I. Introduction

CLT:101 was designed to acquaint the student with the theory and principles of microorganisms and human disease. Growth requirement of microorganisms with consideration of media, biochemical reactions, susceptibility testing will be studied. Application of theory will be practiced in laboratory sessions. (3 credit hour; Prerequisite - Admission to the Program.)

The course has been organized into four (4) major units of instruction as listed below:

Unit I  - Introduction to Microbiology
Unit II  - Principles of Infectious Disease
Unit III - Infectious Diseases
Unit IV  - Common Isolates

Each unit will consist of one or more lessons that will be accompanied by a classroom copy sheet for each lesson which includes the following:

Unit Number and Title
Scope of Unit Statement
Title of Lesson
Lesson Objectives
Informational Assignment (if applicable)
Classroom or Laboratory Activities (if applicable)
Interaction Items

This course meets on Tuesday, Wednesday (1:00 PM - 2:50 PM), and Thursday (12:00 – 1:50 PM); in B417.

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Appointments should be made at a mutually convenient time, by calling the instructor. Walk-in meetings are taken on a first come, first serve basis. Prior appointments and commitments will take priority over walk-in meetings.

II. Course Objectives

Upon successful completion of the course, the student should be able to:

1. Explain the development of microbiology as a science, (Unit I).

2. Explain and demonstrate the morphology, physiology, cultivation and control of microorganisms. Relate the process of infection in man and how our bodies defend us against microbial invasion (Unit II).
3. Discuss the different types of infectious diseases from a culture site viewpoint (Unit III).

4. Demonstrate the characteristics of organisms commonly isolated from clinical specimens to include biochemicals used in their identification (Unit IV).

5. Work with others in a cooperative manner and as an equal partner.

6. Work safely in the laboratory.

III. Expected Outcomes:

The student should:
1. Identify significant contributions made by individuals, as microbiology evolved as a science.

2. Apply their knowledge of the morphology, physiology, cultivation and control of microorganisms to the processing of specimens in the microbiology laboratory. Practice infection control procedures and identify compromised patients.

3. Relate laboratory findings from various body sites, to common infectious diseases.

4. Use the characteristics observed on an isolate, to select biochemicals and identify unknown microorganisms.

5. Interact with classmates in a cooperative, respectful, manner; demonstrating preparation for and involvement in the assigned learning activity.

6. Apply principles of safety.

IV. Basis for Evaluation

1. Examinations covering lesson objectives and interaction items-75%
   (Unit exams-60%; Comprehensive Final exam-15%)
   Questions will evaluate recall, interpretive skills, and problem solving abilities.

   Test item samples of:

   RECALL

   A monotrichous bacterial cell:

   A. Has 1 flagella at 1 pole
   B. Possesses a tuft of flagella
   C. Is covered with flagella
   D. Conjugates with only 1 species
INTERPRETIVE SKILLS

When observing the Glucose fermentation medium (Phenol-red broth), you notice it is orange. You would record this result as:

A. Acid  
B. Positive  
C. Negative  
D. Contaminated

PROBLEM SOLVING

A physician has sent a sputum specimen to the laboratory. The Gram stain shows many Gram-positive cocci in chains and pairs. Many small alpha-hemolytic colonies are seen on the primary medium. It is not clear, however whether the organisms are potential pathogens. Which of the following test would make this differentiation:

A. Optochin  
B. Esulin Hydrolysis  
C. Bacitracin susceptibility  
D. Catalase

2. Laboratory performance-25%  
   (Permit Portfolio and Unknowns)

   Choose from the following (up to a limit of 3%):

3. Journal and/or second chance to learn-1-2%

4. Response to lesson interaction items, short writing assignments, peer evaluation of group participation and attendance-1%

5. Usage of available Computer Assisted Instruction and Videodisk Technology (excluding class assignments)-1%

6. Optional written assignment-1%

V. Determination of Overall Course Grade

1. An overall unit examination average will be calculated by dividing the student's total number of points accumulated by the total number of points possible.

2. An overall laboratory average will be calculated by dividing the student's total number of points accumulated by the total number of points possible.

