BIOL 2421.624
Microbiology for Science Majors
Spring, 2013

Instructor: Donna Griffin
Office: WH102C
Phone/voice mail: 335-6533
Email address: dgriffin@odessa.edu

Start/End Date: January21, 2011 – May 16, 2013
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,11*th ed., by Tortora, Funke, & Case
Lab Book: *Microbiology: Laboratory Theory and Application*, 3rd ed., by Leboffe & Pierce

Grading and evaluation:

Five lecture exams	(500 pts)
Final exam	(200 pts)
Project	(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. Therefore, it is necessary that you be on time.

TENTATIVE LECTURE SCHEDULE

Jan	22	Intro to Class
	24	Ch. 1: The Microbial World and You
	29	Ch. 2: Chemical Principles
	31	Ch. 2: Continued
Feb	5	Ch. 4: Prokaryotic Cells
	7	Ch. 4: Continued
	12	Ch. 4: Continued; Ch. 14: Principles of Disease
	14	Ch. 14: Continued;
	19	**Exam I (1, 2, 4)**
	21	Ch. 15: Mechanisms of Pathogenicity
	26	Ch. 15: Continued; Ch. 5: Microbial Metabolism
	28	Ch. 5: Continued
Mar	5	Ch. 5: Continued; Ch. 6: Microbial Growth
	7	**Exam II (14,15,5)**
	12	**Spring Break!**
	14	**Spring Break!**
	19	Ch. 6: Continued; Ch. 8: Microbial Genetics
	21	Ch. 8: Continued
	26	Video: Ch. 9: Biotechnology & Recombinant DNA
	28	Ch. 9: Continued
	2	Ch. 10: Classification of Bacteria(Tegrity); Ch. 13: Viruses
Apr	**4**	**Exam III (6,8,9)**
	9	Ch. 13: Continued
	11	Ch. 16: Nonspecific Defenses of the Host
	16	Ch. 16: Continued; Ch. 17: Specific Defenses

	17	**Exam IV (10,13,16)**
	23	Ch. 17: Continued
	25	Ch. 18: Applications of Immunology
	30	Ch. 19: Immune Disorders
	2	**Exam V (17, 18,19)**
May	**7**	**Comprehensive Make-up (Please bring 1 green scantron)**
	9	Panel Discussion
	14	**Final Exam (8:00 am – 10:30 am. Please bring 2 green scantrons)**

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 of1990. 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 and/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

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.

MICROBIOLOGY LAB - Spring, 2013

LAB MANUAL: Microbiology: Laboratory Theory and Application, (3rd ed) by M.J. Leboffe & B.E. Price

LAB PARTNERS: You will always work in pairs and sometimes in 'fours', so choose a lab partner before classes begin if you can.

LAB RULES: You will be working with live micro-organisms in this lab. For your own safety and the safety of everyone in the lab you will follow the rules and procedures of aseptic technique at all times. Your instructor will educate you in aseptic technique during the first lab. If you miss that first lab you will not be allowed to participate in any future lab until you have been tutored in these techniques. You will receive a lab coat to use during the semester and you must wear it at all times when you are in the lab unless the instructor tells you otherwise. Please note and follow these additional lab rules:

1. No food or drink allowed at any time.
2. If you have long hair, tie it back.
3. Do not wear dangling jewelry, scarves, ties or strings in the lab.
4. At the beginning of each lab session, wash your hands thoroughly (minimum 30 seconds) and repeat this procedure at the end of each lab before you leave.
5. Do not wander around the lab. This will be a full lab with every lab bench and seat occupied and you will need to be diligent not to bump into others and cause spills or other accidents.
6. Cell phones are to be turned off except when taking pictures during designated class times. Cell phones are distracting and you are not paying attention if you are texting or talking on the phone and could, therefore, cause an accident. Accordingly, you may be dismissed from class at the sole determination of the instructor if your cell phone rings during lab.

ATTENDANCE/GRADING: The laboratory portion of Microbiology will involve working with one or more partners and sharing a hands-on experience with live micro-organisms. Participation in all laboratory classes is mandatory in order to fully meet course requirements. Any absence will affect your partner and affect your success in the course. So do your best to be in class on time, every time.

Four lab exams (practicals) will be given. Due to the extensive setup required for lab practicals, <u>there can be no make-up exams</u>. You will also have an unknown project. The point total you earn on these four exams and your project will account for approximately 30% of your Microbiology course grade.

Course Syllabus: read your course Syllabus for other important information.

Tentative Lab Schedule

Jan	**T**	22	Introductions
	TH	24	Introductions
	T	29	Lab Orientation
	TH	31	Microscope; and Gram + and Gram - slides
Feb	**T**	5	observe yogurt
	TH	7	Gram Stains
	T	12	Special Stains
	TH	14	Hanging Drop
	T	19	Media; Moist and Dry Heat; Autoclave
	TH	21	Handling and Examining Cultures
	T	**26**	Practical 1
	TH	28	Complete; Colonial Morphology; Cultures from the environment
Mar	**T**	5	Haemophilus, Bordetella, Corynebacterium
	TH	7	Library Orientation
	T	**12**	Spring Break!
	TH	**14**	Spring Break!
	T	19	Primary Media and Biochemical Tests
	TH	21	Complete;
	T	**26**	Practical 2
	TH	28	Pure Culture Techniques
	T	2	Complete; Staphylococcus and Nose Culture
Apr	**TH**	4	Unknown and Flow chart Instructions
	T	9	Streptococcus; Throat Culture and Latex Agglutination
	TH	11	Complete; UTI's; Hepatitis; Legionella, Pseudomonas, Neisseria; Spirochetes
	T	16	Panel Discussion
	TH	18	Panel Discussion
	T	23	Enterics, Enteric pathogens; Microscan
	TH	**25**	Practical 3
	T	30	Fungi
	TH	2	Protozoans, Helminthic Worms
May	**T**	7	Continue; Turn in Unknowns and Flow Charts
	TH	**9**	Practical 4