



**CLBT 1080 Microbiology
Course syllabus
Spring 2017**

Semester: Spring 2017
Course Title: Microbiology
Course Number: CLBT 1080
Credit Hours/ Minutes: 5/7500
Class Location: Room #739 Gillis Building
Class Meets: MTW 8:30-11:50
CRN: 40229

Instructor: Cynthia Williams, MS, MT(AMT)(HHS)
Office Hours: 7:30-8am;3:30-5pm
Office Location:716 Gillis Building
Email Address: cwilliams@southeasterntech.edu
Phone: 912-538-3183
Fax Number: 912-538-3106

**REQUIRED TEXT: Textbook of Diagnostic Microbiology; 4th ed. by Connie Mahon et.al
Published by Saunders; Microbe Cards by Mark Peppler**

REQUIRED SUPPLIES & SOFTWARE: Ink pens, pencil, highlighter, permanent marker, paper and any other supplies deemed necessary by instructor. Calculator is provided.

METHODS OF INSTRUCTION:

May include, but not limited to, lectures, discussions, videos, laboratory skills, and handouts.

COURSE DESCRIPTION: Introduces fundamental microbiology and parasitology theory and techniques applicable to disease state identification. Topics include: microbiology fundamentals; basic techniques; clinical microbiology; related lab math; anti-microbial sensitivity; safety and quality control; parasitology; mycology, mycobacteriology, and virology; correlation of disease states; and process improvement.

MAJOR COURSE COMPETENCIES:

1. Microbiology Fundamentals
2. Basic techniques
3. Clinical Microbiology
4. Related lab math
5. Anti-Microbial Sensitivity
6. Safety and quality control
7. Parasitology
8. Mycology, Mycobacteriology, and Virology
9. Correlation of Disease States
10. Process Improvement

General Core Educational Competencies: STC has identified the following general education core competencies that graduates will attain:

- a) The ability to utilize standard written English.
- b) The ability to solve practical mathematical problems.
- c) The ability to read, analyze, and interpret information.

PREREQUISITE(S): All Required

Learning Outcomes

Microbiology fundamentals

Order	Description	Learning Domain	Level of Learning
1	Discuss basic concepts of microbial classification, growth, reproduction, and metabolism.	Cognitive	Comprehension
2	Compare and contrast eukaryotes and prokaryotes.	Cognitive	Synthesis
3	Discuss infection and disease processes.	Cognitive	Comprehension
4	Describe media composition and their uses within the clinical microbiology laboratory.	Cognitive	Comprehension

Basic techniques

Order	Description	Learning Domain	Level of Learning
1	Describe selected media composition and uses.	Cognitive	Comprehension
2	Describe essential collection, transport, and handling procedures.	Cognitive	Comprehension
3	Determine appropriate media for use in isolating pathogenic microorganisms.	Cognitive	Application
4	Perform selected setups.	Psychomotor	Guided Response
5	Perform and read gram stains of clinical specimens and bacterial isolates.	Psychomotor	Guided Response
6	Differentiate between sterilization and disinfection.	Cognitive	Analysis

Clinical microbiology

Order	Description	Learning Domain	Level of Learning
1	Discuss culture characteristics and isolation techniques of selected gram positive and gram negative cocci.	Cognitive	Comprehension
2	Perform confirmatory tests for identifying clinically significant cocci including Staphylococcus, Streptococcus, and Neisseria.	Psychomotor	Guided Response

3	Relate pathogens to disease state.	Cognitive	Analysis
4	Discuss culture characteristics of selected clinically significant gram negative bacilli.	Cognitive	Comprehension
5	Discuss biochemical reactions used in identifying gram negative bacilli including enterics/fermenters, Haemophilus, and nonfermenters.	Cognitive	Comprehension
6	Perform selected confirmatory tests for identifying clinically significant gram negative bacilli.	Psychomotor	Guided Response
7	Discern pathogens from normal/ transient flora at selected body sites.	Cognitive	Analysis
8	Relate pathogens to disease state.	Cognitive	Analysis
9	Describe basic identification procedures of selected species including spore formers, nonspore formers, and anaerobes.	Cognitive	Comprehension
10	Describe anaerobe collection, transport, and processing.	Cognitive	Comprehension
11	Relate pathogens to disease state.	Cognitive	Analysis
12	Discuss and perform sub culture techniques.	Cognitive	Comprehension

