

Microbiology and Immunology 4310A: Inflammation and Immunology in Disease

Draft – Course Description

With recent technological advances, our understanding of the immune underpinnings of inflammatory and immunological diseases continues to evolve. In this course, students will explore modern perspectives that challenge existing paradigms of inflammatory diseases.

Antirequisite(s): the former Microbiology and Immunology 4300A

Prerequisite(s): Microbiology and Immunology 3300B with a mark of at least 70%.

Extra Information: 3 lecture hours

Course Weight: 0.5 course

Draft - Course Summary:

Upon successful completion of this course, students will be able to:

- demonstrate an understanding of chronic inflammation in the context of different human diseases (e.g., multiple sclerosis, arthritis, critical illness, kidney disease, etc.)
- analyze data generated from advanced immunology techniques
- interpret scientific findings within the context of disease models
- critically think about how immunologists revise hypotheses in response to new findings, and
- synthesize and communicate ideas from multiple academic sources to a peer audience.

Draft - Anticipated Grading Structure:

- Midterm test: short answer (30%)
- Final Exam: short answer (30%)
- Presentation: students will work in groups of three to prepare 20-minute oral presentations based on information from the assigned weekly review article and with guidance from the course instructor. (20%)
- Annotated Bibliography: students will read and cite three primary research articles associated with their presentation topic and write a short description with evaluative comments regarding the research contribution of each to their presentation topic (10%)
- Peer Feedback: students will be required to attend in-class presentations and provide anonymized structured feedback to their peers. Feedback will include constructive comments on their peers' presentation skills and the content presented, and students will be asked to provide a probing question to demonstrate their engagement with the information presented. (10%)

Draft - Course Schedule

Week #	Topic	Instructor
Week 1	Multiple Sclerosis	Dr. Steven Kerfoot
Week 2	Mechanisms of Innate Memory	Dr. Sung Kim
Week 3	Immune Modulation in Critical Illness	Dr. Aleksandra Leligdowicz
Week 4	Critical Care of Sepsis and ARDS	Dr. Aleksandra Leligdowicz
Week 5	Breaking Self-Tolerance in Rheumatoid Arth	Dr. Lillian Barra
Week 6	Efferocytosis vs. Tissue Injury in Self-Tolera	Dr. Lakshman Gunaratnam
Week 7	Mechanistic Drivers of Chronic Rejection of Transplantation	Dr. Lakshman Gunaratnam
Week 8	Mechanisms of Sex Differences in Allergy	Dr. Lisa Cameron
Week 9	Th17 Responses in Inflammatory Disease	Dr. Lisa Cameron
Week 10	Neuroimmune Interactions	Dr. Robyn Klein