BIOL 4570 Immunology and Immunochemistry, Spring 2012

Course Objectives Students will be able to explain 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, 8^{h} edition, Garland Science. Supplemental readings also will be provided on T Square.

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. Student understanding of the concepts will be assessed in real time through the use of turning technologies clickers.

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 be mostly multiple choice, with a few short-answer questions. Tests will not be curved. The final 25% of the grade will be distributed as follows: 5% Group Project (instructions will be posted on T square), 10% online quizzes, 10% in-class participation (clickers/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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Office Hours: Tues/Thurs 9-11
Also available at other times, just e-mail to arrange.

TA Mona Ahmad
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Email to arrange meeting time

DAY	DATE	Textbook Reading	TOPIC
TUE	Jan 10	1	Intro to Immunology
TH	Jan 12	1	Intro to Immunology II
TUE	Jan 17	2-1 to 2-5	Innate Immunity I
TH	Jan 19	2	Innate Immunity II - Complement
TUE	Jan 24	4	Ig structure/ Ag-Ab interactions
TH	Jan 26	4	TCR ligand/CD4 and CD8/Intro to MHC
TUE	Jan 31		**EXAM 1**
TH	Feb 2	5	Ig gene rearrangement
TUE	Feb 7	**5**	TCR gene rearrangement
TH	Feb 9	5	Somatic Hypermutation/Ig isotypes
TUE	Feb 14	6	Ag Presentation
TH	Feb 16	7	MHC
TUE	Feb 21	7	Signaling I
TH	Feb 23	7	Signaling II
TUE	Feb 28		**EXAM 2**
TH	Mar 1	**8**	B and T cell development
TUE	Mar 6	8	Positive and Negative Selection
TH	Mar 8	9	T cell activation
TUE	Mar 13	9	CTL and Helper T cells
TH	Mar 15	10	B cell Activation/ Antibodies
TUE	Mar 20		SPRING BREAK
TH	Mar 22		SPRING BREAK
TUE	Mar 27	11	Regulation
TH	Mar 29	11	Regulation
TUE	Apr 3		**EXAM 3**
TH	Apr 5	12	**GUEST LECTURE**
TUE	Apr 10	13	Immunodeficiency – Presentations Groups 1-4
TH	Apr 12	**14**	Allergy – Presentations Groups 5-8
TUE	Apr 17	15	Autoimmunity and Transplantation – Groups 9-12
TH	Apr 19	16	Manipulation of the Immune Response – Groups 13-16
TUE	Apr 24	Paper TBA	Evolution of the Immune System
TH	Apr 26		REVIEW
TUE	May 1		**Final Exam 2:50**

Dates are subject to change*