

Bi114 Syllabus Winter 2019

| Lecture | Date | Class Topic | Reading | Instructor |
|--|---------|--|--------------------------|------------|
| 1 | 1/7/19 | Introduction | Janeway-Chp 1 | PJB |
| 2 | 1/9/19 | Cells and Organs of the immune system | Kuby Chp 2** | PJB |
| 3 | 1/14/19 | Ab structure/effector functions | Janeway-Chp 4,10 | PJB |
| 4 – PS1 | 1/16/19 | Experimental Methods in Immunology | Janeway-Appendix I | PJB |
| | 1/21/19 | (Caltech holiday) | | |
| 5 – PS1 Due | 1/23/19 | T cells part I: MHC structure/function | Janeway-Chp 4, 6 | PJB |
| 6 – PS2 | 1/28/19 | Innate Immunity I- Complement/NK cells/Macrophages | Janeway-Chp 2 | SKM |
| 7 | 1/30/19 | Innate Immunity II- Pattern Recognition | Janeway-Chp 3 | SKM |
| 8 – PS2 Due | 2/4/19 | (TA Midterm review) | | TAs |
| Midterm Exam – February 4, 2019 (handed out after review); Due February 11, 2019 at 11:59pm) | | | | |
| 9 | 2/6/19 | T cells part II: Function/Responses | Janeway-Chp 4, 5 | PJB |
| 10 | 2/11/19 | The Dendritic Cell | Janeway-Chp 9 | SKM |
| 11 | 2/13/19 | VDJ Recombination/class switching | Janeway-Chp 5 | Dev |
| | 2/18/19 | (Caltech holiday) | | |
| 12 – PS 3 | 2/20/19 | Antigen Presentation | Janeway- Chp 6 | SKM |
| 13 | 2/25/19 | Adaptive Immune Responses | Janeway-Chp 7,8,9,10 | SKM |
| 14 – PS3 Due | 2/27/19 | B cell development | Janeway-Chp 4,8 | PJB |
| 15 – PS4 | 3/4/19 | T Cell Development | Janeway- Chp 4, 5, 14,15 | Mary Yui |
| 16 | 3/6/19 | Regulatory T cells | Janeway- Chp 9,15 | SKM |
| 17 – PS4 Due | 3/11/19 | Autoimmunity / Mucosal Immunology | Janeway- Chp 12, 14,15 | SKM |
| 18 | 3/13/19 | (TA Final review) | | TAs |
| Final Exam – March 13, 2019 (handed out after review); Due March 20, 2019 at 11:59pm | | | | |

**https://books.google.com/books?id=oOsFf2WfE5wC&pg=PA23&source=gbs_toc_r&cad=3#v=onepage&q&f=false

Lecture

Mondays and Wednesdays, 1:00-2:25pm, 200 BRD
(URL:<https://courses.caltech.edu/course/view.php?id=3230>)

Problem Sets handed out:

- Flashcards for Chapter 1 available Jan 7, 2019; must be completed by Jan 14, 2019.
- Flashcards for Chapter 4 available Jan 7, 2019; must be completed on or before Jan 21, 2019.
- Flashcards for Chapters 3, 5, 7 and 9 available Jan 7, 2019; must be completed before midterm.
- Problem Set 1: Handed out January 16; Due January 23
- Problem Set 2: Handed out January 28; Due February 4
- Problem Set 3: Handed out February 20; Due February 27
- Problem Set 4: Handed out March 4; Due March 11
- Problem Sets are due 1 week after they are assigned

Midterm Exam:

- Handed out February 4, 2019; Due February 11, 2019 at 11:59pm

Final Exam:

- Handed out March, 13, 2019; Due March 20, 2019 at 11:59pm

Instructor office hours

Sarkis Mazmanian 4-5pm Thursday (or by appointment) in 275 Church
Pamela Bjorkman 4-5pm Thursday (or by appointment) in 361 Broad

TA office hours

Scheduled office hours for each problem set:

