MIDSTATE COLLEGE
411 W. NORTHMOOR RD. PEORIA, IL 61614
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Summer 2010

Course Number and Name:	HSM 305 Epidemiology for Health Services
Method of Delivery:	Classroom
Credit Hours:	4 quarter hours
Course Description:	This course emphasizes health and wellness through selected concepts in biology involving microorganisms including identification, structure, taxonomy, growth genetics, and effects on the environment. Topics will include a survey of microorganisms, the role of microorganisms in health and disease, pharmacology, sanitation, ecological and environmental roles of microbes and the role of microorganisms in biotechnology.
Prerequisite:	None
Text(s) & Manual(s):	**Microbiology for the Health Sciences**
Author(s):	Paul G. Engelkirk Gwendolyn R.W. Burton
Publisher:	Lippincott Williams & Wilkins
Edition:	eighth edition, 2007
ISBN#	0-7817-7195-1
Materials Needed:	Colored markers Flash cards Computer with Internet capability DVD Player
Topics:	1. Introduction to microorganisms and organic chemistry. 2. Physiology, chemistry and genetics of microorganisms. 3. Growth and development of microbes. 4. Microbes in our environment. 5. Public Health and nosocomial infections. 6. Sanitation, drinking water and waste water management. 7. Pollution and Bioterrorism. 8. Disease and host defense mechanisms.

9. Epidemics and Immunology.

Learning Objectives: Upon completion of this class, a student will be able to:

1. Identify and differentiate between prokaryotes and eukaryotes.
2. Compare and contrast virus and bacteria.
3. Compare and contrast algae, protozoa, and fungi.
4. Explain the role of ATP in metabolism and DNA in reproduction.
5. Understand the factors that control microbial growth in the lab, the human body and the environment.
6. Identify the role of the public health department with microbes.
7. Understand the role of microbes in illness and the threat of biological warfare.

Midstate Grading Scale:

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Midstate Plagiarism Policy:

Plagiarism is using another person's words without giving credit to the author. Original speeches, publications, and artistic creations are sources for research. If students use the author's words in a paper or assignment, they must acknowledge the source. Plagiarism is strictly against the academic policy of the college and is grounds for failing the course. If repeated, plagiarism may result in suspension from the college. (See the Midstate College catalog and/or Student Handbook for additional information.)

In courses containing writing assignments, the college promotes the use of an electronic resource which compares the student's writing against previously submitted papers, journals, periodicals, books, and web pages. Students and instructors can use this service to reduce the incidence of plagiarism. This electronic resource has been found to conform to legal requirements for fair use and student confidentiality. It is able to provide a report to the student indicating the parts of the assignment that match.

Instructor Information: Sandra Holm
Office Hours: Tuesday 5:00 p.m.-6:00 p.m.
Telephone #: 800 251-4299
E-mail: sholm@midstate.edu

Participation Requirements:

1. ***Attendance is expected, not suggested.*** Excessive absence will hurt your performance and ability to pass this class. Excessive absence is more than 1 class. If for some reason you are not able to attend class, please e-mail the instructor or call Midstate and leave a message for the instructor.
2. Students are expected to be on time. If a student must arrive late or leave during class, do so quietly and as unobtrusively as possible. Arriving late and leaving early will incur a 5 point deduction from the weekly attendance grade.

Policies and Procedures:

1. All work is to be completed on time unless unusual circumstances occur. A student will have one week maximum to complete missed assignments or tests. Ten points will be deducted from the late assignment/test as a penalty.
2. If a student misses class, the student is expected to use the course outline to determine what was missed. Class notes, assignments and tests will be placed in the library to collect during the week after the missed class. Students will have 1 week to complete the missed work incurring a 10 point penalty.
3. Missed tests will be proctored by library personnel in the library.
4. If students are late for class or leave early, the attendance/participation grade will be reduced by half.
5. ***Academic dishonesty is never tolerated and will be referred to the dean.***
6. All assignments must be hand written using black/blue ink, unless otherwise specified by the instructor. Work should be portfolio quality. Ragged edged paper is not acceptable.
7. All projects must be typed and use appropriate citation notations.
8. Please make certain your cell phone is on "vibrate". Calls can only be returned during the break. No text messaging will be allowed during class. Phones must be turned off during testing.

Methods of Evaluating Student Performance:

Attendance/Participation (10 x 5 points)	50 points
Projects (1)	150 points
Chapter Tests	600 points
Final Exam	150 points
Total	950 points

Course Outline
HSM 305 Epidemiology for Health Services
Summer 2010

Week 1 **Chapter 1, Overview of Chapters 17 & 18**

Chapter 1 includes an introduction of microbiology covering topics such as the first microorganisms on earth, earliest known infectious diseases and pioneers in the science of microbiology.

