

MCB 55: Plagues and Pandemics FALL 2017
MWF 9 -10 am, 2060 VLSB, 3 units

In this course, we will discuss how infectious agents cause disease and impact society at large. We will examine historical and current examples of plagues and pandemics. The course is intended for non-majors and will begin by briefly providing necessary background in microbiology and immunology. In the subsequent lectures, we will be discussing an infectious disease with information about the lifecycle of the pathogen, the immune response, vaccines and treatment, as well as the social and historical impact of specific diseases. **No laptop computers or tablets or phones are allowed to be used during class time.**

***Note: You will not receive credit for this class if you have **PREVIOUSLY taken** MCBC100A-Biophysical Chemistry, MCB102 --Survey of Biochemistry, MCB150 Molecular Immunology, OR MCBC103/PMBC103/PHC102 –Bacterial Pathogenesis. But you may take this class *before* or *concurrent with* the upper division MCB or PH classes.

Instructors:

Robert Beatty prbeatty@berkeley.edu
Russell Vance rvance@berkeley.edu
Jeffery Cox jeff.cox@berkeley.edu

Office hours

Tuesdays 2 -3 pm (until Oct 27) 176 LSA*
Thursdays 3-4pm (until Oct 27) 447 LSA*
TBA (starting week of Oct 30)

*LSA is the Life Science Addition. This is next to, but is not the same as, the VLSB.

Reader: Cost: ~\$30, available at Copy Central 1971 Shattuck Ave 510 848-7034 square@copycentral.com (cross street University Avenue ---THIS IS NOT Copy Central on Bancroft). The reader from the past year may work but the order of the readings has changed.

Course Policies

Safe, Supportive, and Inclusive Environment

Whenever a faculty member, staff member, post-doc, or GSI is responsible for the supervision of a student, a personal relationship between them of a romantic or sexual nature, even if consensual, is against university policy. Any such relationship jeopardizes the integrity of the educational process.

Although faculty and staff can act as excellent resources for students, you should be aware that they are required to report any violations of this campus policy. If you wish to have a confidential discussion on matters related to this policy, you may contact the Confidential Care Advocates on campus for support related to counseling or sensitive issues. Appointments can be made by calling (510) 642-1988.

The classroom, lab, and work place should be safe and inclusive environments for everyone. The Office for the Prevention of Harassment and Discrimination (OPHD) is responsible for ensuring the University provides an environment for faculty, staff and students that is free from discrimination and harassment on the basis of categories including race, color, national origin, age, sex, gender, gender identity, and sexual orientation. Questions or concerns? Call (510) 643-7985, email ask_ophd@berkeley.edu, or go to <http://survivorsupport.berkeley.edu/>.

DSP Students

Please inform the instructors of any accommodations needed during the first week of the course. It is most helpful if you can introduce yourself to us early in the semester.

Academic Integrity and UC Berkeley Honor Code. Cheating and Plagiarism are unacceptable behavior and if you are caught will result in a failing grade for the class. UC Berkeley's cheating policy (<http://bulletin.berkeley.edu/academic-policies/#studentconductappealstext>) will be followed. The student community at UC Berkeley has adopted the following Honor Code: <http://asuc.org/honorcode/> "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." The hope and expectation is that you will adhere to this code. If you are uncertain what constitutes cheating or plagiarism, go to <http://campuslife.berkeley.edu/conduct/integrity>.

Exams (2 Midterms, each worth 20% of the final grade, and 1 Final (essentially a third ‘midterm’), also worth 20% of the final grade)

Midterm examinations will be given during the 50-minute class time and the final examination will be given in the 1 hour and 50-minute scheduled time during exam week. Midterms will focus on material presented in class. The Final will focus on material discussed in the last part of the course by Prof. Cox. Note, however, that some material covered in the first part of the class is relevant to understanding the last part of the class, so reviewing it is advised.

The Final Exam will be given on **Monday Dec. 11th from 7-9 pm**, in a location to be announced.

iClickers and office hours (worth 10% of the final grade).

The purpose of these various activities is to encourage you to attend the lectures, help with in-class discussion, and get help when needed. Points are given for participation (correct answers are not required).

Quizzes (worth 10% of the final grade)

There will be quizzes on lecture material and the readings given through bCourses. The purpose is to encourage you to read the readings and attend the lectures. There are no makeups for quizzes.

“One page paper” (worth 20% of the final grade)

There will be a writing assignment limited to a single page of single-spaced 12-point text. The objective of this assignment is to provide you a chance to express your thoughts in response to a controversial infectious disease topic in a more detailed format than is possible with in-class midterms.

