

UNIVERSITY of HOUSTON

COLLEGE OF NATURAL SCIENCES & MATHEMATICS
DEPARTMENT OF BIOLOGY AND BIOCHEMISTRY

<http://nsm.uh.edu>
<http://www.bchs.uh.edu>

COURSE TITLE/SECTION: BIOL 4323: Immunology

CLASS TIME: Monday and Wednesday 1.00-2:30 PM in FH 219

BOOK: Immunology: A Short Course by Geoffrey Sunshine and Richard Coico

FACULTY: Mehmet Şen, Ph.D.

Contact for Dr. Şen: Blackboard

Email: msen@uh.edu

OFFICE HOURS: Monday/Wednesday 2:30pm-3:30pm or by appointment

EXAM REVIEW HOURS: By Appointment

OFFICE: Science and Engineering Research Center (SERC) 4012

COURSE WEBPAGE and SITE FOR ALL COURSE INFORMATION: Blackboard

Required Prerequisite Course. BIOL 3301 – (Genetics)

Highly Suggested Course BCHS 3304 (Biochemistry I)

Disclaimer: **ANY PART OF THIS SYLLABUS OR COURSE POLICY MAY BE CHANGED TO MORE EFFECTIVELY MEET THE NEEDS OF THE COURSE AND STUDENTS.** The schedule and topics below are also subject to change in the event of extenuating circumstances, including, but not limited to, instructor illness or class cancellations due to inclement weather.

I. Course Description (in details)

This is an introductory course that presents the fundamentals of immunology, with an emphasis on structural and functional aspects of the immune system, antigens, antibodies, and antigen-antibody and cellular reactions, human immune system and diseases. Topics covered include; the basic elements of immune systems including lymphoid tissues/organs and cells with immune functions; principles of natural immunity and acquired immunity including humoral immunity and cell-mediated immunity; cellular and molecular basis of B cell and T cell development and diversity; immune tolerance; immune mediators and cytokines,

II. Course Objectives

Upon completion of this course, students are expected to:

-have a basic knowledge of the essential elements of the immune system cells, tissues

and, molecules;

-have a basic understanding of cellular & molecular basis of innate & adaptive immune responses and immune tolerance (self and non-self antigen discrimination);

-have basic appreciation for wide applications of immunological discoveries in biotechnology and medicine;

-have some experiences in reading literature in immunology;

-have some experiences in presentation of immunological concepts and research in writing.

III. Grading

a. Quizzes	5%
b. Each midterm	15%
c. Presentation	10%
d. Report	10%
e. Final	30%

IV. Possible Presentation topics

- a. Molecular basis of bacterial immunity
- b. Tumor Immunity
- c. Hypersensitivity- Type I
- d. Hypersensitivity- Type II
- e. Hypersensitivity- Type III
- f. Hypersensitivity- Type IV
- g. Molecular basis of Leukocyte migration
- h. Hybridoma technologies and its applications in clinic
- i. Bacterial immunity
- j. Molecular basis of complement system
- k. Nod-like receptors
- l. Toll-like receptors
- m. Molecular and cellular biology of Systemic Lupus Erythematosus
- n. Vaccine technology and its applications in clinic
- o. Crohn's Disease, Ulcerative Colitis and Inflammatory Bowel Disease and their molecular basis

