OKLAHOMA BAPTIST UNIVERSITY
MICROBIOLOGY
BIOL 2274
SPRING 2011

COURSE/CATALOG DESCRIPTION
A study of basic and applied aspects of general and medical microbiology and immunology. After examining structural and functional similarities and differences between microorganism and higher forms of living organisms, the course will concentrate on the disease-producing properties of microorganisms, the defense mechanisms of hosts (immunity and serological reactions), the pathways by which these agents are transmitted, and the methods used to control microorganism.

COURSE OBJECTIVES
In addition to exploring multiple textual topics in infectious diseases and their control and prevention, students will develop medical microbiological laboratory skills designed to reflect current trends in infectious disease diagnostics. Students will also be expected to develop their skills at designing experiments, writing scientific reports, and delivering multimedia presentations.

CLASS DATES

Section A:	Mon., Wed., Fri.,	9:00 – 9:50am	BABC Room 105
Section B:	Mon., Wed., Fri.,	11:00 – 11:50am	BABC Room 105
Laboratory 1:	Tuesday	2:00 – 5:00pm	WSB Room 109
Laboratory 2:	Monday	2:00 – 5:00pm	WSB Room 109

INSTRUCTOR
Bradley Jett, Ph.D.
Office: WSB 119B
Phone: 405-878-2043
Office Hours: T 11am – 1pm; W 1pm – 3pm; R 12-1pm
Email: brad.jett@okbu.edu

CREDIT HOURS
4 Credits

TEXTBOOKS TO PURCHASE
"Microbiology: A Human Perspective" 6th Edition, By: Nester, Anderson, Roberts, and Nester.

"Microbiology Experiments: A Health Science Perspective" 6th Edition, By: Kleyn

PREREQUISITES
BIOL 2364, CHEM 1124.

CLASS PARTICIPATION
Fifty minutes is simply insufficient time to cover every aspect of the chapter in detail. Therefore, it is imperative that you be prepared to discuss the subject matter PRIOR to coming to class. Hopefully, we will then be able to specifically address problems you are having with a given concept, or answer your

specific questions. Remember that the best learning experience is that in which we learn from each other. As such, active participation by each student during classroom discussions is both encouraged and expected. This course will quickly become impossible if you wait to prepare for lecture and exams the night before.

EXAMS
There will be 5 major exams, a final exam, and a comprehensive laboratory final exam, each of equal value. Exams can be made up only under EXTRAORDINARY circumstances, such as death in the family or serious illness. NOTE: Due to the nature of the laboratory final exam and the time required for its preparation, this exam must be taken on the posted date and will be impossible to make up.

LABORATORY
Attendance at all laboratory sessions is required. I expect to be informed in advance if illness or other serious emergency prevents your attendance in lab or lecture. You are strongly urged to maintain a laboratory notebook, in which you carefully document your experiments and observations. Laboratory performance will be graded using a comprehensive laboratory final exam worth 100 points. Therefore, your notebook in which you keep accurate records of experiments, observations, and laboratory discussions will be essential for enhancing your performance on the final, even though the notebook will not be turned in for a grade.

LABORATORY PROJECTS AND PRESENTATIONS
Working in laboratory groups, students will periodically be assigned laboratory projects or problems in microbiology and infectious diseases. In order to solve these problems, students will be required to conduct laboratory experiments and/or review the medical literature. Groups will present their findings orally to the class during specified laboratory sessions. The use of audio-visual aids is encouraged. Presentations will be graded and will contribute to the overall course grade as outlined below. When reviewing the literature, remember that our libraries subscribe to several scientific publications. Alternatively, articles are easily obtained via interlibrary loan, and via the Internet.

GRADES
Grades will be based on the standard scale of percent of total points available: A (100-90%), B (89-80%), C (79-70%), D (69-60%), F (59-0%). Percentages will be based on the following components:

- 5 exams x 100 points each: 500 points
- Final exam: 100 points
- Laboratory practical exam: 100 points
- Laboratory Presentations: 100 points (50 points x 2 presentations)
- Homework and Quizzes: 50 points

TOTAL POINTS: 850 points

ATTENDANCE
The Oklahoma Baptist University attendance policy will be followed according to guidelines published in the Student Handbook.

STUDENTS WITH DISABILITIES
Oklahoma Baptist University complies with Section 504 of the Rehabilitation Act and with the Americans with Disabilities Act. Students with disabilities who need special accommodations must make their requests and submit documentation to the Director of Student Services. The Student Services office is located in the Geiger Center, Room 101.

ADDITIONAL IMPORTANT ACADEMIC INFORMATION FOR OBU STUDENTS
Please refer to the following link,
http://www.okbu.edu/academics/forms/syllabus_attachment_spring11.pdf for important information regarding class attendance policies academic policies and expectations, tutoring information, library hours, important dates and holidays, inclement weather policies, chapel attendance policies, and more.

