

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: MLT 1401C

COURSE TITLE: Medical Microbiology

PREREQUISITE(S): None

COREQUISITE(S): None

CREDIT HOURS: 4

CONTACT HOURS/WEEK: 6

CONTACT HOUR BREAKDOWN:

Lecture/Discussion:

Laboratory:

Other _____: 6 (Lecture/laboratory combination)

FACULTY WORKLOAD POINTS: 6

STANDARDIZED CLASS SIZE ALLOCATION: 20

CATALOG COURSE DESCRIPTION:

This course presents students with instruction in the theory, taxonomy, identification, clinical relevance and laboratory procedures associated with the microbiological agents of infectious disease including clinically significant bacteria, mycobacteria, mycoplasma, chlamydia, rickettsia and viruses. Methods of susceptibility testing are also included.

SUGGESTED TEXT(S): Textbook of Diagnostic Microbiology, Mahon, Lehman, Manuselis, Elsevier. Latest Edition,

IMPLEMENTATION DATE: January, 1989

REVIEW OR MODIFICATION DATE: Fall Term, 2002 (20031)
Fall Term, 2008 (20091) - Outline Review 2007

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Introduction	2
A. Lab Safety	
B. Overview of Clinical Microbiology	
II. Epidemiology	4
A. Terminology	
B. Nosocomial Infections	
C. Prevention	
D. Sterile Technique	
III. Specimen Collection and Handling	4
A. Specimen Identification	
B. Acceptability Criteria	
C. Collection and Transport	
D. Culture Protocols	
IV. Staphylococcus and Micrococcus	12
A. Identification	
B. Pathogenicity	
C. Treatment	
V. Streptococcus	11
A. Identification	
B. Pathogenicity	
C. Treatment	
VI. Neisseria	4
A. Identification	
B. Pathogenicity	
C. Genital Culture	
D. Sexually Transmitted Disease	
VII. Gram Negative Coccobacilli	6
A. Haemophilus	
B. Miscellaneous	
C. CSF Culture	
VIII. Blood and Urine Cultures	4
A. Blood Cultures	
1. Procedure	
2. Etiology	
B. Urine Cultures	
1. Procedure	
2. Etiology	

COURSE TOPICS (CONTINUED)	<u>CONTACT HOURS PER TOPIC</u>
IX. Enterobacteriaceae	15
A. Enteric Flora	
B. Pathogens	
C. Biochemical Panels	
X. Non-Fermentative Gram Negative Bacilli and Coccobacilli	6
A. Pseudomonas	
B. Miscellaneous	
XI. Antimicrobial Testing	6
A. Types of Antibiotics	
B. Test Methods	
XII. Gram Positive Bacilli	4
A. Bacillus	
B. Corynebacterium	
C. Miscellaneous	
XIII. Anaerobic Organisms	2
A. Isolation and Identification Procedures	
B. Gram Positive Bacilli	
C. Gram Negative Bacilli	
D. Anaerobic Cocci	
XIV. Mycobacteria	2
A. Classification	
B. Identification	
XV. Chlamydia, Rickettsia, Mycoplasma	2
A. Classification	
B. Pathology	
C. Identification Techniques	
XVI. Virology	4
A. Classification	
B. Pathology	
C. Identification Techniques	
XVII. Oral Communication Skills/Oral Report	2

PROGRAM TITLE: Medical Laboratory Technology

COURSE TITLE: Medical Microbiology

CIP NUMBER: 0317.0309000

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLES(S):

20.0 DEMONSTRATE BASIC KNOWLEDGE OF MICROBIOLOGY, PERFORM CLINICAL LABORATORY "WAIVED TESTS" -- The student will be able to:

- 20.01 Perform techniques of microbiology related to disinfection techniques.
- 20.02 Discuss techniques of microbiology related to isolation techniques.
- 20.03 Perform techniques of microbiology related to sterilization techniques.
- 20.04 Perform techniques of microbiology related to preparation, staining.
- 20.05 Understand the microscopic examination of gram stains.
- 20.06 Discuss techniques of microbiology related to inoculation and transfer of cultures.
- 20.07 Perform basic techniques of microbiology.
- 20.08 Perform techniques of microbiology related to preparation of artificial culture media.
- 20.09 Discuss techniques of microbiology related to principles and use of the microscope.

25.0 DISCUSS ANATOMY AND PHYSIOLOGY OF THE HUMAN BODY AS IT RELATES TO THE FIELD OF MEDICAL LABORATORY TECHNOLOGY -- The student will be able to:

- 25.01 Identify the major body systems and their anatomical features.
- 25.02 Explain the physiology processes in the human system necessary to influence and maintain homeostasis.