3. A final examination average will be calculated by dividing the student's total number of points obtained by the total number of points possible.
4. The overall course average will be calculated as follows:

   Unit Examination Average X .60 = _____  
   Final Examination Average X .15 = _____  
   Laboratory Average X .25 = _____  
   TOTAL = _____

5. The Program grading scale will be used for assignment of the overall course letter grade.

   A = 93 - 100  
   B = 83 - 92  
   C = 75 - 82  
   D = 65 - 74  
   F = 64 and below

VI. Policies

1. Tests must be made up within one (1) week from the date of original administration. (i.e. The make-up exam must be completed prior to the start of class, 1 week later.) Failure to comply will result in a grade of zero (0). Only excuses that are validated by the instructor will allow make-up exams. (Presentation of a doctor's excuse or other acceptable documentation may be required, before make-up exams will be given.) Please call me on the date of the scheduled exam to validate your excuse and discuss possible make-up dates.

2. No late laboratory reports will be accepted. A grade of zero (0) will be given if a report is not received on time.

3. Students are expected to attend all classes and laboratory sessions. No make-up will be allowed.

4. I expect students to arrive on time for all classes and laboratory sessions.

5. I expect all students to come to class prepared to work in an organized and efficient manner in order to complete the assigned activities within the allotted class time. I will not extend class time.

6. Cheating is defined as plagiarism or the use of texts or aids in test situations not specifically authorized by the instructor. To plagiarize is to copy someone else’s work and to submit it as your own original work without crediting the author. Even if you rewrite a little, such a paper is still considered to be plagiarized. A plagiarized paper receives an F and no points. Unethical behavior such as cheating is cause for dismissal.

7. The laboratory will be available at times other than class hours for individual skill practice. The laboratory technician is available to provide assistance during open lab.

   Confirm times of Open Labs with the laboratory technician prior to usage.

8. Safety-Lab coats will be worn by all students during lab. Lab coats will be placed in a Biohazard labeled bag and stored in the classroom. The lab coat will be autoclaved (if cloth) or discarded in a biohazard container (if disposable) at the end of the semester or if contaminated, torn, or soiled. Gloves will be worn when collecting and processing a specimen. Protective eyewear will be worn when a procedure may generate an aerosol or if contacts are worn. All rules outlined in the Medical Microbiology Lab Manual and the MLT Safety Manual apply.
9. I expect all students to conduct themselves in a professional manner. Please extend respect and
courtesy to all individuals in class. (See the Program and College Student Handbook for Student
Rights and Responsibilities information.)

10. Please turn off cell phones and pagers during class.

VII. Journal and/or Second Chance to Learn

Each student may submit a journal or participate in second chance to learn activities with each exam. 1% may be earned by submitting a mindmap or participating in the second chance to learn activity. 2% may be earned by either submitting a mindmap and participating in the second chance to learn or submitting a journal with 2 entries.

Each student may keep a journal with two (2) entries for each assigned chapter. Each assigned chapter must have either a one page outline or mindmap for 1 entry, and a summary for the second entry. The summary must adequately and concisely relate the key points of the chapter to earn credit. Each entry should be E-mailed to the instructor (with MM Journal [insert number] in subject line) or posted on Blackboards Discussion Board in the appropriate forum.

Summarize the reading assignment (in your own words) in regular font. Entries should be presented in a logical, cohesive manner. The reader should be able to follow your train of thought to a natural conclusion. Enough data should be provided so that the reader understands what you are trying to convey. Any questions you had while reading the assignment is recorded in Boldface type in the paragraph of the entry. Try to answer those questions yourself. If you cannot, see me during my office hours. Place the answer to your question in a parenthesis next to the question.

The Journal entries will be submitted on each exam day and should cover the chapters included in the lessons on the exam.

Submit journal entries 3 out of 4 exams, to be considered in the overall course grade.

VIII. Optional Assignment:

Explore a variety of topics in Microbiology by reading and analyzing journal articles. For each journal article read, a 3-4 page report must be submitted.

Any student interested in this assignment MUST see the instructor for specific details.

