

Immunology PCB 4233 - B51
Florida International University
Fall 2018

Course Time: Tuesday and Thursday 12:30 PM – 1:45 PM
Course Location: Academic Center 1, Room 265
Instructor: Helena Schmidtmayerova, Ph.D.; Office: AC1 383A
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Office hours: Tue 2:00 PM – 4:00 PM
Wed 12:30 AM – 1:30 PM
Thur 2:00 - 4:00 PM (except for the 2nd Thursday of the month) or by the appointment

(Please do not come to my office wearing perfume/cologne or any other scented products. If you do I will have to reschedule your appointment since I have strong allergic reaction to artificial scents. I apologize for any inconvenience this may cause you).

COURSE DESCRIPTION:

Immunology is the study of the body's defense against pathogens. In this course you will be introduced to the fundamental principles and concepts of modern immunology. You will study mechanisms of innate and adaptive immunity, and the development, activation, effector functions, and regulation of immune responses, what happens when immune system fails, or when it become over reactive.

COURSE GOAL is to translate a fundamental knowledge of immunology and apply this knowledge to recognize and solve problems underlying immunological dysfunction. Upon completion of the course, students will be able to:

1. Explain how the body defends itself against the pathogen
2. Compare and contrast the innate and adaptive immune responses
3. Explain how immune cells recognize antigen
4. Compare the mechanisms by which different immune cells eliminate the pathogen
5. Explain immunological memory
6. Identify immune deficiencies
7. Explain basic mechanisms of allergy and autoimmunity
8. Explain the immune response to cancer
9. Apply immunology concepts to solve immunological problems

LEARNING MATERIAL:

Textbook **Owen, Punt, Stranford. Kuby Immunology**, 7th edition, W.H. Freeman and Company (loose-leaf packaged with LaunchPad access card, ISBN: 978-1-4641-9336-1). LaunchPad is an online site with many features that will help you to better understand immunology, including Learning Curve, animations, videos, and science news. LaunchPad includes an eBook and you may consider getting an access to Launchpad without printed textbook (ISBN: 978-1-4641-6735-5).

In addition to the textbook, we will discuss articles from peer-reviewed as well as popular journals. I will post recommended readings on Blackboard periodically throughout the semester. You

are welcome to bring any article that you find interesting to the class discussions, or post them on blackboard discussion forum. Although the textbook is great source of information, articles will enrich your knowledge and keep you well-informed. Questions from recommended readings and discussion forum posts may appear as test extra credit questions.

We will also use iClickers in the class.

HOW WILL YOU SUCCEED IN THIS COURSE?

Attend: This course comprises significant amount of material and class attendance will help you master the course material. In addition, exams may cover material discussed in the class that are not included in textbook or lecture PowerPoint outlines. In the case of missed lecture days or impending absences, ask your fellow classmates for lecture notes and in-class announcement information.

Prepare and Participate: Be active in the class. Active class participation is very important and even though you might feel nervous to raise your hand and speak, please do so; ask questions, answer questions, trigger discussions, share what you have been reading. Any course material relevant question is appropriate, so do not hesitate to ask. Remember that having an inquisitive mind is vital for science and learning. You will discover that being active in the class will help you to learn. However, in order to be active in the class **you have to come prepared**. If you want to succeed in the class you have to do your work, complete your home assignments and readings before coming to the class. Identify challenging concepts and material and prepare relevant questions for the class. Remember that: "*The will to succeed is important, but what's more important is the will to prepare (Bobby Knight)*". This apply not only to sport, but to your studies as well.

Communicate: Don't try to solve all class challenges by yourself. Talk.....Talk to your peers, talk to me. Come to my office and share your concerns, request further clarifications of the material, share your thoughts. Let me know if any of the material or class activity is challenging for you and you struggle with it. We will try to find solution together. Don't wait until the end of semester to do so; come early and come as many time as you need. If you can't come during my office hours, please take an appointment. It is important that you start doing this early in the semester in order to overcome obstacles and succeed.

ASSESSMENT:

Your grade will be assessed based on your performance in **three quizzes, the final cumulative exam, assignment, and class activity**. The final cumulative exam is mandatory and will account for 20 % of your final score.

Grade Distribution:	Test 1	200 points
	Test 2	200 points
	Test 3	200 points
	Final exam	200 point
	<u>Class activity</u>	<u>200 points</u>
	TOTAL	1000 points (100%)

Quizzes and the final examination will consist of multiple-choice, matching, and true-false questions answered on computer-graded forms (Scantron). On examination days you are responsible for bringing your **student identification card** and **at least two pencils and an eraser**. Your examination will not be graded if you will not have your student identification card or your

examination answer sheet is marked incorrectly. Print your name and student identification number on the answer sheet in the appropriate place and then fill in the corresponding circles. Read each question carefully and fill in the circle on the answer sheet that corresponds with the best answer. **Make sure you choose only one answer.** If you make a mistake, be sure to erase completely. Questions with more than one answer will be counted as incorrect.