Objectives:
1. Identify and differentiate between prokaryotes and eukaryotes.
2. Compare and contrast virus and bacteria.
3. Compare and contrast algae, protozoa, and fungi.

Assignment: Create flash cards for 25 diseases and study for disease quiz.
Answer end of chapter questions.

Week 2 **Chapter 2, Disease Quiz # 1**

Student will learn to use the metric system to express sizes of microorganisms and study different types of microscopes to view microorganisms in chapter 2.

Objectives:
1. Compare and contrast virus and bacteria.
2. Compare and contrast algae, protozoa, and fungi.

Assignment: Create flash cards for 25 diseases.
Answer end of chapter questions

Week 3 **Chapter 3, Reports**

Chapter 3 focuses attention on cell structure and taxonomy of eukaryotic and prokaryotic cells.

Objective: 1. Identify and differentiate between prokaryotes and eukaryotes.
Assignment: Study for test on chapters 2 and 3

Week 4 **Chapters 4 and 5, Reports**

Chapters 4 and 5 concentrate on the diversity of microorganisms, in particular acellular infectious agents, prokaryotic and eukaryotic microbes.

Objectives:
1. Identify and differentiate between prokaryotes and eukaryotes.
2. Compare and contrast algae, protozoa and fungi.

Assignment: Study for test on chapters 4 and 5

Week 5 **Chapters 6 and 7**

A discussion of the chemistry of life is covered in chapter 6. Chapter 7 focuses attention on microbial physiology, metabolic enzymes, metabolism, bacterial genetics, genetic engineering and gene therapy.

Objective: 1. Explain the role of ATP in metabolism and DNA in reproduction.
Assignment: Study for test on 25 diseases.
Take home test on chapters 6 & 7

Week 6 **Chapters 8, Reports, Disease Quiz #2**

Chapter 8 deals with factors that affect microbial growth including encouraging growth of microorganisms in vitro and inhibiting growth of microorganisms in vitro.

Objective: 1. Understand the factors that control microbial growth in the lab, the human body and the environment.
Assignment: Study for test on chapter 8

Week 7 **Chapters 9 and 10, Movie "Antibiotics, The Double-Edged Sword"**

Chapter 9 looks at ideal qualities of antimicrobial agents and how antimicrobial agents work. Microbial ecology is discussed in chapter 10.

Objectives: 1. Understand the factors that control microbial growth in the lab, the human body and the environment.
2. Identify the role of the public health department with microbes.
3. Understand the role of microbes in illness and the threat of biological warfare.
Assignment: Study for test on chapters 9 and 10

Week 8 **Chapters 11 and 12, Reports**

The chain of infection, reservoirs of infection and modes of transmission of diseases are discussed in chapter 11. Chapter 12 is concerned with nosocomial infections and infection control.

Objectives: 1. Understand the factors that control microbial growth in the lab, the human body and the environment.
2. Identify the role of the public health department with microbes.
3. Understand the role of microbes in illness and the threat of biological warfare.
Assignment: Study for tests on chapters 11 & 12

Week 9 **Chapters 13 and 14, Movie "Bioterror: The Invisible Enemy"**

Chapter 13 focuses attention on diagnosing infectious diseases using the pathology department and clinical microbiology laboratory. Chapter 14 covers the pathogenesis of infectious diseases including the four phases of the course of an infectious disease, symptoms of a disease versus signs of a disease, and virulence factors.

Objectives: 1. Understand the factors that control microbial growth in the lab, the human body and the environment.
2. Identify the role of the public health department with microbes.
3. Understand the role of microbes in illness and the threat of biological warfare.
Assignment: Take home test on Chapters 13 and 14

Week 10 **Chapters 15 and 16, Reports**

Nonspecific host defense mechanisms and first and second line of defense against disease are topics covered in Chapter 15. Chapter 16 continues with specific host defense mechanisms against disease, in particular immunity, humoral immunity, cell-mediated immunity, hypersensitivity and immunosuppression.

Objective: 1. Understand the role of microbes in illness and the threat of biological w warfare.
Assignment: Study for test on chapter 15.

Week 11 **Chapters 17 & 18, Review for Final**

Chapters 17 and 18 introduce the student to major viral, bacterial, fungal and parasitic diseases of humans by organ systems.

Objective: 1. Understand the role of microbes in illness and the threat of biological warfare.
Assignment: Study for final exam.

Week 12 **Final Exam**