MBIO 4010/4020 IMMUNOLOGY January-April 2016
Instructor: Dr. Deb Court
Office: 301A Buller Bldg (in the back of Lab 301)
Phone / e-mail: 474-8263 / Deborah.Court@umanitoba.ca
Web Site: UMLearn https://universityofmanitoba.desire2learn.com/d2l/login
Office Hours: Mon 1:30-3:30 p.m. (otherwise email to make an appointment)
Laboratory Instructor: Dr. D. Rivers 414B Buller

Textbooks: There is no required textbook, but there is an optional book available in paper format and as an e-book: Kuby Immunology (7th Ed, by Owen et al. or 6th Ed. by Kindt et al. W.H. Freeman & Co. publishers). We will not be using their “Immunoportal”, so don’t buy it!
Other books are also useful, such as Immunology - A Short Course (5th Ed.) Benjamini et al.

TOPICS (Chapters Based on Kuby Immunology 7th Ed.)
1. Introduction / Review innate vs acquired immunity (Ch.1 and 5)
2. Antibodies as Tools (Ch.6)
3. Cells and organs involved in the immune response (Ch.20)
4. Antigens (Ch.4)
5. HIV and AIDS - brief overview from an immunological perspective (Ch.18 and review papers)
6. Immunoglobulins (Ch.3)
7. Immunoglobulin Genes (Ch.7)
8. T Cell Receptors - structure and genetics (Ch.3 and 7)
9. Major Histocompatibility Complex - MHC structure and genetics (Ch.8)
10. Cytokines (Ch.4)
11. B and T Cell development and activation (Ch.11 and 12)
12. Autoimmune disease – mechanisms and immunological approaches to treatment (Ch.16 and review papers)
13. Allergy (Ch.15 and review papers)
Guest lectures 2 or 3: from members of the Department of Immunology

Assessment for final grade in the course:

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<th>4010</th>
<th>4020</th>
<th>Date</th>
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<tbody>
<tr>
<td>Laboratory</td>
<td>20%</td>
<td>n/a</td>
<td>Tues., Feb. 16 (by 10:00 pm; on UMLearn)</td>
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<tr>
<td>Assignment 1 (4020)</td>
<td>n/a</td>
<td>4%</td>
<td>Wed., Feb 24 (10:00 am; in filing cabinet outside 301)</td>
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<tr>
<td>Assignment 2 (4020)</td>
<td>n/a</td>
<td>6%</td>
<td>Fri., Mar. 11 (by 10:00 pm; on UMLearn)</td>
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<td>Assignment (all)</td>
<td>5%</td>
<td>5%</td>
<td>Thurs., Feb. 4 (part of class)</td>
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<td>Short quiz (all)</td>
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<td>Thurs. Mar. 3 (whole class)</td>
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<td>In class test (all)</td>
<td>20%</td>
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<td>Final Exam</td>
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<td>(VW date – March 18)</td>
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There are no deferred in class tests/quizzes - if you miss the in-class event, the marks will be added to the final exam (no note required). Marks for missed assignments will not be added to the final exam without written documentation for a valid reason. These are available at the beginning of the semester so plan accordingly.

Academic dishonesty guidelines are stated in your calendar regarding University policy with respect to academic dishonesty (particularly plagiarism and cheating) and behaviour and absence from final exams. The Faculty of Science web page has detailed information (http://umanitoba.ca/faculties/science/undergrad/resources/webdisciplinedocuments.html). Please read and follow these guidelines, and ask if you have any questions.
Assignment for all MBIO 4010 and 4020 students. 5 marks 2016

Due: Fri., March 11 (by 10:00 pm; on UMLearn). Submit the assignment as a Word document in the drop box for the assignment on UMLearn.

Your file name must be in the format LastnameInitial (for example CourtD.docx).

The purpose of this assignment is to give you an opportunity to research an area of immunology that interests you. The topic could include a disease with an immunological component (autoimmune disease, allergy, cancer), a new immunotherapy or a new vaccine strategy. If you have another interest, please ask.

For the topic of your choice, indicate the following. Note that the information required will depend on your topic and the aspects that interest you.

i) Introduction: to the disease or allergy and its general symptoms, or to the therapy (1 mark)

ii) The key immunological cells or molecules: that cause the disease or are targeted in the disease process or are the targets of vaccines or therapies (1 mark)

iii) Current research into an immunotherapy or vaccine strategy or cause of disease etc. This includes strategies that are being tested in lab animals or cell culture, as long as they relate to the immune system (1 mark)

iv) The reference(s): for all of the material provided, in the format used by the Journal of Immunology (look at a paper from this journal, or in its “information for authors” on the journal website). The references for parts i) and ii) can include one textbook or a review paper; for part iii) it must be a research paper published in the last two years (2014 to 2016). Papers are accessible via PubMed, through the University of Manitoba libraries. http://proxy2.lib.umanitoba.ca/login?url=http://www.ncbi.nlm.nih.gov/entrez/. Note that research papers must describe new work, and usually have sections called “materials and methods” or “experimental methods” and do not have the word “review” in their PubMed description, in the title, or anywhere in the abstract. (1 mark)

One paper may be sufficient for all three parts. Journal articles available online are acceptable, but they must be referenced as journal articles. Websites like Wikipedia or the Canadian Cancer Society are not suitable references for this assignment.

Use two sentences for each of parts i), ii) and iii) – a total of six, well-written (1 mark) sentences in one paragraph. Obviously it will be a very short document, so you cannot possibly cover everything. Try to hit the key points, and make a short story that flows.

Possible topics/diseases

Immunodeficiency diseases – ex. HIV
Autoimmune diseases – ex. rheumatoid arthritis, MS, Graves’ Disease, lupus
Cancers of the immune system – ex. leukemia
Allergies – ex. hayfever, peanut allergy
Transplant rejection – kidney, liver

Immunotherapy means modifying the immune system to treat the disease. Examples of immunotherapies include antibody-based treatments, or treatments with cytokines/interferon/interleukins or with dendritic cells for cancer or autoimmune disease.

Vaccine strategies may be for prevention or treatment of the disease (ex. Ebola or HIV).