Syllabus for Biology 315 - Principles of Microbiology – Fall 2009
T/Th 11:00 to 11:50 AM in LO1117
Dr. Mike Summers

Course Objectives and Organization: This course is designed to give students insights into the variety microbes present on earth with emphasis on the bacteria. It is organized to first give an overview of microbial structure/function relationships, taxonomy, and general modes of nutrition and growth, and at specific elements of metabolism unique to microbes. This will be followed by an overview of human immunology and viruses. Throughout the course, aspects of microbial structure and metabolism will be related to human pathogens and symbiotic relationships. The course will conclude with applied aspects of microbiology as it relates to ecology, genetics, and biotechnology. A textbook will be used to teach the course. Student evaluation will involve use of exams, quizzes, and homework. PDF files containing slides used in lecture will be made available from Dr. Summers' website prior to class.

Period	Date		Tentative Topic	Relevant Chapter
1	T	8/25	Introduction	1
2	Th	8/27	Microbial Life: Origin and Discovery	1
3	T	9/1	Bacterial Cell Structure and Function	3
4	Th	9/3	Bacterial Cell Structure and Function ***Homework #1 due***	3
5	T	9/8	Archeael Cell Structure and Function	19
6	Th	9/10	Eucaryal Cell Structure and Function	20
7	T	9/15	Bacterial Culture, Growth, and Development	4
8	Th	9/17	Environmental Influences and Control of Microbial Growth	5
9	T	9/22	Microbiological Control	5, 27
10	**Th**	**9/24**	**EXAM I** Lecture periods 1-9 (or as announced)	
11	T	9/29	Microbial Metabolism: Energy, Enzymes	13
12	Th	10/1	Microbial Metabolism: Catabolic Pathways	13
13	T	10/6	Microbial Metabolism: Respiration, Lithotrophy, and Photolysis	14
14	Th	10/8	Microbial Metabolism: Biosynthesis	15
15	T	10/13	Immunology: Nonspecific resistance	23
16	Th	10/15	Immunology: Specific resistance	24
17	T	10/20	Viruses: Structure and Function	6
18	Th	10/22	Viruses: Replication and Disease	6, 25
19	T	10/27	Mechanisms of Microbial Pathogenesis	25
20	**Th**	**10/29**	**EXAM II** Lecture Periods 11-19 (or as announced)	
21	T	11/3	Food and Industrial Microbiology	16
22	Th	11/5	Microbial Ecology – Ecosystems	21
23	T	11/10	Microbial Ecology – Symbiosis	21, 22
24	Th	11/12	Microbial Ecology – Nutrient cycling	22
25	T	11/17	Microbial Genetics: Genomes and Chromosome replication	7
26	Th	11/19	Microbial Genetics: Transcription and Translation	8
27	*T*	*11/24*	*Furlough day – no class*	*study!*
28	*Th*	*11/26*	*Thanksgiving – campus closed*	
29	T	12/1	Microbial Genetics: Genetic Transfer and Genome Evolution	9
30	Th	12/3	Microbial Genetics: Mechanisms of Gene Regulation	10
31	**T**	**12/8**	**EXAM III** Lecture periods 21-30 (or as announced)	
	T	**12/15**	**FINAL EXAM Tuesday Dec. 15 at 10:15 – 12:15 (note earlier exam time)**	

The above schedule is subject to change based on circumstances and opportunities.

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Office Hours: Tuesday and Thursday. 12-1 or by appointment

Textbook: Slonczewski and Foster, *Microbiology: An Evolving Science*, 2009, WW Norton & Co. ISBN: 978-0-393-97857-5. This textbook may be purchased at the bookstore, or purchased as an ebook (whole book ($60) or by the chapter (at $2/chapter)) online at http://nortonebooks.com/disciplines/Discipline.asp?DiscId=4 Although we will not be using chapters 2, 12, 17, 18, 26, or 28, the information in chapter 2 will be covered in the 315 lab, and the other chapters may be of interest to those of you specializing in biotechnology or the health sciences. The book is a good reference for the future for those of you making a career in biology and I recommend the printed version… if you can afford it. The ebook is cheaper, but printing it could be expensive, and online access to it will expire in 1 year.

Clicker: Turning Point RF Response Card: Order directly from manufacturer for $28.00, plus shipping and handling, or obtain from the CSUN bookstore. Please order the ResponseCard RF Keypad from:https://store.turningtechnologies.com/index.cfm Type in CSUN code for discounted price of $28.00: 9RYn (case sensitive). Several 1 point multiple choice quiz questions will be given during each lecture and students will receive points for all questions answered correctly. Students must be present to earn quiz points, there are no make-ups for absences. Total quiz points earned throughout the semester will be weighted to reflect the 50 point total.

Evaluation:

Exam I	150 points
Exam II	150 points
Exam III	150 points
Final Exam	150 points
Homework	40 points
Quizzes	60 points
Total points possible	700

There will be three examinations and a final. The Final Exam will be comprehensive. All exams will use the Scantron mini essay book (Form No. 886-E) and will contain multiple choice, short answer, and essay questions. There will be no make-up exams except for an excused medical or certified family emergency. If more than one examination is missed a "W", or if documented, an "I" will be given as the final grade. Exam materials may cover information presented in the text and other assigned readings, lecture, or assigned videotapes. Quizzes will be given at any time without notification to assess student preparedness and understanding.

Homework: Two homework assignments are due on days described in the syllabus. The first assignment will be a description of your personal aspirations or goals for the future and how taking Biol 315 fits into your goals. Include also what you wish to learn about in this class or are especially interested in learning about. Based upon your responses, I may be able to stress or expand in certain areas of the curriculum to make this a more valuable experience for you. Part 2 requires you to draw and label the structure of the gram positive and gram negative bacterial envelope. Guidelines as to what must be included and labeled in each drawing will be made available prior to the due date

	points	description
Homework #1	10	class and personal aspirations
Homework #2	30	gram + and – labeled drawings

Grading Policy: Grades will be based on the +/- system (A, A-, B+, B, B-, C+, C, C-, etc.) using the following scale, and are calculated from the cumulative points earned throughout the semester. Plus and minus grades will be awarded to the top and bottom 2% within each grade range, respectively. Students within 2% of the next higher grade may enhance their chance of achieving the higher grade by: 1) A final exam score at or above that grade, 2) Continual improvement in exam scores.

90-100% = A 80-89% = B 70-79% = C 60-69% = D

Academic Integrity: All forms of academic dishonesty (including cheating, plagiarism, falsification, etc.) will not be tolerated. If you are caught in such activities in any form, you will receive a failing grade for the course and will be reported to the University for appropriate action. If you are unsure what constitutes cheating, consult the current University catalog or student handbook.

Biology Withdrawal Policy: You may only drop the class during the first three weeks of the semester except under extenuating circumstances (see Spring Schedule of Classes for details). After that you must have a verifiable serious and compelling reason to withdraw (NOT poor performance).

Students with disabilities must register with the Center on Disabilities and complete a service agreement each semester. Staff within the Center will verify the existence of a disability based on the documentation provided and approved accommodations. Students who are approved for test taking accommodations must provide an Alternative Testing Form to their professor signed by a counselor in the Center on Disabilities prior to making testing arrangements. The Center on Disabilities is located in Bayramian Hall, room 110. Staff can be reached at 818-677-2684.