

Syllabus for BIOL 360: Cellular and Molecular Immunology

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Required readings are taken from “The Immune System” by Peter Parham (4th Edition, 2014. Garland Science). ISBN for “The Immune System”

978-0815344667 This text is adapted from Janeway’s Immunobiology, Garland Science. Janeway’s text can be read for greater depth/detail or instead of Parham’s text.

Paperback version: bought new for \$98.13. Lots of buying options on Amazon.

Week 1 (Feb. 1st and 4th)

Pathogen overview

Chapter 1: Elements of the Immune System and their Roles in Defense (please read as your own review)

Week 2 (Feb. 8th and 11th)

Chapter 2: Innate Immunity: the Immediate Response to Infection.

(Janeway text contains much of this information)

Week 3 (NO CLASS Mon., Feb 15th. Class meets on Feb. 18th only)

Chapter 3: Innate Immunity: the Induced Response to Infection

Week 4 (Feb 22nd and 25th)

Chapter 3: Innate Immunity: the Induced Response to Infection (continued)

Week 5 (March 1st and 4th)

Chapter 4: Antibody Structure and the Generation of B-Cell Diversity

Week 6 (March 8th and 11th)

Chapter 4: Antibody Structure and the Generation of B-Cell Diversity (continued)

First midterm on Thursday March 11th.

Week 7 (March 15th and 18th)

Chapter 5: Antigen Recognition by T lymphocytes

Week 8 (March 22nd and 25th)

Chapter 6: The Development of B Lymphocytes.

Week 9 (SPRING RECESS March 29th and April 1st)

Week 10 (April 5th and 8th)

Chapter 7: The Development of T Lymphocytes

Week 11 (April 12th and 15th)

Chapter 7: The Development of T Lymphocytes (continued)

Week 12 (April 19th and 22nd)

Chapter 8: T Cell-Mediated Immunity

Week 13 (April 26th and 29th)

Chapter 9: Immunity Mediated by B cells and Antibodies

Second Midterm on Thursday, April 29th

Week 14 (May 3rd and 6th)

Chapter 9: Immunity Mediated by B cells and Antibodies (continued)

Week 15 (May 10th and 13th)

Chapter 11: Immunological Memory and Vaccination

Week 16 (May 17th only. Last class!)

Chapter 13: Failure of the Body's Defenses

Last exam scheduled for Monday 5/24/21 from 1:45-3:45pm.

(NOTE earlier time of final exam!)

Expectations:

Participation is the key to active learning. I ask for active participation; not just to pose questions, but to answer questions. As such, attendance in this class is of paramount importance. *(If you miss more than 3 classes over the course the semester, your grade will be affected.)*

While the three written exams will be weighted equally, your participation in class will also factor in to your final grade. Please make every effort to attend class.

Learning goals*

to be developed during the semester and acquired as a result of reading, writing and participating in lecture.

1. Describe how the immune system is able to discriminate self vs. non-self.
2. Explain the specific roles of the innate and the adaptive immune systems and how they work together to generate a response against a specific pathogen.
3. Explain how the immune system is able to respond to diverse antigens.
4. Describe the various steps and checkpoints involved in lymphocyte development.
5. Explain how and why certain immune cells change their phenotype following activation.
6. Given certain symptoms of a clinical disease or manipulation, predict the immunological cause of the disorder.

*(from Colorado.edu.2011)

<http://www.colorado.edu/sei/documents/IPHY/Immunology%20Learning%20Goals%20-%20IPHY%204600.pdf>