Problem Set 1: Kim, Broad 200, 7-8pm, on Tue. Jan. 22, 2019

Problem Set 2: Alex, Broad 200, 7-8pm, on Thu. Jan 31, 2019

Midterm Review: Alex and Kim, Broad 200, Jan 31, 2019

Problem Set 3: Kim, Broad 200, 7-8pm, on Tue. Feb. 26, 2019

Problem Set 4: Alex, Broad 200, 7-8pm, on Thu. March 7, 2019

Final Review: Alex and Kim, Broad 200, March 8, 2019

TAs are also available for individual office hours upon request (e-mail the TAs on weekend before desired date)

Alex Cohen acohen@caltech.edu
Kim Dam kdam@caltech.edu

Requirements:

Class Participation: 10% of grade
Problem sets: 35% of grade
Midterm exam: 20% of grade
Final exam: 35% of grade

Reading Material**1. Required Text:**

K. Murphy, P. Travers, M. Walport; Janeway's Immunobiology:, 8th edition. Current Biology, Ltd., 2004

2. Recommended Text:

Fundamental Immunology (5th edition), edited by William E. Paul, 2003, Lippincott Williams and Wilkins. Cells and organs lecture taken from Chapter 2 of Kuby textbook, which can be found online here:

https://books.google.com/books?id=oOsFf2WfE5wC&pg=PA23&source=gbs_toc_r&cad=3#v=onepage&q&f=false

3. Assigned readings from the current literature:

Discussed in class and used for problem sets.

The course is based on lectures and assigned reading material, including both a textbook for background and references from the current literature. It is recommended that you buy the textbook by Janeway, and if you are interested, you may also wish to buy the more authoritative Fundamental Immunology book as a reference. Other readings will be handed out by the TAs. There will be citations of optional readings that you can get from the literature, but which are not strictly required. You're encouraged to use the libraries and the internet (using Caltech's PubMed access- Caltech Connect) to consult these optional papers for additional depth and understanding.

Level of Work

This is not an introductory course. It presupposes some familiarity with the techniques and intellectual vantage points of molecular biology, as well as a comfortable acquaintance with general aspects of cell biology (the cell cycle, transcription, protein synthesis, protein structure & function, DNA recombination, intracellular transport, etc.). You will probably find the workload overwhelming if you are trying to learn these areas of cell biology as you go along the term.

Problem Sets

Problem sets will consist of questions relating to lecture material and assigned papers in the literature will be handed out on the dates specified above. Completed problem sets are due in class one week later or as announced in class. The problem sets are open book and require careful reading of the assigned papers. Consultation with TAs and discussion with classmates is encouraged, but copying answers from another student is a violation of the Honor Code. Over-collaboration will result in a violation of the Honor Code. The problem sets account for 35% of the grade.

No credit will be given for problem sets handed in late, unless you have contacted the TAs before the assignment is due and have a medical excuse signed by a **medical doctor**. The Professors and the TAs determine the amount of time you have for the extension only. Graduate school interviews and traveling do not count as medical excuses. If you plan to be away during part of the term or miss any classes, arrange before you leave to obtain and complete the problem sets early. Beside a documented medical excuse, no other reason will be considered for late submission of problem sets.

The TAs will be available at particular office hours for help before the problem set is due, at a time noted on the problem set. The point of the problem sets is to focus your reading of the literature papers so that we can look forward to some lively discussions.

Examinations and General Aspects

There will be two cumulative exams, a midterm exam worth 20% of the grade and a final exam worth 35% of the grade. Beside a documented medical excuse, no other reason will be considered for submission of late exams.

Both the midterm and final are take-home closed book exams. Any copying from published materials, from lecture outlines, the Internet, from another member of the class or any other source is plagiarism and a violation of the Honor Code. The closed book policy is to encourage you to understand the material fully as we go along and not just copy the course material to answer exam questions.

****Every login to Moodle is recorded and looked at by the TAs. "Unauthorized" logins and downloading of course materials will be investigated.****

The only way to understand the material is to ask questions. Please do not be intimidated. Class participation will be rewarded up to 10% of the total grade.

We grade this class on a curve. Although we can't anticipate what percentage range will be assigned to each grade, it is generally the case that you will need to have a 60% or higher in order to pass the class.

Staff

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|---------------------|-------------------------------|---|
| Sarkis K. Mazmanian | 275 Church | x2356, sarkis@caltech.edu |
| Pamela J. Bjorkman | 361 Broad | x8350, bjorkman@caltech.edu |
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