Course Syllabus

MLAB 2434 – Microbiology

Revision Date: August 22, 2013

Catalog Description:
Instruction in the theory, practical application and pathogenesis of clinical microbiology, including collection, quality control, quality assurance, safety, setup, identification, susceptibility testing and reporting results. (5110040000)

Lecture hours = 4, Lab hours = 1

Prerequisites: Enrollment in this course and the Medical Laboratory Technology Program require department head approval and successful completion of the admissions process. Students must be accepted into the MLT Program.

Semester Credit Hours: 4
Lecture Hours per Week: 4
Lab Hours per Week: 1
Contact Hours per Semester: 144

State Approval Code: 5110040000

Instructional Goals and Purposes
Panola College's instructional goals include 1) creating an academic atmosphere in which students may develop their intellects and skills and 2) providing courses so students may receive a certificate/an associate degree or transfer to a senior institution that offers baccalaureate degrees.

Rationale/Introduction: This course consists of instruction in the history, practical application, and pathogenesis of clinical microbiology, including collection, setup, identification, susceptibility testing, and reporting procedures. The laboratory exercises will endeavor to provide the student with the most comprehensive experiences possible, but will rely mainly on the commonly measured differential characteristics of select bacterial groups.

Course Instructional Goals and Purposes:
By the end of this course the student should be able to:
• Demonstrate proficiency in aseptic handling of bacteriologic specimens.
- Demonstrate an understanding of bacterial, viral and rickettsial descriptions and classifications.
- Choose the proper media for and correctly process bacteriologic specimens
- Identify unknown organisms using techniques presented in laboratory exercises.
- Apply principals of safety, quality assurance and quality control.
- Evaluate specimen acceptability.
- Correlate test results with patient conditions.

**Learning Objectives:**
The following affective objectives pertain to the online and clinical components:

1. **Demonstrate professionalism by**
   a. complying with the laboratory attendance policy
   b. complying with the laboratory dress code
   c. submitting assignments by the stated deadline
   d. use proper grammar and respect with communicating electronically

2. **Demonstrate enthusiasm and interest in the profession of microbiology by asking questions, participating in class discussions and meeting with professors during office hours as needed.**

3. **Demonstrate initiative by reviewing materials and completion of all assignments prior to due dates.**

4. **Demonstrate progression in laboratory skills by effective organization, coordination of multiple tasks and insightful evaluation of results obtained.**

5. **Utilize constructive criticism to correct deficiencies and improve performance.**

6. **Work cooperatively with professors and fellow students to achieve the goals of each activity assigned.**

7. **Participate in activities designed to advance the profession of laboratory science and build professional pride.**

8. **Participate in activities to encourage an ongoing involvement in professional development**

*Specific objectives given in online course.*

**Specific Course Objectives (Includes SCANS Information)**
Recently the U.S. Department of Labor established the Secretary’s Commission on Achieving Necessary Skills (SCANS) to examine the demands of the workplace and whether the nation’s students are capable of meeting those demands. The Commission determined that today’s jobs generally require competencies in the following areas.

a. **Resources:** Identifies, organizes, plans, and allocates resources
b. **Interpersonal:** Works with others
c. **Information:** Acquires and uses information
d. **Systems:** Understands complex interrelationships
e. **Technology:** Works with a variety of technologies
The Texas Higher Education Coordinating Board is now requiring all degree plans in institutions of higher education incorporate these competencies and identify to the student how these competencies are achieved in course objectives.

