

**Infection and Immunity****Biology 437/537****Spring 2018**

Prerequisite: Biology 341 (or consent of the instructor)

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**Learning Objectives.** Following the completion of this course, students should have an appreciation for and understanding of

1. the human immune system
2. virulence mechanisms of infectious disease agents
3. many of the major infectious diseases of humans
4. how to read and interpret primary scientific literature
5. how to assemble and integrate scientific information on a topic and communicate it in writing and orally.

**Texts:** There is one required textbook for the immunology portion of the course:Immunology: A Short Course, Seventh Edition, by Richard Coico and Geoffrey Sunshine. 2015. Wiley-Blackwell, Hoboken, NJ

There is not a textbook for the medical microbiology portion of the course. There are some useful general texts in case you want one. One such is:

Medical Microbiology, 8<sup>th</sup> Edition by Patrick R. Murray, Ken S. Rosenthal, and Michael A. Pfaller. 2016. Elsevier, ISBN: 978-0-323-29956-5**Course materials on the web:** Some course materials will be made available via Canvas (<https://nmt.instructure.com>).**Tentative schedule with reading assignments:**

Date	Topic	Reading assignments
1/17	Introduction and Review of Basic Microbiology	
1/19	Overview of the immune system, constitutive defenses	Coico Ch. 1
1/22	Innate immune system	Coico Ch. 2
1/24	Cells and organs of the immune system	Coico Ch. 3
1/26	Antigens	Coico Ch. 4
1/29	Antibodies	Coico Ch. 4, 5, 6
1/31	Antibodies	Coico Ch. 4, 5, 6
2/2	<a href="#">Paper discussion #1</a>	
2/5	Immunoglobulin genes	Coico Ch. 7
2/7	MHC, Antigen processing	Coico Ch. 9, 10
2/9	T cells and T cell receptors	Coico Ch. 10
2/12	<b>Exam #1</b>	
2/14	Cytokines	Coico Ch. 12
2/16	Complement	Coico Ch. 14
2/19	Autoimmunity	Coico Ch. 13
2/21	Hypersensitivity	Coico Ch. 15-17
2/23	Hypersensitivity	Coico Ch. 15-17
2/26	Vaccines	Coico Ch. 18
2/28	Diagnostic Principles, serology	Coico Ch. 6
3/2	Diagnostic Principles, serology	Coico Ch. 6
3/5	Normal microbiota	
3/7	Pathogenicity: invasins and toxins	
3/9	Pathogenicity: invasins and toxins	
3/19	Guest lecture, virology	
3/21	<b>Exam #2</b>	
3/23	Guest lecture, virology	
3/26	Introduction to bacterial pathogens, <i>tap o o us</i> spp.	

- 3/28 [Paper discussion #2](#)
- 3/30 Introduction to bacterial pathogens, *tr pto o us* spp.
- 4/2 Bacterial STDs: Syphilis, gonorrhea, Chlamydia
- 4/4 Enteric pathogens: *a on a a Ca p o a t r*
- 4/6 Enteric pathogens: *r o o ra . Es r a o*
- 4/9 *H o a t r p or*  
*on a p n u op a*
- 4/11 *C ostr u*  
*Ba us ant ra s, Y rs n a p st s*
- 4/13 Lyme disease
- 4/16 [Paper discussion #3](#)
- 4/18 *o a t r u* : TB and leprosy
- 4/20 Rickettsias
- 4/23 Wrap up: bacteria
- 4/25 viral topics TBA
- 4/26 viral topics TBA
- 4/27 [Paper discussion #4](#)
- 4/30 viral topics TBA