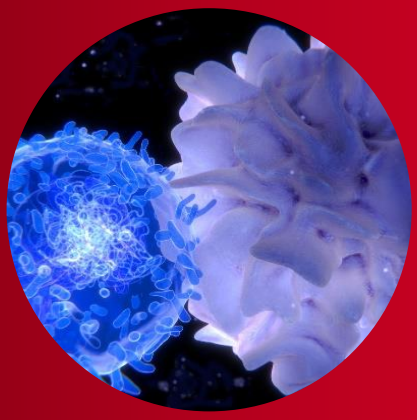

Immunology

BIOL 4323

Instructor Contact

Dr. Mehmet Şen

SERC 4012

Office Hours: TuTh 10:00–11:00 a.m. or by appointment

msen@uh.edu

Course Information

Fall 2018 Session 1 (Regular)

TuTh 8:30–10:00 a.m.

SEC 102

Cr. 3. (3-0); Section 21354

Description

Structural and functional aspects of the immune system. Antigens, antibodies, and antigen-antibody and cellular reactions.

UNIVERSITY of HOUSTON

BIOLOGY AND BIOCHEMISTRY

COURSE SYLLABUS

Fall 2018

Overview

This is an introductory course presenting the fundamentals of immunology, with an emphasis on the structural and functional aspects of the immune system, antigens, antibodies, and immunocellular reactions.

Over the course of the semester, we will cover a variety of topics including: the basic elements of immune systems and their responses, the principles of innate versus adaptive immunity, and the molecular basis of B cell and T cell development.

Prerequisites

Students must have credit for **BIOL 3301 Genetics** to be enrolled in this course.

Credit for, or concurrent enrollment in, **BCHS 3304 General Biochemistry I** is also highly recommended, but not required.

Resources

Coico R. & Sunshine G. *Immunology: A Short Course.* 7th edition. Wiley-Blackwell. 2015.

receptor.nsm.uh.edu/teaching/fa2018/biol4323

Learning Objectives

Upon successful completion of the course, the student will:

- Acquire basic knowledge of the essential elements of the immune system.
- Understand the cellular and molecular basis of the innate and adaptive immune systems.
- Appreciate the wide applications of immunology in biotechnology and medicine.
- Experience literary research in the immunological field.

Course Structure

This course will take place during the University of Houston's Fall 2018 Semester Session 1, encompassing the entirety of the term without abbreviation. This is a three (3) credit hour lecture-only course, with a letter grade assigned at the end of the semester (see Grading Policy). Lecture attendance is compulsory and will form a part of the student's term grade.

Top Hat® Response App

Attendance and class participation will be assessed using the **Top Hat® response system.** Students will submit answers to questions posed during class using their mobile devices: smartphones (iOS or Android compatibility), tablets, laptops, or via text message. There is no need to purchase a clicker.

DISCLAIMER

This syllabus, and any policy or part thereof, is subject to change, without notice, at the discretion of the instructor in order to better match the needs and expectations of the course and its students. The course schedule outlined below is also subject to change, without notice, in the event of extenuating circumstances such as, but not limited to, instructor illness or University closures due to inclement weather.

Visit the Top Hat® Overview for a guide on registering an account and the basics on how to use the system. After registering, an invitation to join this class on the app will be sent via email. The course code for BIOL 4323 is **56253**. You can also register directly by visiting the homepage on Top Hat® for this course at https://app.tophat.com/e/526253.

An account will be necessary in order to properly document participation. Quizzes given during class will be used to both record attendance and ensure students are following the course material at an adequate pace. Missed quizzes cannot be expiated. Students without an account will be unable to answer in-class quiz questions for any given day and will receive no points for that assessment.

Should you require assistance with Top Hat®, please contact their Support Team directly through the in-app support button, through email at support@tophat.com, or by calling +1 888 663-5491.

Disaster Recovery Instructional Continuity

In the event of an unforeseen circumstance which disrupts teaching processes (such as inclement weather), this course maintains two methods of instructional continuity: Blackboard e-communication and a listserv. In the case of the latter, students will receive emails from an automatically assigned mailing list address. Students should add biol4323-21354@listserv.uh.edu to their contacts to ensure messages from this mailing list do not accidentally end up in their spam inbox.

