

Bluegrass Community & Technical College  
An Equal Opportunity Institution

**Spring 2009 Syllabus and Course Objectives**

<b>Course Title:</b>	Introduction to Microbiology Laboratory
<b>Course Identification:</b>	BIO 209-J001 Course #73236
<b>Credit Hours:</b>	2
<b>Contact Hours:</b>	4
<b>Prerequisites:</b>	one unit of chemistry or consent of instructor BIO 226 or concurrent
<b>Instructor:</b>	Susan Kavanaugh OB 325B, 246-6455 <a href="mailto:susan.kavanaugh@kctcs.edu">susan.kavanaugh@kctcs.edu</a> Office hours: Mon 12-1 and 3-4pm Wed 12:30-2pm T & Th 10:45-11:30 AM and by appointment
<b>Division/Department:</b>	Natural Sciences/Biological Sciences
<b>Area Coordinator:</b>	Kevin Hopper, OB 325A, 246-6454
<b>Assistant Dean:</b>	Chad Mueller, OB 303H, 246-6551
<b>Office Manager:</b>	Phyllis Mulcahy, OB 303, 246-6445

**Official Course Description:** Laboratory exercises in general microbiology. Laboratory 4 hours per week.

**General Education Learning Outcomes:** Upon completion of this course, the student will be able to:

**I. Communicate effectively.**

- Learning outcome: Students will be able to read and listen with comprehension.
  - Course Objective: *Describe methods of physical and chemical control of microbial growth.*
    - Instructional Objective: Students will listen to lectures and discussions related to these topics, complete assignments and will be tested on their listening and reading skills on the quizzes and exams.

**II. Think critically.**

- Learning outcome: Students will be able to demonstrate problem solving through interpreting, analyzing, summarizing, and/or integrating a variety of materials
  - Course Objective: *Prepare and interpret slides of microorganisms.*
    - Instructional Objective: Students will be tested on their laboratory skills on practical examinations in the laboratory.

**III. Learn independently.**

- Learning outcome: Students will be able to apply learning in academic, personal, and public situations.
  - Course Objective: *Demonstrate correct use of the microscope.*
  - Course Objective: *Demonstrate proper aseptic laboratory technique.*
  - Course Objective: *Demonstrate proper use of laboratory apparatus.*
    - Instructional Objective: Students will be tested on their laboratory skills on practical examinations in the laboratory.

**IV. Examine relationships in diverse and complex environments.**

- Learning outcome: Students will be able to demonstrate an awareness of the relationship of the individual to the biological and physical environment.
  - Course Objective: *Discuss the role of parasites in human disease.*
    - Instructional Objective: Students will be tested on this knowledge on quizzes and exams.

**Additional course objectives:** After completion of this course, students will be able to:

- *Prepare bacterial and fungal cultures for study.*
- *Identify and characterize bacterial and fungal cultures.*
- *Explain microbial metabolism and genetics.*

**Textbooks:**

- Required:** *Laboratory Manual to accompany Bio 209, Spring 2009*, by Professor Susan C. Kavanaugh. This is available online only, thru the Blackboard website. Please print out a copy and bring it with you to lab each time.
- Recommended:** *A photographic Atlas for the Microbiology Laboratory*, by Michael J. Leboffe & Burton E. Pierce

**Attendance:**

1. Attendance at all laboratory sessions is **mandatory**.
2. A student will be allowed to miss **two (2) excused labs** without penalty.
3. If a student must miss a lab period, a valid, documented, written excuse (to be determined by the instructor) must be provided.
4. Each unexcused lab results in a **5% decrease** in the final grade.
5. There is no makeup of unexcused lab work, quizzes, or exams.

**Withdrawal Policy:**

1. A student may withdraw from BIO 209 without the consent of the instructor until **Monday, March 9, 2009**.
2. After March 9, the student will not be permitted to withdraw from BIO 209 without a serious, nonacademic reason (to be determined by the instructor).
3. The student must submit a written request to withdraw to the instructor; no other than the instructor can sign the withdrawal request.

**Laboratory Supplies:**

1. A full-length, long-sleeved fluid-resistant lab coat that can be worn over your clothing at all times in the lab is required. These are available through the BCTC Bookstore only. You will not be permitted to attend lab without one; this is an OSHA safety requirement.
2. a black fine point "Sharpie" glass marker
3. a lab kit available for purchase from the BCTC Bookstore. Pay for the kit at the bookstore, and then bring the receipt to lab to receive your kit.

**Make-up Work Policy:**

1. If a student must miss a lab or an exam, he/she must contact the lab instructor within 24 hours.
2. The student must provide a written, documented, valid excuse (to be determined by the instructor).
3. Due to the perishable nature of the lab materials and cultures, there will be no make-ups for missed lab work or practical exams. If the instructor determines that the excuse provided is valid, that grade will be dropped from consideration of the final course grade.
4. This option may only be used for one exam. If a student misses more than one exam, they will receive a grade of zero for that exam.

