

BIOL 2421.16  
Microbiology for Science Majors  
Spring, 2011

**Instructor:** Donna Griffin  
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**Start/End Date:** January 18, 2011 – May 12, 2011  
**Modality:** Web-Enhanced  
**Credits:** 4 sch

**Course Description:** Students learn specific information and concepts in the classification, structure, cultivation and ecology of microorganisms. Students learn mathematical calculations of growth parameters and the effectiveness of chemotherapeutic agents. Students learn terminology, specific information and concepts of the relationships between microorganisms and human life. Cause and effect relationships between microbial growth and human disease, interpretation of symptomatic and laboratory information in diagnosis of disease, prevention of disease and treatment of disease are stressed. Lab fee required.

**Pre-Requisites:** A minimum grade of “C” in BIOL 1406 and BIOL 1407, or BIOL 2401 and BIOL 2402, or CHEM 1311 and BIOL 1406 or BIOL 2401.

**Scans:** 1, 3, 6, 9

**Course goals:** This course deals with microorganisms and how they cause disease. During this course, you will:

1. Learn the how microorganisms live and reproduce.
2. Learn the basic principles and techniques of genetic engineering.
3. Learn the principles and terminology of disease.
4. Learn how microorganisms cause disease.
5. Learn the basics and applications of immunology.
6. Learn the causes and treatments of communicable diseases of today.

**Textbooks:**

**Textbook:** *Microbiology: An Introduction*, 9<sup>th</sup> ed., by Tortora, Funke, & Case

**Lab Book:** *Microbiology: Laboratory Theory and Application*, 3<sup>rd</sup> ed., by Leboffe & Pierce

**Grading and evaluation:**

Five lecture exams	(500 pts)
Final exam	(200 pts)
Paper	(100 pts)
Four lab practicals	(200 pts)
Unknown	(100 pts)

Grades will be based on a percentile scale. At the end of the semester, earned points will be divided by the total number of possible points and multiplied by 100 to give a final average percentile score.

A = 90 – 100%, B = 80 – 89%, C = 70 – 79%, D = 60 – 69%, F = Below 60%

A comprehensive make-up exam will be given to replace a missed exam. If a family crisis, sever illness, or other emergency causes you to miss an exam, it is **your** responsibility to make arrangements for a make-up exam to be taken before the next class meeting following the exam, OR you may take the comprehensive make-up at the end of the semester. These are the only two choices.

**Attendance:** Attendance is vital to your success in this class. Attendance will be taken at the beginning of each class period. There for it is necessary that you be on time.

### TENTATIVE LECTURE SCHEDULE

Week of	Type	Description	Due Date
1/18/11	Lecture	Intro to Class; Ch. 1: The Microbial World and You	N/A
	Lecture	Ch. 2: Chemical Principles	N/A
1/25/11	Lecture	Ch. 2: Continued; Ch. 4: Prokaryotic Cells	N/A
2/1/11	Lecture	Ch. 14: Principles of Disease	N/A
	Exam	Exam I (1, 2, 4)	2/3/11
2/8/11	Lecture	Ch. 15: Mechanisms of Pathogenicity	N/A
	Lecture	Ch. 5: Microbial Metabolism	N/A
2/15/11	Lecture	Ch. 6: Microbial Growth	N/A
	Exam	Exam II (14, 15, 5)	2/17/11
2/22/11	Lecture	Ch. 8: Microbial Genetics	N/A
3/1/11	Lecture	Ch. 9: Biotechnology & Recombinant DNA; Video	N/A
3/8/11	Lecture	Ch. 9: Continued; Ch. 10: Classification of Bacteria;	N/A
	Lecture	Ch. 13: Viruses	N/A
3/15/11	Holiday	Spring Break	N/A
3/22/11	Lecture	Ch. 13: Continued	N/A
	Exam	Exam III (6, 8, 9)	3/24/11
3/29/11	Lecture	Ch. 13: Continued; Ch. 16: Nonspecific Defenses of the Host	N/A
	Assignment	Research Paper	3/31/11
4/5/11	Lecture	Ch. 16: Continued; Ch. 17: Specific Defenses	N/A
	Exam	Exam IV (10, 13, 16)	4/7/11
4/12/11	Lecture	Ch. 17: Continued	N/A
		Ch. 18: Applications of Immunology	N/A
4/19/11	Lecture	Ch. 18: Continued; Ch. 19: Immune Disorders	N/A
4/26/11	Lecture	Ch. 19: Continued	N/A
	Exam	Exam V (17, 18, 19)	4/28/11
5/3/11	Lecture	AIDS, STDS, Antimicrobial Drugs	N/A
	Exam	Comprehensive Make-up	5/5/11

