

BIO 553 Advanced Topics in Immunology

(Spring, 2026)

Instructor: Yuntao Wu (Phone: 703-993-4299; email: ywu8@gmu.edu)
Office: PWII, Room 306

<https://wuhivlab.wixsite.com/wulab>

Text book: **Cellular and Molecular Immunology**
By Abul K. Abbas and Andrew H. Lichtman, 6 or 7th edition

Tuesday, 1:30 pm – 4:10 pm. K. Johnson Hall 256 / Online hybrid

(Important dates: Spring break: **March 10**; Reading days: **May 5**; Exam: **May 12**)

Jan. 20:

- Introduction to Dr. Wu has his research in HIV Immunology (In Person).

Jan. 27 :

- Basics of Flow-cytometry
- I. Introduction to Immunology:
 - 1). General properties of Immune response
 - 2). Cells and tissues of the immune system

Feb. 3:

- I. Recognition of Antigens:
 - 1). Antibodies and Antigens
 - 2). The major histocompatibility complex

Feb. 10:

- II. Recognition of Antigens:
 - 3). Antigen presentation
 - 4). Antigen receptors and accessory molecules

Feb. 17:

- III. Maturation, activation of regulation of lymphocytes
 - 1). Lymphocytes maturation

Feb. 24

- III. Maturation, activation and regulation of lymphocytes
 - 1). T cell activation

March 3:

- III. Maturation, activation of regulation of lymphocytes
 - 2). B cell activation

March 10: (No Class, Spring Break)

March 17:

- III. Maturation, activation of regulation of lymphocytes
 - 3). Immunologic Tolerance

March 24:

- IV. Effector Mechanism of Immune Response

- 1). Cytokines
- 2). Innate Immunity

March 31:

- IV. Effector Mechanism of Immune Response
- 3). Cell mediated Immunity

April 7:

- IV. Effector Mechanism of Immune Response
- 4). Humoral Immunity

April 14:

- V. Immune system in Disease
- 1) Immunity to Tumors

April 21:

- V. Immune system in Disease
- 2) Hypersensitivity and autoimmunity and transplantation immunology
- 3) Acquired immunodeficiencies

April 28:

Class Review (In person)

May 5

Reading Day (no class)

May 12

Final Exam (In person)

Grading:

Paper Presentation (20%)

***Class participation (31%)**

Final Exam: multiple choice and short questions (49%)

Bonus for class activity: 5%

***Class participation (7%+ 24% = 31%)**

- For each class attendance: 0.5%. Total: 14 classes x 0.5% = 7%

(Grade will be deducted for missing class (0.5% reduction), late (0.1% deduction) and half class (0.25% deduction))

- Activity in class: 2% for each class. Total: 12 classes x 2% = 24%

(excluding the first two class. Each student is required to ask at least 2 questions to the presenter to earn 2%. If good questions are asked, a bonus 0.5% will be awarded)

A+: 96-100%

A : 90-95%

A-: 85-89%

B+: 80-84%

B: 75-79%

B-: 70-74%

C+ 65-69%

C: 60-64%

D-: 50-59%

F: < 50