Related lab math

Order	Description	Learning Domain	Level of Learning
1	Demonstrate knowledge and ability to use laboratory math to calculate and solve problems related to microbiology.	Psychomotor	Guided Response
2	Perform related math calculations for metric system, measuring susceptibility testing, simple dilutions, serial dilutions, ratio of blood to broth blood culture, and conversion of ocular micrometer measurements using ratio & proportion.	Cognitive	Synthesis

Anti-microbial sensitivity

Order	Description	Learning Domain	Level of Learning
1	Discuss methods of anti-microbial susceptibility testing including MIC and Kirby-Bauer.	Cognitive	Comprehension
2	Perform and interpret Kirby-Bauer and MIC sensitivities.	Psychomotor	Guided Response

Safety and quality control

Order	Description	Learning Domain	Level of Learning
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1	Discuss and adhere to safety and quality control measures associated with handling clinical specimens and disease producing organisms.	Cognitive	Comprehension
2	Demonstrate appropriate safety techniques and universal precautions.	Psychomotor	Guided Response
3	Discuss and perform quality control of selected media and reagents.	Cognitive	Comprehension

Parasitology

Order	Description	Learning Domain	Level of Learning
1	Recall the scientific and common names of selected parasites including protozoa, ciliates, nematodes, trematodes, malaria, and cestodes.	Cognitive	Knowledge
2	State parasitic forms which cause diseases.	Cognitive	Knowledge
3	Perform standard identification procedures.	Psychomotor	Guided Response
4	Recognize the diagnostic stage of selected parasites.	Cognitive	Analysis
5	Relate pathogens to disease state.	Cognitive	Analysis
6	Determine specimen collection, transport, and processing for commonly encountered parasites.	Cognitive	Application

Mycology, mycobacteriology, and virology

Order	Description	Learning Domain	Level of Learning
1	Discuss special media, processing techniques, and identification procedures for fungi, mycobacteria, and viruses.	Cognitive	Comprehension
2	Recognize selected mycology isolates.	Cognitive	Analysis
3	Perform and/or read AFB smears.	Psychomotor	Guided Response
4	Discuss basic viral structure and reproduction.	Cognitive	Comprehension
5	Relate commonly encountered pathogens to disease state.	Cognitive	Analysis

Correlation of disease states

Order	Description	Learning Domain	Level of Learning
1	Evaluate laboratory data to determine causative agent, antimicrobial resistance, and source of specimen to correlate	Cognitive	Evaluation

	with disease states.		
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Process improvement

Order	Description	Learning Domain	Level of Learning
1	Discuss methods used to improve performance in the microbiology laboratory, including importance of the infection control functions of this department.	Cognitive	Comprehension

STUDENT REQUIREMENTS: Students are expected to complete all tests, assignments, and Laboratory Reports by the due dates. *A ten point penalty will be assessed for each day an assignment or Laboratory Report is late.* Students are required to pass all laboratory skills in three attempts. A student may not progress until skills are mastered. Students are responsible for policies, procedures, and requirements (drug screen, background check, immunizations, Fit test, CPR...) included in the *STC Catalog/CLT handbook*. *Students are required to read the chapter prior to class. Test will be timed. Points will be deducted for spelling due to Medical Liability in the work place. Laboratory results are legal documents.*

No cell phones allowed. If you are caught using the cell phone, you will be asked to leave class and receive an “early departure” for the class. (Note: Three (3) tardies or early departures equal one (1) absence for the course involved.) **If you are 30 minutes late to class, you will receive an absence for the day.**

STC ATTENDANCE POLICY: It is essential that educational programs maintain requirements and standards necessary for successful employment of its graduates in business and industry. In view of the intensive nature of the educational programs, it is necessary for every student to be present and on time every day for all classes.

Attendance is counted from the first scheduled class meeting of each semester. To receive credit for a course a student must attend at least 90% of the scheduled instructional time. All work missed due to tardiness or absences must be made up at the convenience of the instructor. Any student attending less than the required scheduled instructional time as noted on each syllabus will receive a "W" for the course if removed from the course on or before the 65% portion of the semester (see STC's calendar on our website for the actual date of the 65% point). After the 65% portion of the semester, the student has earned the right to a letter grade and will receive a grade for the course. Tardy means arriving after the scheduled time for instruction to begin. Early departure means leaving before the end of the scheduled time. Three (3) tardies or early departures equal one (1) absence for the course involved. If you are 30 minutes late to class, you are considered absent for the day.

Withdrawing from Learning Support and/or College Success and Survival Skills courses are not permitted unless the student intends to withdraw totally from the College.

