

Course Objectives Students will be able to explain the genetic and biochemical basis of antigen specificity, tolerance and memory in adaptive immune responses. Students will also learn how innate immune responses relate to adaptive immune responses and be able to explain the role of immune system components in medical applications such as transplantation, vaccination, allergy and autoimmunity.

Required Text Janeway's *Immunobiology*, Murphy, Travers, and Walport, 2012, 8th edition, Garland Science. Supplemental readings also will be provided on T Square.

Course Site <https://gatech.instructure.com/courses/183> We are test-flying Canvas, a candidate course management platform to replace T-square. We will undoubtedly have a learning curve, for both instructors and students, and your feedback will be helpful. This site will have lecture notes/slides, additional readings, on-line quizzes, and course grades.

Course Format Students will be expected to read and answer questions online about the readings before coming to class (online quizzes contribute to the grade). In class, students will work in groups to apply what they learned in the reading to complex, current problems in immunology.

Learning Catalytics Much of the in-class participation and online quizzes will be administered via Learning Catalytics. Students must purchase an individual subscription (\$12 per semester) at: https://learningcatalytics.com/student_sign_up - if you are enrolled in other courses that also use Learning Catalytics in Spring 2015, just one subscription will serve multiple courses for the semester.

Attendance Attendance is mandatory. Students are allowed 2 dropped quiz/assignment grades to account for unavoidable absences. In addition, one dropped exam grade is allowed. This is to allow for unavoidable absences. Make-up exams are not given regardless of whether an absence is excused or not. That why there is a dropped exam grade. Absences from lecture exams or quizzes will result in a grade of zero for that exam or quiz.

Grade Distribution: There will be three equally-weighted tests (25% each), plus a final exam (25%), covering material presented in lecture and the reading assignments. The lowest test grade will be dropped. Tests will not be curved. The final 25% of the grade will be distributed as follows: 5% Term Project (instructions will be posted on T square), 10% online quizzes, 10% in-class participation (activities/group work). Your conduct in this course is expected to conform to the GT Student Honor Code (www.honor.gatech.edu). I urge you to consult this for a full definition of your rights and responsibilities. Final grades will be assigned according to the following scale: 90-100% A, 80-89 B, 70-79 C, 60-69 D, below 60 F.

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DAY	DATE	Textbook Reading	TOPIC
TUE	Jan 12	1	Intro to Immunology
TH	Jan 14	1	Intro to Immunology II
TUE	Jan 19	2-1 to 2-5	Innate Immunity I
TH	Jan 21	3	Innate Immunity II
TUE	Jan 26	4	Ig structure/ Ag-Ab interactions
TH	Jan 28	4	TCR ligand/CD4 and CD8/Intro to MHC
TUE	Feb 2		EXAM 1
TH	Feb 4	5	Ig gene rearrangement
TUE	Feb 9	5	TCR gene rearrangement
TH	Feb 11	5	Somatic Hypermutation/Ig isotypes
TUE	Feb 16	6	Ag Presentation
TH	Feb 18	6	MHC
TUE	Feb 23	7	Signaling I
TH	Feb 25	7	Signaling II
TUE	Mar 1		EXAM 2
TH	Mar 3	8	B and T cell development
TUE	Mar 8	8	Positive and Negative Selection
TH	Mar 10	9	T cell activation
TUE	Mar 15	9	CTL and Helper T cells
TH	Mar 17	10	B cell Activation/ Antibodies
TUE	Mar 22		SPRING BREAK
TH	Mar 24		SPRING BREAK
TUE	Mar 29	11	Immune Response Dynamics
TH	Mar 31	11	Immune Response Dynamics
TUE	Apr 5		EXAM 3
TH	Apr 7		Mucosal Immunity
TUE	Apr 12	12	Immunodeficiency
TH	Apr 14	13	Allergy
TUE	Apr 19	14	Autoimmunity and Transplantation
TH	Apr 21	15	Manipulation of the Immune Response
TUE	Apr 26	16	REVIEW
TUE	May 3	All	Final Exam 6:00 PM

Dates are subject to change*