COURSE SCHEDULE

DATE	ASSIGNMENT	TOPIC
Jan 24	NONE	Introduction
Jan 26	Chapter 1	Humans and the Microbial World
Jan 28	Chapter 3	Microscopy and Cell Structure
Jan 31	Chapter 3 and Biochemistry Review Quiz (Chapters 2, 6, 7)	Microscopy and Cell Structure
Feb 2	Chapter 4	Dynamics of Prokaryotic Growth
Feb 4	Chapter 5	Control of Microbial Growth
Feb 7	EXAM #1	
Feb 9	Chapter 8 Chapter 9	Bacterial Genetics: (selected readings) Biotechnology and Recombinant DNA: (selected readings)
Feb 11	Classroom Discussion	"Microbiology and Society"
Feb 14	Chapter 10	Identification and Classification of Prokaryotes
Feb 16	Chapter 11	The Diversity of Prokaryotic Organisms (and class handouts)
Feb 18	Chapter 14	Viruses, Prions, and Viroids: Infectious Agents of Animals and Plants (and class handouts)
Feb 21	Chapter 12	The Eukaryotic Members of the Microbial World (selected readings and class handouts)
Feb 23	Selected Student Articles	"Microbiology in the News"
Feb 25	EXAM #2	
Feb 28	Chapter 15	The Innate Immune Response
Mar 2	Chapter 16	The Adaptive Immune Response
Mar 4	Chapter 17	Host-Microbe Interactions
Mar 7	Chapter 18	Immunological Disorders
Mar 9	In-Class Video	
Mar 11	Review	
Mar 14-18	SPRING RECESS	
Mar 21	Chapter 19	Applications of Immune Responses
Mar 23	Classroom Discussion	"Microbiology and Society"
Mar 25	EXAM #3	
Mar 28	Chapter 20	Epidemiology

Mar 30	Chapter 21	Antimicrobial Medications
Apr 1	Chapter 21	Antimicrobial Medications
Apr 4	Chapter 22	Respiratory System Infections
Apr 6	Chapter 22	Respiratory System Infections
Apr 8	Chapter 23	Skin Infections
Apr 11	Selected Student Articles	"Microbiology in the News"
Apr 13	EXAM #4	
Apr 15	Chapter 24	Wound Infections
Apr 18	Chapter 25	Digestive System Infections
Apr 20	Chapter 26	Genitourinary Tract Infections
Apr 22	GOOD FRIDAY [No Class]	
Apr 25	Chapter 27	Nervous System Infections
Apr 27	Chapter 32	Food Microbiology: (selected readings)
Apr 29	EXAM #5	
May 2	Chapter 28	Blood and Lymphatic Infections
May 4	Chapter 29	HIV Disease and Complications of Immunodeficiency
May 6	Chapter 29 and Classroom Discussion	HIV Disease and Complications of Immunodeficiency "Microbiology and Society"

LABORATORY SCHEDULE

Monday Lab Date	**Tuesday Lab Date**	**TOPIC or ASSIGNMENT**
Jan 24	Jan 25	INTRODUCTION EXERCISE 1: Ubiquity of Microorganisms EXERCISE 3: The Compound Light Microscope
Jan 31	Feb 1	EXERCISE 6: The Gram Stain EXERCISE 2: Pure Culture and Aseptic Technique
Feb 7	Feb 8	Preparing Laboratory Media EXERCISE 7: Defined, Complex, Selective and Differential Media
Feb 14	Feb 15	VIDEO EXERCISE 8: Quantification of Microorganisms UTI diagnosis and Urine Culture Technique
Feb 21	Feb 22	EXERCISE 12: Control of Microbial Growth with U.V. Light Begin Fungal Cultures
Feb 28	Mar 1	EXERCISE 19: Microscopic Identification of Fungi EXERCISE 20: Parasitology **Deadline for Group Project Proposal**
Mar 7	Mar 8	VIDEO EXERCISE 14: Antiseptics and Antibiotics EXERCISE 22: Normal Skin Biota (*Staphylococcus*)

Mar 14	Mar 15	SPRING RECESS
Mar 21	Mar 22	EXERCISE 23: Respiratory Microorganisms Rapid-Strep ELISA Test for Group A *Streptococcus*
Mar 28	Mar 29	EXERCISE 24: Identification of Enteric Gram-Negative Rods Begin Clinical Unknown
Apr 4	Apr 5	Presentations for Group Project (Location To Be Announced)
Apr 11	Apr 12	Presentations for Clinical Unknown (Location To Be Announced)
Apr 18	Apr 19	Mononucleosis Antibody Test, Blood Culture, and Blood Typing
Apr 25	Apr 26	LABORATORY PRACTICAL EXAM
May 2	May 3	Clean-Up and Check-Out

FINAL EXAM: SECTION A, TUESDAY, MAY 10, 3:15-5:15pm
FINAL EXAM: SECTION B, WEDNESDAY, MAY 11, 3:15-5:15pm