26.0 DISCUSS THE GENERAL RESPONSIBILITIES AND FUNCTIONS ENCOUNTERED BY A MEDICAL TECHNICIAN -- The student will be able to:

- 26.01 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions.
- 26.02 Organize and communicate the results obtained by observation and experimentation.
- 26.03 Demonstrate ability to evaluate and draw conclusions.
- 26.04 Demonstrate knowledge of anatomy and physiology of body systems.
- 26.05 Demonstrate ability to report observations in written or oral form.

27.0 APPLY QUALITY ASSURANCE PRINCIPLES AND SAFETY PROTOCOLS -- The student will be able to:

- 27.01 Recognize specimen suitability and determine need for rejection/recollection using factors described in clinical protocol.
- 27.02 Describe special procedures for transporting and processing specimens.
- 27.03 Describe clinical laboratory role in providing quality assurance in laboratory testing, reporting, and use and maintenance.
- 27.04 Demonstrate all required calibration procedures.

LIST PERFORMANCE STANDARD ADDRESSED: (CONTINUED)

NUMBER(S): TITLES(S):

- 27.05 Demonstrate and record all quality control procedures unacceptable results.
- 27.06 Identify and report problems encountered in daily quality control according to standard operating procedures.
- 27.07 Adhere to current OSHA regulations regarding laboratory hazards.

31.0 DEMONSTRATE KNOWLEDGE OF MICROBIOLOGICAL PRINCIPLES AND PROCEDURES -- The student will be able to:

- 31.01 Discuss microbial taxonomy and classification.
- 31.02 Discuss bacterial metabolism, reproduction, cell structures and their functions.
- 31.03 Discuss and perform disinfection and sterilization techniques.
- 31.04 Discuss classification, composition and preparation of culture media.
- 31.05 Discuss specimen collection, handling, and culturing techniques for urine, stool, wound, throat, body fluids, blood and exudates.
- 31.06 Demonstrate bacteriologic culture techniques necessary for isolation and identification of organisms.
- 31.07 Demonstrate and interpret antibiotic susceptibility tests.
- 31.08 Discuss diseases associated with selected anaerobic and aerobic bacteria.
- 31.09 Identify commonly encountered aerobic bacteria through morphological, physical and biochemical properties.
- 31.10 Discuss the principles of, prepare, and interpret Gram stains.
- 31.11 Discuss collection and handling specimens for fungal, mycobacterial and viral specimens.

40.0 DEMONSTRATE KNOWLEDGE OF ADVANCED MICROBIOLOGICAL PRINCIPLES AND PROCEDURES -- The student will be able to:

- 40.09 Identify commonly used antibiotics, their usage and mechanisms of activity.



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

Section 1	
COURSE PREFIX AND NUMBER: MLT 1401C	SEMESTER CREDIT HOURS: 4
COURSE TITLE: Medical Microbiology	

Section 2		
TYPE OF COURSE: (Click on the box to check all that apply)		
<input type="checkbox"/> AA Elective	x	<input checked="" type="checkbox"/> AS Required Professional Course
<input type="checkbox"/> AS Professional Elective	x	<input type="checkbox"/> AAS Required Professional Course
<input type="checkbox"/> Other	<input type="checkbox"/>	<input type="checkbox"/> PSAV
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)		<input type="checkbox"/> College Prep
		<input type="checkbox"/> Technical Certificate
		<input type="checkbox"/> Apprenticeship

Section 3 (If applicable)		
INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:		
<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

Section 4					
INTELLECTUAL COMPETENCIES:					
x Reading	x Speaking	x Critical Analysis	x Quantitative Skills	<input type="checkbox"/> Scientific Method of Inquiry	
<input type="checkbox"/> Writing	x Listening	x Information Literacy	<input type="checkbox"/> Ethical Judgment	<input type="checkbox"/> Working Collaboratively	

Section 5		METHOD OF ASSESSMENT
	LEARNING OUTCOMES	
1	Explain and apply major concepts in medical microbiology.	Quizzes and tests
2	Demonstrate the ability to identify unknown microorganisms using problem solving and critical thinking.	Students will identify unknown organisms and report results in the correct format.
3	Demonstrate the ability to follow oral instructions to correctly perform lab procedures.	Instructor observation of students performing lab procedures, results from assigned labs
4	Demonstrate the ability to research and communicate professional information to others in an appropriate format.	Students research, prepare and present a short program on one microorganism or disease.
5	Demonstrate safety and proper laboratory technique in the handling of lab equipment and biohazardous and chemically hazardous materials.	Quizzes, instructor observation, results from assigned labs
6	Demonstrate the ability to multitask in the lab.	Performance on multitasking assignments
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Section 6	
Name of Person Completing This Form: Rhoda Jost	Date: November 1, 2007