Grading

Midterm I	100 pts	20%
Midterm II	100 pts	20%
iClicker points in class	50 pts	10%
Quizzes	50 pts	10%
One page proposal	100 pts	20%
Final Exam (=Midterm III)	<u>100 pts</u>	<u>20%</u>
	500 pts	100%

The assignment of letter grades at the end of the semester is “curved”. The median grade is usually a B-, with roughly 1/3rd of the class earning grades in the A-range, 1/3rd in the B-range, and 1/3rd in the C-range or below.

MCB 55 Plagues & Pandemics: Class Lecture Schedule 2017				
	9:10-10 am	VLSB 2060		
Section 1		Microbiology and Immunology		Instructor
Wed	23 Aug	1	Class Overview: Microbes and History	Diamond: Guns, Germs & Steel: Ch. 11; Vance
Fri	25-Aug	2	Microbe Hunters 1	de Kruif: Microbe hunters, Ch. 1, 3 Vance
Mon	28-Aug	3	Microbe Hunters 2	de Kruif: Microbe hunters, Ch. 4 Vance
Wed	30-Aug	4	Basic Molecular Biology	Angier: The Canon, Ch.7 Vance
Fri	1-Sep	5	Innate Immunity	Vance
Mon	4-Sep		NO CLASS - LABOR DAY	
Wed	6-Sep	6	Adaptive Immunity	Beatty
Fri	8-Sep	7	Vaccines	Beatty
Section 2		Parasites		
Mon	11-Sep	8	Malaria	The Mosquito Killer, The New Yorker 20 Beatty
Wed	13-Sep	9	Malaria	Beatty
Fri	15-Sep	10	Parasitic worms	de Kruif: Microbe hunters, Ch. 9 Beatty
Mon	18-Sep	11	Parasitic worms	Beatty
Wed	20-Sep		REVIEW SESSION	Beatty
Fri	22-Sep		Midterm I (on Sections 1 and 2)	Beatty/Vance
Section 3		Viral Pathogens		
Mon	25-Sep	12	Polio/Measles	Beatty
Wed	27-Sep	13	Influenza	Drexler: Secret Agents, Ch.5 Beatty
Fri	29-Sep	14	Hantavirus/Norovirus	Beatty
Mon	2-Oct	15	Ebola	Beatty
Wed	4-Oct	16	Dengue/Zika	Beatty
Fri	6-Oct	17	HCV	Beatty
Mon	9-Oct	18	Smallpox	Preston: The Demon in the Freezer, pp. Vance
Wed	11-Oct	19	HIV -AIDS	Vance
Section 4		Bacterial Pathogens I		
Fri	13-Oct	20	The Bacterial Cell	Vance
Mon	16-Oct	21	Plague	Bollet: Plagues & Poxes, Ch.1 Vance
Wed	18-Oct	22	Cholera	Bollet: Plagues & Poxes, Ch.6 Vance
Fri	20-Oct	23	Legionella	Vance
Mon	23-Oct	24	Toxic Shock Syndrome	Garrett: The Coming Plague, Ch.12 Vance
Wed	25-Oct		REVIEW SESSION	Vance/Beatty
Fri	27-Oct		Midterm II (on Section 3 and 4 only)	Vance/Beatty
Section 5		Bacterial Pathogens II		
Mon	30-Oct	25	Antibiotics	Cox
Wed	1-Nov	26	Antibiotic resistance: MRSA and Gram negatives	Cox
Fri	3-Nov	27	Streptococcus and Necrotizing fasciitis	Gawande: Complications, The Case of t Cox
Mon	6-Nov	28	Tuberculosis 1	Reichman: Timebomb, Ch.1,2 Cox
Wed	8-Nov	29	Tuberculosis 2	Reichman: Timebomb, Ch.11 Cox
Fri	10-Nov		Veteran's Day- NO CLASS	
Mon	13-Nov	30	Non-tuberculosis mycobacterial infections	Cox
Wed	15-Nov	31	Listeria	Cox
Fri	17-Nov	32	Helicobacter pylori	Cox
Mon	20-Nov	33	Salmonella	Cox
Wed	22-Nov		Thanksgiving- NO CLASS	
Fri	24-Nov		Thanksgiving- NO CLASS	
Mon	27-Nov	34	EPEC/EHEC	Cox
Wed	29-Nov	35	Persistence	Cox
Fri	1-Dec	36	Anthrax/Bioterrorism	Cox
Fri	8-Dec		REVIEW SESSION	2060 VLSB Cox
	11-Dec		FINAL EXAM (only on section 5) 7-10pm, Location TBA	