V. Course Content

BCHS 3304: Lecture and Exam Schedule

Lecture No. (Date)	Book Chapters	Lecture Topic & Book Sections	Exams
1 (21 Aug)	1	Introduction & overview	
2 (23 Aug)	2-3	Elements of Immunity: innate and adaptive	
3 (28 Aug)	HARVEY	No class	
4 (30 Aug)	HARVEY	No class	
5 (6 Sept)	2-3	Elements of Immunity: innate and adaptive	
6 Sept		<i>(Last day to drop a course or withdraw without receiving a grade or enrollment cap)</i>	
6 (11 Sept)	2-3	Elements of Immunity: innate and adaptive	
6 (13 Sept)	4	Immunogens and Antigens	
8 (18 Sept)	EXAM 1	Covering chapter 1,2,3 and 4	EXAM 1
9 (20 Sept)	5	Antibody Structures & Functions	
9 (25 Sept)	5	Antibody Structures & Functions	
7 (27 Sept)	6	Antigen-Antibody Interactions Immune Assays & Experimental Systems	
7 (2 Oct)	6	Antigen-Antibody Interactions Immune Assays & Experimental Systems	
9 (4 Oct)	7	The Genetic Basis of Antibody Structure	
11 (11 Oct)	8	Biology of the B Lymphocyte	
14 (16 Oct)	9	Biology of the B Lymphocyte & review	
15 (18 Oct)	EXAM 2	Covering chapter 4,5,6,7 and 8	EXAM 2
13 (23 Oct)	9	Role of MHC in Immune Response	
13 (25 Oct)	9	Role of MHC in Immune Response	
16 (30 Oct)	10	Biology of the T Lymphocyte	
31 Oct		<i>Last day to drop a course or withdraw with W</i>	
16 (1 Nov)	10	Biology of the T Lymphocyte	
17 (6 Nov)	11	Activation & Functions of T & B cells	
21 (8 Nov)	EXAM 3	Covering chapter 9,10 and 11	EXAM 3
22 (13 Nov)	15	Student Presentation 1-2	

23 (15 Nov)	15	Student Presentation 3-4	
24 (20 Nov)	16	Student Presentation 5-6	
25 (22 Nov)	17	Student Presentation 7-8	
26 (27 Nov)	17	Student Presentation 9-10	
27 (29 Nov)	17	Review	
2 Dec		Last Day of Classes	
Dec 11		Comprehensive Final Exam. Cover chapters from 1 to 11 and student presentations 2pm-5pm FG 219	Final Exam

VI. Course Structure

1. The course consists of lectures covering the most salient features of the associated material in the book chapters as well as additional supporting materials. Students are required to attend all lectures and take all exams.
2. In the first week of the class, I will assign study-groups (probably consist of five students per group). After covering basic immunology subjects, each group will present assigned topics in 30 min.
3. Also, each student will prepare homework on the assigned subject and submit a report at time of final.
4. If your score on the Comprehensive Final Exam is greater than that of any one attempted Midterm Exam, then I will replace that score with your score on the final. However, note that you **MUST TAKE ALL EXAMS**. This means that the final exam **WILL NOT** replace a 0 (zero) on an exam that you did not attempt. Also, a higher midterm exam score will **NOT** replace your score on the final.
5. Students with course grades that are “on the edge” of the next higher grade (within a point or two) will have the option to argue any immunology question from any of the midterms or final in a final office hour. If they can argue effectively why their answer should be considered correct or make an important insight into the underlying immunology in the question, they will receive the extra points. **NOTE:** It is incumbent upon the student to show that they have learned and understand the important immunology concepts relevant to the question.

VII. Course Requirements and Information

Attendance: All students are required to attend all lectures and take all exams. Approximately 10 to 20 % of all exam material will come from lecture materials not covered in the text or on the Power Point slides. In class, quizzes will occur. There are no quiz-make up if you miss class or are late to class.

Drop policy: It is the student's responsibility to drop from the course if they need to do so. Students may drop any time on or before September 6 without receiving a grade. **Students dropping after September 6 and before or on October 31 must have a passing grade based on exams to earn a “W”.** If a student drops before the date for the first exam, a "W" will be assigned on the drop form. Students may not drop the course after October 31.

Academic Honesty Policy: Cheating at the university level is really only cheating yourself and any suspected violations of academic honesty cannot be tolerated. Please refer to the University of Houston Student Handbook for a description of academic honesty policies. Cheating on an exam will result in immediate confiscation of the test and Scantron and you will receive a grade of “0” for that exam. Further required actions include a report to the Department of Biology & Biochemistry Associate Chair of Undergraduate Affairs and may result an assigned “F” for the course and/or suspension from the University of Houston.

Disabled students: If you require accommodations, please provide me with the specific accommodations you require. Whenever possible, and in accordance with 504/ADA guidelines, the University of Houston will attempt to provide reasonable academic accommodations to students who document, request and require them. Please call 713-743-5400 for more assistance. Please contact me immediately to discuss any such concerns and/or needs.

VIII. Evaluation and Grading

Exam Content: Remember, you are responsible for all presented material from lectures, the textbook and associated materials! All exams will be based on lecture material, and textbook and associated material readings and problems. Each student MUST take ALL exams. Exams must be turned in at the end of the exam. If you do not turn in your exam, you will receive a grade of F for the course. Exams will not be returned. A specific review session for students to review their exams will be scheduled after all exams are graded and reported.