Grading Policy

This course adheres to the University's letter-based grading system. Student grades are evaluated based on the following:

%	Component
15	Quizzes / Attendance
20	Exam 1
20	Exam 2
20	Exam 3
25	Final Exam

The highest score for this course will be set at a maximum of 100% and a normal curve based on the class grading distribution will be calculated. Individual student grades will be relative to the normal distribution. Cutoffs for letter grades will be determined at the end of the semester by taking into consideration the average academic performance of the entire class. Students shall be promptly notified should any change be made to this grading system.

The score for the Final Exam may be used to replace the lowest ***attempted*** regular exam, if the former is greater. Neither the Final Exam nor missed regular exams may be replaced. Students will be afforded the opportunity to contest any question from an attempted exam(s) by effectively arguing why their answer to the question should be considered correct, or by providing important insight into the immunological basis of said question. The instructor reserves the absolute right to revoke, deny, or render ineligible these privileges, should the need arise due to excessive abuse or exploitation of the policy.

Assessment scores will be posted on Blackboard.

Make-Up Exams

Make-up exams will only be given under **exceptional circumstances** and at the instructor's discretion. Students who wish to request a make-up exam must provide proper and *complete* documentation of their reasons for missing a regularly-scheduled exam. Students must also contact the instructor informing them of the absence as soon as possible and preferably prior to the exam day. Documentation must be given **immediately** upon return.

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For medical emergencies, students should obtain a physician's note with the practitioner's full contact information and signature.

Incomplete Grades

The grade of 'I' (Incomplete) is a conditional and temporary grade given when students are passing the course but, for reasons beyond their control, have not completed a relatively small part of all requirements. The student and instructor must both consent on the receiving of an 'I' grade, after which an Incomplete Grade Agreement form shall be completed and filed with the Office of Undergraduate Affairs **by the student in question**.

An incomplete grade shall be given only under rare and extenuating circumstances. Students seeking an 'I' grade should make sure to compile the necessary documentation of reasons for requiring such a grade to give to the instructor. There is no obligation for the instructor to give an incomplete grade without proper documentation.

Exam Day Procedures

All exams will be administered electronically via Top Hat® in the same location as the lectures. Students may use **one** electronic device to access Top Hat®. The following items are **forbidden** at all times for the duration of the entire exam (including, but not limited to the given examples):

Item	Examples
Extra devices	mobile phones, smartwatches, laptops, tablets
Headgear*	hats, scarves, caps
Notes	textbook, lecture notes, crib notes
Consumables	food, water bottles

* Except that which serve a medical or religious purpose

During the exam, no talking is permitted. If it is deemed necessary, seats may be assigned to individual students. Active proctoring will be present at each exam, and behavioral patterns may be routinely monitored.

Exam Content

Each exam will be a multiple-choice assessment based on the lecture material and course textbook. As such, there is no partial credit awarded. Students will be notified should there be any change to the structure of an exam.

Late Arrival Policy

Students who arrive late on exam days will **not** be allocated extra time to complete the exam. Students who arrive **after any other examinee has already finished the exam** will not be permitted to take the assessment and will receive a grade of zero (0) for that exam, which cannot be replaced.

Post-Exam Procedures

When time is called, all testing materials must be turned in. **Failure to submit testing materials will be considered a violation of academic honesty** (see Academic Honesty Policy). Students may not discuss exam content until all grades have been posted.

Exams will not be returned. However, students may schedule to view their exam during office hours, only after all exams have been scored and grades have been uploaded.

Academic Honesty Policy

Academic honesty shall be strictly enforced at all times in this course and any credible suspicions of violations thereof shall prompt disciplinary measures. Cheating on an exam is grounds for immediate confiscation of the testing materials and an automatic grade of zero (0) for that exam. Further required

sanctions include a report to the Department of Biology and Biochemistry's Associate Chair for Undergraduate Affairs, which may additionally result in an automatic failing grade for the course and possible suspension from the University.

Please refer to the University of Houston Academic Honesty Policy for a detailed description.

