course Syllabus
Dr. Bebhinn Treanor

Immunology is a discipline that overlaps with many other biological disciplines including physiology, cell and molecular biology, genetics, biochemistry, and microbiology, parasitology, and virology. The concepts and methods of these disciplines are fundamental to the study of the immune system and as such, this course aims to provide students with an appreciation of the interdisciplinary relationship between these subjects. This course is designed to introduce the molecular and cellular basis of the immune system. Topics covered include cells and tissues of the innate and adaptive immune system, self versus non-self recognition, development of B and T cells, T cell activation and the role of effector cells, B cell activation and the structure and function of immunoglobulins, the role of complement, and antigen presentation. Special emphasis will be placed on the human immune response in health and disease and will cover topics including the immune response to infectious disease, inherited and acquired immunodeficiencies, autoimmunity, and tumour immunology.

Prerequisites: [BIOB10H3 & BIOB11H3] or BIOB10Y3
Exclusions: IMM334Y, IMM335Y

Instructor: Bebhinn Treanor
Office Hours: Tuesday 3-5pm
Office Location: SW559
Email: bioc39h@gmail.com

Lectures: Tuesdays 1 – 2 pm SY110
Thursdays 1 – 2 pm SY110

Web Option will be offered for this course, however lecture attendance is still recommended. If lecture attendance falls below an acceptable level the web option will be cancelled.

Blackboard Resources:

- WebOption Lecturecast
- outline of PowerPoint presentations will be uploaded to Blackboard prior to lecture (~12-24 hours)
    - will NOT contain all content of lectures (only major points)
    - students should print and bring outlines to class to take additional notes

Textbook: "The Immune System" 3rd Ed. Peter Parham.
Published by Garland Science

Exams: 2 Exams: Midterm exam worth 40%
-multiple choice, matching, diagrams, fill-in, short answer
Final exam worth 60%
-multiple choice, matching, diagrams, fill-in, short answer
**** The final exam is cumulative but will be weighted more on lectures 13 – 24.**

Course email: bioc39h@gmail.com

Course email policy:

- Your email message must include in the subject line the course identifier and a concise and clear statement of purpose (e.g. BIOC39H: appointment); the body should contain your full name and student number and all emails MUST be sent from your UTSC or UTORONTO email address. Emails from all other addresses will not be responded to.
- I will respond to legitimate email inquiries within 48 hours (in most instances) during the workweek (does NOT apply to weekends)
- Email should NOT be used as an alternative to office hours or as a mechanism to receive private tutorials

Missed Exams
There will be a single make-up for the midterm. Students who will be unable to attend the midterm for religious reasons must notify the instructor as soon as possible after the exam date is announced. Students who are unable to attend the midterm due to illness must notify the instructor by course email within 3 working days of the test and arrange to present a completed UTSC medical certificate (available via http://www.utsc.utoronto.ca/~registrar/general/downloads) which

confirms their illness at the time of the exam. Medical certificates will be verified. The date of the make-up exam will be announced on blackboard and it is the SOLE RESPONSIBILITY of the affected student to ensure they know the date of the make-up exam. Students who miss a midterm with no acceptable, documented excuse received within 3 working days of the test will receive zero.

*******Students who miss the final exam MUST petition the Registrar to write a deferred exam. Please refer to registrar's website for policy and consequences. http://www.utsc.utoronto.ca/~registrar/current_students/deferred_exams)

Accessibility Needs:
Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the Access*Ability* Services office as soon as possible. I will work with you and Access*Ability* Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC Access*Ability* Services staff are located in S302 and are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. Please ring (416) 287-7560 or email ability@utsc.utoronto.ca.

Academic Integrity:
The University of Toronto is committed to the highest standards of academic integrity. "Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves." Consequently, the University treats cases of cheating and plagiarism very seriously. Please refer to The University of Toronto's Code of Behaviour on Academic Matters, which outlines what constitutes an academic offense (e.g. using or possessing unauthorized aids, including cell phones; misrepresenting your identity, looking at someone else's answers during an exam) and the policies and procedures for addressing academic offenses.
(http://www.governingcouncil.utoronto.ca/policies/behaveac.htm
Please also consult:
http://www.utoronto.ca/academicintegrity/resourcesforstudents.html

DRAFT BIOC39 Lecture Content and Assigned Readings **(subject to change**)

DATE	TOPIC	CHAPTER	Relevant Pages
Jan. 6	The Immune System & Natural Barriers to Infection	1.1 – 1.6	Pg. 1 – 12
Jan. 8	Cells of the Hematopoietic System	1.7 – 1.8	Pg. 12 – 17 Flow cytometry reading
Jan. 13	Tissues of the Hematopoietic System	1.8 – 1.11	Pg. 17 – 23
Jan. 15	Innate Immunity I	2.1 – 2.9	pg. 31 – 44
Jan. 20	Innate Immunity II	2.10 – 2.22	pg. 44 – 67
Jan. 22	Principles of Adaptive Immunity	3.1 – 3.8, 3.11 – 3.16	Pg. 71 – 80, 81 - 90
Jan. 27	Antibody Structure	4.1 – 4.6	pg. 96 – 105
Jan. 29	Generation of Ig diversity	4.7 – 4.16	pg. 105 – 121
Feb. 3	B cell development	6.1 – 6.7, fig.6.13, 6.11 – 6.14	pg. 160 – 168, 174-178
Feb. 5	B cell activation	9.1 – 9.10	pg. 249 – 262
Feb. 10	Antibody effector functions	9.11 – 9.25	pg. 262 – 286
Feb. 12	Immunological Memory & Vaccination	10.12 – 10.19, 14.1 – 14.10	pg. 303 – 311, 437 -452
MIDTERM EXAM	Date and Time TBA		
Feb. 24	Antigen Recognition by T cells	5.1 – 5.11	pg. 125 – 139
Feb. 26	Antigen Recognition by T cells	5.12 – 5.22	pg. 140 – 155
Mar. 3	T cell development	7.1 – 7.15	pg. 187 – 206
Mar.5	T cell activation	8.1 – 8.11	pg. 212 – 230
Mar. 10	T cell effector functions	8.12 – 8.19, 10.20 – 10.22	pg. 231 – 245, 311 – 314
Mar. 12	Mucosal Immunology	10.1 – 10.11	pg. 290 – 302
Mar. 17	Subversion of the immune system	11.1 – 11.6	pg. 329 – 336

Mar. 19	Inherited & Acquired Immunodeficiency	11.11 – 12, 11.14 – 15, 11.17, 11.18 – 11.25	pg. 341 – 343, 345 – 348, 349 – 350, 351 – 361
Mar. 24	Over-reactions of the immune system	12.1, 12.2, 12.4, 12.7, 12.11-12.16, 12.18, 12.19, 12.22, 12.23	pg. 365 – 368, 370-371, 374-376, 379-385, 387-390, 392-397
Mar. 26	Autoimmune Diseases	13.1 – 3.16, 3.23	pg. 403 – 420, 428 - 430
Mar. 31	Transplantation Immunology	15.1 – 15.4, 15.6, 15.9 – 15.20	Pg. 455 – 459, 460 – 461, 462 - 478
Apr. 2	Tumour Immunology	Chapter 16	pg. 490 – 505
FINAL EXAM	Date and Time TBA		