**Late Work Policy:** No late work will be accepted.

**Other Policies:**

1. All food, drinks, and smoking or chewing tobacco is prohibited in the laboratory.
2. Students must be on time for lab. Safety instructions and quizzes are given at the beginning of each lab period. A student who is late may be counted absent at the discretion of the instructor.
3. Cheating will not be tolerated under any circumstances. If a student is determined to be cheating, he/she will be dismissed from the exam and from the course with an "E".
4. If you have any questions concerning these policies, refer to the *Student Code of Conduct*, available in OB 200 or at <http://www.kctcs.edu/student/code/htm>. Failure to abide by these policies will be grounds for dismissal from the course.

**Reasonable Accommodations:** If a student has a special need that may require an accommodation or assistance, please inform the instructor of that fact at the beginning of the course or as soon as the special need is identified.

**Code of Student Conduct:** All rules and regulations set forth in the current edition of the *Student Code of Conduct* will be followed in this course. Failure to abide by these policies will be grounds for dismissal from the course. If a student has any questions concerning these or any other policies, he/she should refer to this booklet, available in Room 200 OB or on the Web at <http://www.kctcs.edu/student/code/htm>.

**Instructional Assistance:** Several avenues are available to the student to assist in preparing for this course. Please utilize the instructors' office hours. The textbooks and lab manuals are on reserve in the library. A virtual lab website is available thru a link on the Blackboard website. Also, free tutoring is available (hours TBA).

**Course Requirements and Grading Criteria:**

1. There will be **three (3) 100 point lab exams** given during this course, each worth **25%** of the total course grade. Exams will be a combination of practical and written questions.
2. In addition to the lab exams, lab quizzes will be given at the beginning of the lab period at the discretion of the instructor. Other additional assignments such as reports may be given as needed throughout the semester. The **lab quiz/assignment average** will count as **25%** of the total course grade.
3. A modification of your final grade may be made at the discretion of the instructor based upon effort, professional attitude, attendance, or other extenuating circumstances.

**4. Grading Scale:**

A	=	90-100%	C = 70-79%	E = below 60%
B	=	80-89%	D = 60-69%	

**BIO 209 PROPOSED LAB SCHEDULE****Spring 2009  
Required Reading  
Lab Manual / Experiments**

<b>Date</b>	<b>Topic</b>	
(T) Jan. 13	<i>No labs</i>	
<b>(W) Jan. 14</b>	<b><i>Last day to enter this class</i></b>	
(R) Jan. 15	<i>No labs</i>	
(T) Jan. 20	Introduction/Syllabus/Safety	
(R) Jan. 22	<b>Quiz</b> /Aseptic Techniques/Specimen Collection / Microbial Growth & Media	
(T) Jan. 27	Use of the Microscope/Smear Preparation The Gram Stain	
(R) Jan. 29	Special Stains	
(T) Feb. 3	Identification of Staphylococci	
(R) Feb. 5	Identification of Streptococci	
(T) Feb. 10	Identification of Neisseriae	
(R) Feb. 12	Identification of Enterobacteriaceae	
(T) Feb. 17	Serial Dilutions/ Plate Counts	
(R) Feb. 19	<b>Quiz</b> /Discussion of results/Lab review	
<b>*(T) Feb. 24</b>	<b>LAB EXAM #1</b>	
(R) Feb. 26	Viral Plaque Assay	
(T) Mar. 3	Discussion of results /Food Microbiology	
(R) Mar. 5	Discussion of results /Identification of Fungi	
<b>(M) Mar. 9</b>	<b><i>Last Day to withdraw from this class</i></b>	
(T) Mar. 10	Identification of Protozoa	
(R) Mar.12	Arthropod Vectors	
(T) Mar. 17	Spring Break-No labs	
(R) Mar. 19	Spring Break-No labs	
(T) Mar. 24	Identification of Helminths	
(R) Mar. 26	<b>QUIZ</b> /Discussion of Results/Open Lab Review	

- \*(T) Mar. 31      LAB EXAM #2**
- (R) Apr. 2      Disk Diffusion Antibiotic Sensitivity Testing
- (T) Apr. 7      Disinfectants and Antiseptics
- (R) Apr. 9      Ultraviolet Irradiation of Microbes
- (T) Apr. 14      Latex Agglutination Testing
- (R) Apr. 16      ELISA Testing
- (T) Apr. 21      Water Quality Testing
- (R) Apr. 23      **QUIZ** /Discussion of Results/Open Lab. Review
- \*(T) Apr. 28      LAB EXAM #3**
- (R) Apr. 30      Lab Wrap-up