TRADITIONAL ATTENDANCE ADDENDUM: For this class, which meets 3 days a week for 15 weeks, the maximum number of days a student may miss is 5 days during the semester.

SPECIFIC ABSENCES: Provisions for Instructional Time missed because of documented absences due to jury duty, military duty, court duty, or required job training will be made at the discretion of the instructor.

SPECIAL NEEDS: Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact Helen Thomas, 912-538-3126, hthomas@southeasterntech.edu, to coordinate reasonable accommodations.

PREGNANCY:

Southeastern Technical College does not discriminate on the basis of pregnancy. However, we can offer accommodations to students who are pregnant that need special consideration to successfully complete the course. If you think you will need accommodations due to pregnancy, please advise me and make appropriate arrangements with the Special Needs Office. Swainsboro Campus: Jan Brantley, Room 1208, (478) 289-2274 -- Vidalia Campus: Helen Thomas, Room 108, (912) 538-3126.

MAKEUP GUIDELINES: Exams or labs missed for any reason will be made up at the discretion of the instructor. A maximum of one exam can be made up. **If more than one exam is missed the student will only be allowed to make up the first exam missed and a grade of "0" will be awarded for any other missed exams including the final. If you are 30 minutes late for class, you are considered absent and missed the test. Remember, the first test can be made up and the second will be a zero this includes the final.**

ACADEMIC DISHONESTY POLICY: The STC Academic Dishonesty Policy states *All forms of academic dishonesty, including but not limited to cheating on tests, plagiarism, collusion, and falsification of information, will call for discipline.* The policy can also be found in the *STC Catalog and Student Handbook*.

Procedure for Academic Misconduct

The procedure for dealing with academic misconduct and dishonesty is as follows:

--First Offense--

Student will be assigned a **grade of "0" for the test** or assignment. Instructor keeps a record in course/program files and notes as first offense. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus. The Registrar will input the incident into Banner for tracking purposes.

--Second Offense--

Student is given a grade of **"WF" for the course** in which offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of second offense. The Registrar will input the incident into Banner for tracking purposes.

--Third Offense--

Student is given a grade of **"WF" for the course** in which the offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a

"WF" has been issued as a result of second offense. The Vice President for Student Affairs, or designee, will notify the student of **suspension from college** for a specified period of time. The Registrar will input the incident into Banner for tracking purposes.

STATEMENT OF NON-DISCRIMINATION: The Technical College System of Georgia and its constituent Technical Colleges do not discriminate on the basis of race, color, creed, national or ethnic origin, sex, religion, disability, age, political affiliation or belief, genetic information, disabled veteran, veteran of the Vietnam Era, spouse of military member or citizenship status (except in those special circumstances permitted or mandated by law). This school is in compliance with Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, or national origin; with the provisions of Title IX of the Educational Amendments of 1972, which prohibits discrimination on the basis of gender; with the provisions of Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of handicap; and with the American with Disabilities Act (ADA).

The following individuals have been designated to handle inquiries regarding the nondiscrimination policies:

ADA/Section 504 - Equity- Title IX (Students) - OCR Compliance Officer	Title VI - Title IX (Employees) - EEOC Officer
Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1 st Street, Vidalia Office 108 Phone: 912-538-3126 hthomas@southeasterntech.edu	Blythe Wilcox, Director of Human Resources Vidalia Campus 3001 East 1 st Street, Vidalia Office 138B Phone: 912-538-3147 bwilcox@southeasterntech.edu

GRIEVANCE PROCEDURES: Grievance procedures can be found in the Catalog and Handbook located on STC's website.

ACCESS TO TECHNOLOGY: Students can now access Blackboard, Remote Lab Access, Student Email, Library Databases (Galileo), and BannerWeb via the mySTC portal or by clicking the Current Students link on the STC website at www.southeasterntech.edu.

GRADING: *Chapter test average of 70 or higher is required to sit for the comprehensive final (grades of 69.99 will not be rounded up).* Your grade for the course will be the average of your chapter exams. **Only one makeup exam will be given for chapter test. If you miss a second exam you will receive a zero for the second exam missed. You MUST pass all skills in this course to pass this course.** Test and labs will be timed. Points will be deducted for spelling due to Medical Liability in the work place. Laboratory results are legal documents. **NO GRADES WILL BE DROPPED!!!** You must receive a "C" or higher in all CLBT, core, and clinical courses to progress in the CLT program.