Exam dates:

Quiz 1 – Tuesday, September 18

Quiz 2 – Tuesday, October 23

Quiz 3 – Tuesday, November 20

FINAL EXAM –

If you miss an exam due to the circumstances beyond your control we can set up make-up date with you. However, all make-ups will have an essay format.

Grading scale:	A	93 % - 100%
	A-	90 % - 92.9 %
	B+	88 % - 89.9 %
	B	83 % - 87.9 %
	B-	80 % - 82.9 %
	C+	78 % - 79.9 %
	C	70 % - 77.9 %
	D	60 % - 69.9 %
	F	<60%

Class Activity: will consist of iClicker questions, short "one-minute paper", and homework assignments. The purpose of iClickers is to follow your progress in the class and provide a feedback immediately. We will also use iClickers for open and anonymous polling to survey class opinions and feedback. The "one-minute paper" will help you to evaluate your own progress in learning immunology concepts. You will have to answer different concept questions within one minute. Your answers will not be graded individually, but your effort to complete them thoroughly will account towards your final grade. The purpose of "one-minute paper" assignments is to complement iClickers in assessing your progress. The major goal of occasional homework assignment will be to reinforce your learning and concept understanding. There will be no make-up for class activity.

Extra Credits: You will have two options for earning extra credit. Your first option is getting LaunchPad and completing Learning Curve assignments. You can get up to 60 points (6 %) extra credits towards the final grade for the Learning Curve assignments from LaunchPad. Learning Curve is a formative assessment activity that will guide you through a series of questions adjusted to your individual level of understanding. Learning Curve is an integral part of LaunchPad. You will have target points to reach in order to get 10 points for the assignment. You will have options, either to answer the question if you know the answer, or request the hint, or open the appropriate book chapter to find the answer. You will have 19 assignments, each worth 10 points. You can accumulate 190 points from all of them, which will correspond to 100%. To obtain the points, you have to complete learning curve before deadline. Your extra credit points will be calculated as follows:

Learning Curve: 90 % - 100 % = Extra credit 60 points

Learning Curve: 80 % - 89 % = Extra credit 50 points

Learning Curve: 70 % - 79 % = Extra credit 40 points

Learning Curve: 60 % - 69 % = Extra credit 30 points

Learning Curve: 50 % - 59 % = Extra credit 20 points

Learning Curve: 40 % - 49 % = Extra credit 10 points

The second option to earn extra credit is short 5-8 minutes presentation of peer-review article relevant to the course material. The article has to be approved and presented following the class topic schedule. You can select any topic from schedule except those selected for group assignment. You can get up to 40 points (4 %) extra credits towards the final grade for the class presentation of the research article.

ACADEMIC MISCONDUCT POLICY:

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct (e.g. *cheating, plagiarism, academic dishonesty*), they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the *FIU Student Handbook* under the “Academic Misconduct” section.”

TENTATIVE ASSIGNMENT SCHEDULE:

(Please be advised that the course syllabus schedule of events is subject to change)

Week	Subject	Assign chapters to read
1 st week August 20 - 26	● Overview of the immune system	1
2 nd week August 27 - September 2	● Cells, Organs, and Microenvironment of the Immune System	2
3 rd week September 3- 9	● Receptors and Signaling: B and T cell receptors ● Receptors and Signaling: Cytokines and Chemokines	3 4
4th week September 10- 16	● Innate Immunity ● The Complement System	5 6
5th week: September 17- 23	Quiz 1: Tuesday, September 18 ● The Organization and Expression of Lymphocyte Receptor Genes	7
6th week: September 24- 30	● The MHC and Antigen presentation ● T cell Development	8 9
7th week: October 1- 7	● B cell Development	10

8th week: October 8- 14	<ul style="list-style-type: none"> ● T cell Activation, Differentiation, and Memory ● B cell Activation, Differentiation, and Memory 	11 12
9th week: October 15- 21	<ul style="list-style-type: none"> ● Effector Responses 	13
10th week: October 22- 28	<p>Quiz 2: Tuesday, October 23</p> <ul style="list-style-type: none"> ● The immune Response in Space and Time 	14
11th week: October 29- Novemeber4	<ul style="list-style-type: none"> ● Infectious Diseases and Vaccines ● Immunodeficiency Disorders 	17 18
12th week: November 5- 11	<ul style="list-style-type: none"> ● Immunology of the allergic responses Autoimmune disorders. 	15 16
13th week: November 12- 18	<ul style="list-style-type: none"> ● Immune responses behind transplant rejection. ● Cancer and the immune system 	16 19
14th week: November 19 - 25 (November 22-23 FIU is closed)	<p>Quiz 3: Tuesday, November 20</p>	
15 th week November 26- December 2	Review of Immunology	

FINAL EXAM: