



North Central State College  
MASTER SYLLABUS  
2020-2021

- A. Academic Division: Health Sciences
- B. Discipline: Science
- C. Course Number and Title: BIOL1550 Microbiology for Health Professionals
- D. Course Coordinator: Jeff Taylor, M.S.  
Assistant Dean: Melinda Roepke, MSN, RN

Instructor Information:

- Name: [Click here to enter text.](#)
- Office Location: [Click here to enter text.](#)
- Office Hours: [Click here to enter text.](#)
- Phone Number: [Click here to enter text.](#)
- E-Mail Address [Click here to enter text.](#)

- E. Credit Hours: 3  
Lecture: 2 hours  
Laboratory: 2 hours
- F. Prerequisites: None
- G. Syllabus Effective Date: Fall, 2020
- H. Textbook(s) Title:

*Microbiology for the Health Sciences*

- Authors: Burton and Engelkirk
- Copyright Year: 2011
- Edition:
- ISBN #: 978-1605-4767-35

- I. Workbook(s) and/or Lab Manual: Course lab manual provided by instructor.
- J. Course Description: This course is designed for allied health and nursing majors. It explores the major groups of microorganisms and the role they play in the environment and in disease. The host-parasite relationship, human immunity to disease, epidemiology, and the control of microorganisms are also addressed. Laboratory exercises provide the student with the basic techniques of microbial identification, microscopy, sterile technique, and basic infection control.
- K. College-Wide Learning Outcomes

College-Wide Learning Outcomes	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	

College-Wide Learning Outcomes	Assessments - - How it is met & When it is met
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Identify the major historical figures and describe their contribution to the development of modern microbiology.	Lecture quizzes and exams the first third of the semester and end of the semester.
2. Identify the major characteristics of bacteria, including morphology, metabolism, and growth characteristics.	Lecture quizzes and exams the first third of the semester and end of the semester. Lab quizzes the first third of the semester.
3. Describe the major characteristics of the non-bacterial microbes including the Rickettsias, Chlamydias, Fungi, and Protozoa.	Lecture quizzes and exams the second third of the semester and end of the semester.
4. Identify the structure of viruses and describe the cycles of viral reproduction.	Lecture quizzes and exams the second third of the semester and end of the semester.
5. Describe patterns and dynamics by which disease spreads through a human population.	Lecture quizzes and exams the second third of the semester and end of the semester. Lab quiz last week of semester.
6. Identify common pathogens that cause disease in humans and describe some of the basic chemotherapeutic treatments for the disease.	Lecture quizzes and exams throughout the semester.
7. Describe the physical and chemical control methods for microorganisms.	Lecture quizzes and exams throughout the semester. Lab quizzes following Lab Exercises 10, 11, 13, and 14 (in Lab Content section).
8. Become acquainted with common staining and culture techniques used to study microorganisms in the laboratory.	Lab quizzes following Lab Exercises 4 - 8 (in Lab Content section).

M. Topical Timeline (Subject to Change):

1. The History and Development of Modern Microbiology
2. Comparisons of Prokaryotes and Eukaryotes
3. Survey of Microorganisms and Techniques for Study
4. Bacterial Morphology
5. Bacterial Metabolism and Growth Characteristics
  - a. Enzymes and energy production
  - b. Bacterial nutrition and growth curves
  - c. Bacterial genetics
6. Major Bacterial Diseases in Humans
7. Rickettsia and Chlamydias
8. Viruses
  - a. Structure and characteristics
  - b. Reproductive cycle
9. Major Viral Diseases in Humans
10. Fungi
11. Algae
12. Protozoans
13. Epidemiology

14. Infection and Bacterial Invasiveness
  - a. Parasite invasiveness
  - b. Host resistance and immunity
  - c. Vaccines
15. Control of Microorganisms
  - a. Physical methods
  - b. Chemical methods
  - c. Antibiotics

Laboratory Content:

1. Safety in the Microbiology Lab
2. Use of the Microscope
3. Growth of Bacteria and Fungi
4. Smear Preparation
5. Negative Staining
6. Simple Staining
7. Gram Staining
8. Spore Staining
9. Pure Culture Techniques
10. Ultraviolet Light
11. Disinfectants and Antiseptics Evaluation
12. Bacterial Population Counts
13. Effects of Temperature on Bacterial Growth
14. Kirby-Bauer Antimicrobial Sensitivity Testing
15. Lactobacillus Activity
16. Handwashing
17. Throat Culture/Classes of Hemolytic Bacteria
18. Epidemiology Lab Exercise
19. Identification of an Unknown

N. Course Assignments:

1. Lecture quizzes
2. Lecture exams
3. Lab quizzes
4. Graded lab handouts
5. Final exam

O. Recommended Grading Scale:

<b>NUMERIC</b>	<b>GRADE</b>	<b>POINTS</b>	<b>DEFINITION</b>
93-100	A	4.00	Superior
90-92	A-	3.67	Superior
87-89	B+	3.33	Above Average
83-86	B	3.00	Above Average
80-82	B-	2.67	Above Average
77-79	C+	2.33	Average
73-76	C	2.00	Average
70-72	C-	1.67	Below Average
67-69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

P. Grading and Testing Guidelines:

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Q. Examination Policy:

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R. Class Attendance and Homework Make-Up Policy:

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S. Classroom Expectations:

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T. College Procedures/Policies:

**Important information regarding College Procedures and Policies can be found on the [syllabus supplement](#) located at**

**<http://catalog.ncstatecollege.edu/mime/download.pdf?catoid=5&ftype=2&foid=3>**