GRADING POLICY:

<i>Chapter Tests</i>	60%
<i>Microbe Card Tests</i>	10%
<i>Laboratory Reports</i>	5%
<i>Comprehensive Final Test</i>	25%

GRADING SCALE

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

TCSG GUARANTEE/WARRANTY

STATEMENT: *The Technical College System of Georgia guarantees employers that graduates of State Technical Colleges shall possess skills and knowledge as prescribed by State Curriculum Standards. Should any graduate employee within two years of graduation be deemed lacking in said skills, that student shall be retrained in any State Technical College at no charge for instructional costs to either the student or the employer.*

CLBT 1080 Microbiology SPRING SEMESTER 2016 LESSON PLAN				
Lesson Plan is subject to change at the discretion of the instructor.				
Week	Chap / Less	Content	Assignments & Tests Due	Comp Area
Week 1 & 2 January 9-12; 17-19 Holiday Jan 16!!				
1 & 2	1-8	Syllabi review 1-Bacterial Cell structure, Physiology, Metabolism and Genetics 2-Host –Parasite Interaction 3-Lab Role in infection Control 4-Control of Microorganisms 5-Performance Improvement in the Microbiology Lab 6-Specimen Collection and Processing 7 Microscopic Examination of Infected Materials 8-Use of Colony Morphology for the presumptive ID of Microorganisms	TCSG standards Bacteria and virus video 45 minutes Specimen hold chart Microbiology and Parasitology power points on M Drive/ CLT folder/Micro	Course 1,3,3,6 Core A,B,C
Week 3 January 23-26				
3	14&15	Staphylococci Streptococcus, Enterococcus and other catalase neg GPC	Test 1-8 1-Gram stain, media, S/O QC stock cultures Review microbe card for each organism. 2-catalase and coagulase/gram	Course 1,2,3,9 Core A,B,C

			stain staph 3-Strep ID/gram stain strep Begin bacteria identification chart	
Week 4 Jan. 30-Feb.2				
4	16	Aerobic GPB	Gram stain Direct Atlas Hemolysis skills assessment	Course 1,2,3,9 Core A,B,C
Week 5 Feb. 6-9				
5	17 &18	Neisseria/Moraxella Haemophilus and other GNB	Test 14,15,16 Direct Atlas /Gram stain Oxidase	Course 1,2,3,9 Core A-C
Week 6 Feb. 13-16				
6	9 &19	9-Biochemical ID of GN bacteria 19-Enterobacteriaceae	4-Enterotube Gram stain Microscan video ID organism lab	Course 1,2,3,9 Core A-C
Week 7 Feb.20-23				
7	20	Vibrio, Aeromonas, Plesiomonas and Campylobacter	Test 17,18,9,19 Direct Atlas- Campy	Course 1,2,3,9 Core A-C
Week 8 Feb.27- March 2				
8	21	Non-fermenting and miscellaneous GNB MID TERM!!	Oxidase	Course 1,2,3,9 Core A-C
Week 9 March 6-9				
9	22	Anaerobe Blood cultures	ANA pac/ candle jar/Betalactamase	Course 1,2,3,9 Core A-C
Week 10 March 13-16				

10	12 &13	12-Antibiotic Mechanisms of Action and Resistance 13- Antimicrobial Susceptibility Media	Test 20,21,22 Antibiotic Resistance/ Source/Plate Review media Quality Control Betalactamase Kirby- Bauer/MIC/D test	Course 1,2,3,4,5,6,9 Core A-C
Week 11 March 20-23				
11	23,24, 25	23-Spirochetes 24-Chlamydia Rickettsia 25- Mycoplasma and Ureaplasma	Atlas Review cold agglutinin procedure	Course 1,2,3,9 Core A-C
Week 12 March 27-30				
12	26,27, 29	26- Mycobacterium 27- Mycology 29- Virology	Test 12,13,23,24,25 Kinyon stain Virus video 54 minutes power point pictures of positive stains Breadmold-LPCB stain India Ink stain	Course 1,2,3,5,8 Core A-C
Week 13 April 3-6				
13	28	28-Parasitology	Test 26,27,29 View permanent slides	Course 1,2,3,7,9 Core A-C
Week 14 April 10-13				
14	28	28-Parasitology	View permanent slides	Course 1,2,3,7,9 Core A-C
Week 15 April 17-20				
15	28	28-Parasitology	View permanent slides Trip to MRMC	Course 1,2,3,7,9 Core A-C

Week 16 April 24/ Final 26 & 27				
16		Review Finals	Test 28 TCSG standards due Comprehensive Final Microbe card test	Course 1-10 Core A-C

MAJOR COURSE COMPETENCIES:

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