Grade Reporting: All grade reporting will be through the Course Website for each of the four exams

Scantrons and Scratch Paper: Scantrons and scratch paper will be provided to each student upon entry into the exam. Each student will be required to print their name on the Scantron and bubble it in. Scratch paper will be included as the last page of the exam. Extra scratch paper will be provided, but students are not permitted to bring their own. Each student will be required to legibly print their name on the scratch paper and sign their name. You will be required to turn in your Scantron and scratch paper at the end of the exam: No Scantron, no grade. No scratch paper, no grade. Scantrons and scratch paper will not be returned.

Exam Day Procedures: No hats/caps will be allowed to be worn during the exam. All backpacks, purses, or electrical devices other than calculator must remain closed and on the floor during exams. No food will be allowed in the room. No talking during the exam is allowed. You must sit where assigned.

If you arrive late to an exam (after any classmate has turned in an exam), you will not be allowed to take the exam and it will count as a missed exam. You will receive a grade of "0" for that exam. Active proctoring will occur for each exam.

Grading and Grading Scale for the Course: There are three Midterm Exams and a Comprehensive Final Exam. All exams will count equally towards your final grade. Three exams will be during a scheduled class period in the same room as class lectures. The Comprehensive Final Exam will be on Dec 11 at 2PM-5PM. The exams are 100% multiple choice. There is no partial credit.

Course grades will be assigned based on a "curve" or "relative" scale. The highest score for the class will be set to 100% and a normal curve based on the

class grading distribution will be calculated. All grades will be related to that normalized curve. I will post the total number of exam points, average, Standard Deviation (SD) and high score for each exam. If there is any change from this grading scale, I will notify you.

Make-Up Exams: Under exceptional circumstances, I will give a make-up exam on a case-by-case basis under the following requirements:

1. There must be adequate documentation of the extraordinary circumstances of the absence (for example, a signed note from a local physician with full contact information in case of serious illness).
2. You must contact me by email or message as soon as possible when the absence occurs. While it is preferable to have this information prior to the exam, I understand that not all emergencies will cooperate with this preference.
3. Documentation of an excused missed exam must be given to me in person **immediately** upon returning to class. There are NO EXCEPTIONS.

Failure to do so will result in a score of “0” for the missed exam. Make-up exams will be scheduled by me for after class hours in the SERC Bldg., if possible within 48-72 hours of the original exam. The exam will not be the same one provided to the class! If you do not attend the make-up exam, you will receive a grade of “0” for the exam.

Incomplete Grade Policy: Only under rare circumstances, do I give a grade of I (Incomplete) and am not obligated to do so. A temporary grade of “I” can be assigned by the instructor when a student is currently (1) passing a course or (2) still has a reasonable chance of passing in the judgment of the instructor, but for *strictly non-academic reasons beyond their control have not completed a relatively small part of all requirements*. After the student and instructor agree that the student shall receive an “I” grade, an **“Incomplete Grade Agreement”** form **must** be completed and filed with the Office of Undergraduate Affairs (124f Science Building). It is the student’s responsibility to see to it that this form is filled out and delivered. Further information on “I” grades can be found at <http://www.uh.edu/dos/hdbk>.

UH CAPS Statement

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (www.uh.edu/caps) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the “Let's Talk” program, a drop-in consultation service at convenient locations and hours around campus.
http://www.uh.edu/caps/outreach/lets_talk.html

Graduate/Professional Colleges:

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to the demands of a professional program, or feeling sad and hopeless. You can reach CAPS (www.uh.edu/caps) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the “Let's Talk” program, a drop-in consultation service at convenient locations and hours around campus.
http://www.uh.edu/caps/outreach/lets_talk.html

UH Sugar Land:

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (<http://www.uh.edu/dsaes/uhsugarland/>) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the “Let's Talk” program, a drop-in consultation service at convenient locations and hours around campus.
http://www.uh.edu/caps/outreach/lets_talk.html <http://www.uh.edu/dsaes/uhsugarland/>

Online Students:

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (www.uh.edu/caps) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the “Let's Talk” program, a drop-in consultation service at convenient locations and hours around campus.
http://www.uh.edu/caps/outreach/lets_talk.html <http://www.uh.edu/dsaes/uhsugarland/>