Examples of SCANS competencies being incorporated are as follows:

<table>
<thead>
<tr>
<th>SCANS COMPETENCY</th>
<th>Clinical Microbiology Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td>Identify reagents and supplies needed for each lab, organize work so that the reagents, supplies, and equipment are utilized appropriately and work is completed within a reasonable time frame.</td>
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<tr>
<td>Interpersonal</td>
<td>Recognize limitations of expertise during the performance of procedures and communicate with professor when problems arise. Maintain confidentiality of patient samples utilized. Demonstrate respect for fellow students during lab time. Utilize the Internet to interact with laboratory science students through the Canvas communication system and regular email programs.</td>
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<tr>
<td>Information</td>
<td>Apply knowledge gained from online lecture, laboratory and the textbook to trouble shoot and problem solve laboratory results obtained during student laboratory. Utilize the Internet and other library resources to acquire information about specific topics as they relate to the field of Clinical Laboratory Science.</td>
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<tr>
<td>Systems</td>
<td>Apply critical thinking skills to clinical laboratory problems encountered, specifically, utilizing clinical laboratory principles and theories and applying these to results obtained.</td>
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<tr>
<td>Technology</td>
<td>Achieve competency in routine clinical laboratory procedures utilizing a variety of reagents, supplies and techniques. Utilize provided procedures to obtain appropriate information for performing and trouble-shooting clinical laboratory procedures, and determining clinical significance and normal values. Use computers, the Internet, and the Canvas system to access course materials and other relevant course information.</td>
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</tbody>
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PROGRAM STUDENT LEARNING OUTCOMES
Upon completion of the Associate of Applied Science degree in Medical Laboratory Technology, the student will be able to:

1. Collect and process biological specimens for analysis.
2. Perform analytical tests on body fluids, cells, and products.
3. Recognize factors that affect procedures and results, and take appropriate actions within predetermined limits when corrections are indicated.

Course Grade
Lecture Grade = 2/3 of grade
Lab Grade = 1/3 of grade

Lecture
Major Exams 50%
Quizzes 15%
Homework Assignments 20%
Final Exam 15%

Laboratory
Pre-Lab Quizzes 10%
Case Assignments 20%
In-Lab Assignments 20%
Practicals 50%

Methods of Evaluation:
This is a mainly online course so it will require a lot of outside proactive work by the student. The instructor will provide guidance as needed. The student will be evaluated by assignments, quizzes, cases, and exams as assigned by the instructor outside of the classroom. The student will be required to come to a Panola College testing Center to take all major examinations. Laboratories will take place on three pre-determined Saturdays during the semester and will be mandatory. During the laboratories the students will be evaluated by case studies, in-lab assignments, and lab practicals as assigned by the instructor.

Texts, Required Readings, Materials, and Supplies
For current texts and materials, use the following link to access bookstore listings:
http://www.panolacollegestore.com

Required:

White Laboratory Coat
Suggested:
Medical Dictionary

More Information:

Medical Technologies Student Handbook
Medical Technologies students are subject to all rules and regulations outlined in the Panola College Medical Technologies Student Handbook.

Laboratory Dress Code
The student will be expected to attend class clean and neatly dressed in long pants or scrubs and wear closed-toe shoes. A laboratory coat will must be worn snapped or buttoned up during all laboratory sessions. Hair that is shoulder length or longer must be worn up or securely tied back. Gloves must be worn when handling biological materials.

Behavioral Conduct
While a student is representing Panola College as a Medical Laboratory Technology student, they will be expected to conduct themselves in such a manner as to reflect favorably on themselves and on the Program. If a student acts in such a manner as to reflect immature judgment or disrespect for others, the student will be called before the MLT Department Chair for determination of their status in the Program. Inappropriate conduct is grounds discipline and may be cause for immediate probation or dismissal from the Program.

Academic Dishonesty
Under no circumstances shall a student submit work that is not their own. Copying answers for study questions, cheating on exams and/or submitting laboratory results which are not your own are expressly prohibited.

Time Commitment
According to “Hints on How to Succeed in College Classes” http://astrosociety.org/edu/resources/success.html you should budget your time per week for this five hour credit course as follows:
1. Reading assigned text 2 to 4 hours
2. Homework assignments 4 to 7 hours
3. Time for review and test preparation 4 hours
4. Total study time per week 10 to 15 hours PER WEEK

Other:
- For testing services, use the following link: http://www.panola.edu/elearning/testing.html
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student
Coordinator in Support Services located in the Administration Building or go to http://www.panola.edu/student-success/disability-support-services/ for more information.

- Withdrawing from a course is the student’s responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.