IMM430H1/IMM1430H: "Clinical Immunology"

I. **Course Coordinator:** Dr. Stuart Berger, Stuart.Berger@utoronto.ca
Office hours are available upon request.

II. Description: This course will address the underlying pathogenesis as well as highlight the challenges of treating or preventing immune-related conditions such as autoimmunity, cancer, viral infection and transplantation and graft rejection. Some lectures will address the cellular pathogenesis of autoimmune diseases such as Multiple sclerosis and Systemic Lupus Erythematosus. Other lectures will overview the role of the immune system in whole body metabolism and the role of the microbiome in immunity and disease.

III. Time & Location: Tuesdays 3-5 pm MSB 2172

IV. Marking Scheme (will differ for students in IMM430 vs. IMMI430)

Undergraduate Students (IMM430H1):
25% core writing assignment, 40% midterm exam, 35% final exam.

Graduate Students (IMM1430H):
20% core writing assignment, 15% graduate writing assignment, 35% midterm exam, 30% final exam.

V. Lecture Format: 60-90 min lecture. Each lecture will be provided by a different lecturer whose research specialty is in the area of the material. The lecture notes may or may not be provided by the lecturer (at his/her discretion). Be prepared to take notes in class.

VI. Exams: The midterm and final will both consist of short-answer questions based entirely on the lecture material. The midterm and final will be the same for undergraduate and graduate students. The midterm will cover material from the first six lectures. The final exam will be based only on material covered after the midterm.

VII. Text: Lecture notes and notes taken in class. Notes may or may not be posted on Quercus prior to the lecture, depending on the lecturer's preference. It is your responsibility to attend lectures and to make notes based upon the class material. Most lecturers permit voice recorders.

VIII. Marks: Marks will also be uploaded on Quercus. To access the course materials, go to the following website https://q.utoronto.ca/ and login with your UTORid and password. Course materials can be accessed under IMM430H1 or IMM1430H.

IX. Missed Test Policy: If you miss the midterm, you will have the opportunity to write a make-up exam (held one week after the scheduled mid-term, in the time slot immediately after class). You will have to have a valid reason and provide appropriate supportive documentation to write the make-up. If you cannot make this midterm (are still sick), you will still have to provide appropriate documentation and will be required to write a cumulative final exam. Students who miss the final exam for a valid reason may petition to the Faculty of Arts and Science to write the deferred exam in the summer months. The format of the deferred exam will be the same as that administered in the formal exam session.

X. Re-mark Policy: You will not receive your marked midterm, but can schedule an appointment with me to take up any corrections on the midterm up until the last day of class. Note, that your mark can go up or down depending on what is found in this review. I typically

schedule midterm viewings immediately following the lecture. The final exam can only be viewed or remarked by myself (Dr. Berger) after petitioning the Faculty of Arts and Science. There will be no re-mark of the writing assignments.

XI. Lecture Dates and Topics:

January 7: Dr. Stuart Berger Course Introduction, “Rheumatoid Arthritis”

January 14: Dr. Shannon Dunn “Multiple Sclerosis”

January 21: Dr. Andrzej Chruscinski “Heart transplantation”

January 28: Dr. Bryan Coburn “Microbiome in health and disease”

February 4: Dr. Thomas Eiwegger “Allergy”

February 11: Dr. Joan Wither “Systemic Lupus Erythematosus”

February 18: Reading week

February 25: Midterm (in class)

March 3: Dr. Robert Rottapel “cdc42 and immunity”

March 10: Dr. Tracy McGaha “Tumor Immunology”

March 17: Dr. Rupert Kaul “HIV”

March 24: Dr. Eyal Grunebaum “Cellular defects causing primary immune deficiency”

March 31: Dr. Eleanor Fish “Interferons as first responders during acute virus infection outbreak”

Contact Information for Lecturers

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Dr. Eleanor Fish
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XII. Other Important Dates:

February 11th—Graduate writing assignment due (IMM1430 students only).

March 15th -- Last day for undergraduate students to drop the course without affecting the academic record and GPA.

March 17th—Core writing assignment due by the end of class (in class).