Important Dates

This section is intended to outline University-wide events and deadlines. Lecture information and exam dates specific to this class can be found in the Course Schedule section.

Aug 20	First day of classes
Aug 27	Last day to add a course / be enrolled via waitlist
Sep 5	Official Reporting Day (ORD); last day to drop a course without penalty
Nov 1	Last day to drop a course with a 'W' or withdraw
Dec 1	Final day of classes
Dec 17	Deadline for final grades to be posted on PeopleSoft

Dropping Policy

Please note that, should it be desired, it is the student's responsibility to drop the course through their myUH account. Per the University's regulations for dropping, students may drop at any time without receiving a grade up until the closing of the Official Reporting Day (ORD). After the ORD, students may withdraw from the course, resulting in a 'W' grade, up until the closing of November 1. Afterwards, students will be unable to drop the course without filing a request with accompanying documentation to the Senior Vice President for Academic Affairs, and only under extenuating, nonacademic reasons.

Students with DisABILITIES

Whenever possible, and in accordance with Section 504 of the Americans with Disabilities Act (ADA) of 1990, the University of Houston will attempt to provide reasonable academic accommodations to students who request and require them. Please call +1 713 743-5400 or visit the Center for Students with DisABILITIES website for more assistance and contact me to discuss arrangements for academic accommodations.

CAPS Statement

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 by calling 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 / +1 713 743-5454

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Course Schedule

UNIT 1: Introduction to Immunology, Innate & Adaptive Immunity

Week 1	Aug 21	Chapter 1	Overview of the Immune System
	Aug 23	Chapter 2	Innate Immunity
Week 2	Aug 28	Chapter 3	Adaptive Immunity
	Aug 30	Chapter 4	Immunogens & Antigens
Week 3	Sep 3		Labor Day Holiday
	Sep 4	Chapter 5	Antibodies: Structure & Function
	Sep 6	Chapter 5	Antibodies: Structure & Function (*cont.*)
Week 4	Sep 11	Chapter 6	Antigen–Antibody Interactions, Immune Assays, & Experimental Systems
	Sep 13	Chapter 6	Antigen–Antibody Interactions, Immune Assays, & Experimental Systems (*cont.*)
Week 5	Sep 18	Chapter 7	Genetic Basis of Antibody Structure
	Sep 20		Exam 1 (Chapters 1–6)

UNIT 2: Adaptive Response & the Dual Lymphocytes

Week 6	Sep 25	Chapter 8	Biology of the B Lymphocyte
	Sep 27	Chapter 8	Biology of the B Lymphocyte (*cont.*)
Week 7	Oct 2	Chapter 9	Role of MHC in Immune Responses
	Oct 4	Chapter 9	Role of MHC in Immune Responses (*cont.*)
Week 8	Oct 9	Chapter 9	Role of MHC in Immune Responses (*cont.*)
	Oct 11	Chapter 10	Biology of the T Lymphocyte
Week 9	Oct 16	Chapter 10	Biology of the T Lymphocyte (*cont.*)
	Oct 18	Chapter 11	Activation & Function of T Cells
Week 10	Oct 23		Exam 2 (Chapters 7–10)

UNIT 3: Immunological Cellular Signaling & Tolerance

Week 10	Oct 25	Chapter 11	Activation & Function of T Cells (*cont.*)
Week 11	Oct 30	Chapter 12	Cytokines
	Nov 1	Chapter 12	Cytokines (*cont.*)
Week 12	Nov 6	Chapter 13	Tolerance & Autoimmunity
	Nov 8	Chapter 13	Tolerance & Autoimmunity (*cont.*)
Week 13	Nov 13		Exam 3 (Chapters 11–13)

UNIT 4: The Complement System & Oncology

Week 13	Nov 15	Chapter 14	Complement System

Week 14	Nov 20	Chapter 14	Complement System (*cont.*)
	Nov 22		Thanksgiving Holiday
Week 15	Nov 27	Chapter 20	Tumor Immunology
	Nov 29	Chapter 20	Tumor Immunology (*cont.*) & Course Review
Week 16	Dec 6		Final Exam (Comprehensive) 8:00–11:00 a.m.

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