

# Bio42: Biology of the Immune Response

## 2021 Syllabus

<b>Format:</b>	Remote, synchronous (please see Notification, p. 3)
<b>Zoom link:</b>	See Canvas
<b>Class:</b>	M, W, F, 1:10-2:15pm (except where indicated; see lecture schedule)
<b>Review sessions:</b>	Tue, 1:40-2:30 (X-hour)

This course consists of a series of lectures and readings that cover the field of Immunology including both normal and disease related aspects. In particular, its focus is on the basic cellular and molecular components involved in specific, and non-specific, immune responses. The mechanisms associated with cellular and humoral immunity, the development of allergies (hypersensitivities), autoimmunity, immunodeficiency diseases, graft rejection, the role of the immune system in preventing and treating cancer, and the immune response to pathogens including COVID-19. The course is divided into four parts, each ending with an examination.

All items associated with the course, including this syllabus, the lecture schedule, lecture slides, lecture notes, textbook reading assignments, and sample exams, will be posted on Canvas. We will use *Basic Immunology, 6th edition* (Abbas, Lichtman, and Pillai; available online) to supplement the information provided in class. Exam questions will be focused primarily on material presented in the lectures. Lecture recordings will be available through Canvas, and may be used to review and study course materials.

### Instructors:

Your Instructors for Biology 42 are all faculty members at Dartmouth's Geisel School of Medicine. Faculty members are available by appointment throughout the term, and will also hold virtual office hours by Zoom. Details will be provided through Canvas.

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### Grading:

Evaluations are based on four examinations, 100 points each, consisting of multiple choice (50 points) and short answer (50 points) questions.

Points	% of total grade	
Examination 1	100	20
Examination 2	100	20
Examination 3	100	20
Examination 4 (Final*)	200	40
500 points total	100%	

In order to aid your study, "practice exams" for each of the sections will be posted on Canvas. Included are sample multiple-choice questions like those you will find on the tests, with answers at the end of the questions so you can grade your own answers. You are encouraged to study for these questions as for a test.

\*The final exam will be cumulative, but will focus predominantly on material from the fourth and third parts of the course.

### Grading scale:

90-100% = A<sup>-</sup> to A      80-90% = B<sup>-</sup> to B<sup>+</sup>      70-80% = C<sup>-</sup> to C<sup>+</sup>      <70% = D      <60% = F

## GENERAL LEARNING OBJECTIVES FOR BIOLOGY 42

The information that you need to know will be presented in the lectures for this course. **If you come to class and take good notes, you will have all the information that you need to succeed!** Also, please use the Instructors' own lecture notes (available on Canvas) and your textbook (Abbas and Lichtman, Basic Immunology, 6th edition, Saunders (Elsevier)) to support your knowledge of the lecture material. We encourage you to attend the weekly review sessions that will be held during the X-hour (unless otherwise scheduled).

Even with these aids, keep in mind that immunology encompasses a large body of information. The most important advice is **not to fall behind. We encourage you to seek help from the faculty and your teaching assistant as often as needed.**

In thinking about Immunology, the most important questions you should be able to answer are:

1. What are the non-specific cellular and molecular components of the immune system and how do they function?
2. What are the cellular and molecular components involved in specific immune responses and how do they function?
3. How do the components of the non-specific and specific systems interact?
4. What are the cellular and molecular components which regulate the immune response and how do they function?
5. What are the abnormalities and/or undesirable effects of immune responses, the mechanisms associated with their development, and approaches to their correction?
6. How is our understanding of the immune system used in the development of therapies for human diseases?

## **NOTIFICATION TO STUDENTS**

### **(1) Consent to recording of course and group office hours**

By enrolling in this course,

a) I affirm my understanding that the instructor may record this course and any associated group meetings involving students and the instructor, including but not limited to scheduled and ad hoc office hours and other consultations, within any digital platform used to offer remote instruction for this course;

b) I further affirm that the instructor owns the copyright to their instructional materials, of which these recordings constitute a part, and my distribution of any of these recordings in whole or in part without prior written consent of the instructor may be subject to discipline by Dartmouth up to and including expulsion;

### **(2) Requirement of consent to one-on-one recordings**

By enrolling in this course, I hereby affirm that I will not under any circumstance make a recording in any medium of any one-on-one meeting with the instructor without obtaining the prior written consent of all those participating, and I understand that if I violate this prohibition, I will be subject to discipline by Dartmouth up to and including expulsion, as well as any other civil or criminal penalties under applicable law.