IX. Office Hours:

Please make an appointment with the instructor to discuss any problems you are experiencing with the course assignments.

To help me do the best job possible helping you, please:

• come to the office with specific questions. You should write these down before you arrive.
• bring materials with you, with appropriate passages marked, when discussing reading assignments.
• be prepared to argue ideas, not points when discussing grades.

I reserve the right to terminate any meeting with a student if I feel he/she has not adequately prepared.
X. Permit Slips:
In order to gain entrance to the classroom on those days when lab exercises are scheduled, you will need to submit to the instructor a permit slip. The permit slip is a one page summary (in your own words/pictures) of the scheduled lab exercise. It should be submitted in a folder with the permits secured, not loose. This folder should contain all the permits submitted during the semester. It should include the following:

- **ON TUESDAY-**
  A group organizational plan which outlines who will be performing each task (be specific) on day 1. A brief description of how each type of medium will be inoculated should also be included. This should be signed by all group members indicating agreement on the plan of action.

- **ON WEDNESDAY-**
  Each individual group member should submit a description of the expected results for each medium/test used in the exercise and how that result is recorded. This summary may be written or pictorial.

Any student/group unable to present an acceptable permit slip to the instructor will NOT be allowed to participate in the lab exercise or to make it up during open lab time.

**NOTE: EACH STUDENT IS RESPONSIBLE FOR INDIVIDUAL LEARNING OF PROCEDURES AND TEST REACTIONS; AS WELL AS COOPERATING IN GROUP ACTIVITIES.**

XI. Textbooks and Other Supplies


2. Medical Microbiology Laboratory Manual

3. Large Three-ring notebook.

4. Paper report cover (folder) with pockets and 3 fasteners to hold 3 hole punched papers.

5. Lab Coat & a large ziplock baggie. (Disposable lab coats are available for purchase in the bookstore.)

6. 3 pairs of latex or nitrile gloves

7. Protective eyewear.

8. Markal Sharpie (Black) "water resistant" pen

XII. Supplemental Resources

1. Any Medical Microbiology textbook in the library.

2. Micro-Micro; Computer Assisted Instruction- Tutorial for use on IBM PC.

3. Other software (CD-ROM, Interactive videodisk, Drill & Practice, and Simulation) is also available.

4. Lab Training Library (Collection of education courses for training and continuing education. To receive credit, a User must review the course material and complete a test at the end of the course.)
The minimum passing score is 80%.)

5. Media Lab, Inc. (Same description as number 4, above.)

4. Karen Kiser’s Home Page on the Internet. (Internet access is available in the classroom, library and computer lab.)


6. Dirckx, John (Editor). Stedman’s Concise Medical Dictionary for the Health Professions. Williams & Wilkins, Baltimore, MD. Current Edition. (Optional) or any current Medical Dictionary

XIII. Access Office

The ACCESS OFFICE-Disability Support Services (G-215, 644-9039) has been designated by the College as the primary office to assist students with disabilities. If you have a disability and receive services through the ACCESS OFFICE, feel free to discuss your approved accommodation needs with me. (Approved classroom accommodations will be listed on the Instructor Notification Memo you will bring with you from the ACCESS OFFICE). I will hold any information you share with me in the strictest confidence, unless you give me permission to do otherwise.

Students need to inform faculty members of special needs as soon as possible to ensure that those needs are met in a timely manner.

XIV. Assessment

St. Louis Community College is committed to the continuous improvement of student academic achievement. The college undertakes assessment of its academic programs and courses to assure that student learning is not only occurring but improving. Further, classroom assessment by individual instructors discovers what is working in the particular classroom to facilitate learning. At each of these levels of academic achievement - classroom, course and program - you, the student, will be asked to participate to enable the College to improve its product, which is your learning. Assessment is a means to evaluate the learning process and is separate from the grading process. Your participation will be solicited and appreciated.

XIV. Disclaimer

From time to time this syllabus may need to be amended. Students will be notified of syllabus changes during a regularly scheduled class. It will be the responsibility of the student to ensure they possess the latest version of the syllabus.