After these deadlines a mark is recorded for each course, whether course work is completed or not (a "0" is assigned for incomplete work), and calculated into the GPA.

XIII. Core writing assignment (Undergraduate and Graduate Students):

Students will write a scientific essay on the following topic:

"Blocking Tumor Necrosis Factor for the treatment of Rheumatoid Arthritis"

(due date is by end of class on March 17th and will be time-stamped at the end of the lecture). If you do not make this deadline, you will lose 10% of your mark and additional 10% for every additional day that the paper is late. Being sick doesn't give you additional time since you have had many weeks in advance to write this assignment)

The essay can elaborate on other aspects of this therapy, but should attempt to address the following questions or aspects:

- What is the role of TNF-alpha in normal immunity and in Rheumatoid Arthritis?
- What is the history of development of this therapy? What was the rationale for bringing this therapy to clinical trials?
- Discuss some of the key studies done (i.e., landmark clinical trials as well as mechanistic studies done in animal models).
- What drugs are used currently to block TNF?

- How effective are they and what are the risks associated with taking these drugs? How does it compare to older or newer treatments?
- How is this drug used in the clinic presently? Can this treatment be further improved?

The writing assignment will be marked by the TAs. The following general marking rubric will be applied:
A maximum of 50% of marks will be awarded for thoroughness of research
A maximum of 50% of marks will be awarded for organization of material, clarity of writing, formatting, and presentation.

TAs will each mark one quarter of the papers. Each TA will assign a grade based on the rubric and how the paper compares to others within his/her group. The course coordinator will ensure that each TA is marking similarly by adjusting the grades such that the median grade is the same for each TA. There will be no re-mark of the term paper.

Paper format requirements:
• The expectation is that the paper will be written in the style of a scientific review paper.

The paper should consist of 10 to 12 pages, not including tables, figures and the bibliography. Tables and figures are not required, but can be included (maximum 3 in total). Non-original tables and figures will not be marked and need to be properly cited or a deduction will be applied for improper citation (see Referencing source material).

The paper needs to be double-spaced, Font: 12 pt Times, one-inch margins. Page numbers should be included on all pages with the exception of the cover page. The cover page should include the student's name, student number and title of the report. A fancy title page does not increase your mark.

Referencing/Citations and source material:
•Quotations are not permitted
•When you have derived concepts from source material (which is expected), you must reference that source material in the text using a superscripted number.
•Your bibliography will then contain a numbered list of references.
•Reference style in the bibliography should be similar to that used for Nature. (check journal website for details).

Note: Your term paper will be subject to "Turnitin". You will be given the chance to check your originality report prior to the final submission of your paper. Those papers flagged to have excessive similarity by Turnitin will be individually reviewed by the course coordinator. If there is evidence of extensive paraphrasing or direct lifting of written material from primary research articles, the course coordinator will deduct marks from the term paper at his/her discretion.

XIV. Graduate writing assignment (Students in IMM1430 only):

1. Find a primary research article (not a review) that is relevant to an important advance in Rheumatoid Arthritis immunology, preferentially published in last two years, preferentially in a high-impact journal. Contact me ahead to determine whether the paper is appropriate. Each student is to pick a different paper and will be approved on a first-come-first-serve basis.
2. Summarize the article. Comment on the following in your summary: 1) What is the question being asked? 2) What was the experimental approach used. 3) Briefly describe the methodology. 4) What were the major findings and conclusions.

3. Critique the article. These are the questions you should answer. Was the research novel? Were the methods appropriate and sound? Do the results support the conclusions? Were the experiments replicated and appropriate statistics used? What experiments would have improved the manuscript? Do the results change the way we think about RA?

Maximum, 3 pages double-spaced, 12 point font.

(due date is by end of class on February 11th, in class, and will be time-stamped). If you do not make this deadline, you will lose 10% of your mark and additional 10% for every day that the paper is late. Dr. Berger will mark this assignment.

XV. Teaching Assistants: are senior graduate students in the Department of Immunology. These TAs are your resource. They also will be marking the exams and term papers. Please contact them if you have any questions about the lecture content.

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