**Exam                      Final Exam (1:00pm – 3:30 pm)                      5/10/11**  
**Laboratory Tentative Schedule**

<b>Week of</b>	<b>Type</b>	<b>Description</b>	<b>Due Date</b>
1/18/11	Lab	Introduction: Lab Orientation	N/A
	Lab	Microscope; observe yogurt and Gram + and Gram - slides	N/A
1/25/11	Lab	Handling and Examining Cultures	N/A
2/1/11	Lab	Hanging Drop; Gram Stain	N/A
2/8/11	Lab	Special Stains	N/A
2/15/11	Lab	Pure Culture Techniques; Cultures from the Environment	N/A
2/22/11	Lab	Colonial Morphology	N/A
	<b>Exam</b>	<b>QUIZ 1</b>	<b>2/24/11</b>
3/1/11	Lab	<i>Haemophilus, Bordetella, Corynebacterium</i> ; Library Orientation	N/A
3/8/11	Lab	Primary Media; Differential Tests	N/A
3/15/11	Holiday	Spring Break	N/A
3/22/11	Lab	Streptococci; <i>Legionella, Pseudomonas</i>	N/A
<b>3/29/11</b>	<b>Exam</b>	<b>QUIZ 2</b>	<b>3/29/11</b>
	Lab	Start Unknowns	N/A
4/5/11	Lab	Urinary Tract Infections, Hepatitis Continue work on unknowns	N/A
4/12/11	Lab	Staphylococcus; <i>Neisseria</i> ; Spirochetes;	N/A
4/19/11	Lab	Enterics, Enteric pathogens; Microscan	N/A
	<b>Exam</b>	<b>QUIZ 3</b>	<b>4/22/11</b>
4/26/11	Lab	Antiseptics and Disinfectants; Antibiotic (7-3)	N/A
	Lab	Fungi; Protozoans	N/A
5/3/11	Lab	Helminthic Worms; Turn in lab notebooks	5/3/11
	<b>Exam</b>	<b>QUIZ 4</b>	<b>5/5/11</b>

**Special Information:** Cheating or plagiarism will not be tolerated. If a student is suspected of cheating/plagiarism, they will be subject to being dropped from the course with a grade of "F" Cell phones and pagers should be turned off during all class times

**Special Needs:** Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If you have any special needs or issues pertaining to your access to and participation in this or any other class at Odessa College, please feel free to contact me to discuss your concerns. You may also call the Office of Disability services at 432-335-6861 to request assistance and accommodations.

**Learning Resource Center (Library):** The Library, known as the Learning Resources Center, provides research assistance via the LRC's catalog (print books, videos, e-books) and databases (journal and magazine articles). Research guides covering specific subject areas, tutorials, and the "Ask a Librarian" service provide additional help.

**Student E-Mail:** Please access your Odessa College student email by following the link to either set up or update your account: <https://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

**Technical Support:** For Blackboard username and password help and for help accessing your online course availability or student email account contact the Student Success Center at 432-335-6878 or online at [https://www.odessa.edu/dept/ssc/helpdesk\\_form.htm](https://www.odessa.edu/dept/ssc/helpdesk_form.htm)

**Important School Policies:** For information regarding student support services, academic dishonesty, disciplinary actions, special accommodations, or students' and instructors' right to academic freedom can be found in the [Odessa College Student Handbook](#).