

# BIO 115 COURSE SYLLABUS

**COURSE TITLE:** Basic Microbiology

**PREFIX NUMBER:** BIO 115

**LECTURE HOURS:** \_\_\_ 3.0 per week

**LAB HOURS:** 4.5 per week

**CONTACT HOURS:** 5.0 per week

**CREDIT HOURS:** 3.0 Sem. Hrs.

## **CATALOG DESCRIPTION:**

This is a general course in microbiology, including epidemiology, ubiquity, control and identification of microorganisms.

**Prerequisite:** None.

## **COURSE DESCRIPTION:**

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

1. list and describe the appearance, function and clinical significance of selected major groups of microorganisms to both health and disease.
2. identify, describe and demonstrate the operation, capabilities and limitations of standard laboratory equipment and procedures used in the examination, enumeration and control of microorganisms.
3. demonstrate a basic knowledge of antimicrobial agents and their effectiveness in the control of infectious diseases.
4. demonstrate a basic knowledge of epidemiology and pathogenicity related to microbial infections.
5. understand fully the importance of asepsis and its integral relationship to the proper culturing of microorganisms and to standard procedure used in the clinical sciences.

## **TEXTBOOKS AND OTHER REQUIRED MATERIALS:**

Talaro, Kathleen Park and Arthur Talaro, 2002. Foundations in Microbiology: Basic Principles, 5th edition. McGraw-Hill.

Benson, Harold J., 2002. Microbiological Applications: Laboratory Manual in General Microbiology, 8th edition. McGraw-Hill.

**TWO/THREE LAB COATS (DISPOSABLE) ONE  
PAIR OF EYEGOGGLES ONE SHARPIE MARKER  
ONE PAIR OF GLOVES (PER LAB SESSION)**

**GRADING:**

This is accomplished by dividing the points accumulated in both lecture and laboratory by the total possible points:

SUMMER SEMESTER

Lecture tests (3).....	300 points
Comprehensive final (1).....	150points
Laboratory Points	
Lab Practicals (2).....	200 points
Quizzes (10 pts each).....	50 points
TOTAL.....	700 points

**SPECIAL CLASS OR LABORATORY PROCEDURES:**

Lectures and laboratories will, due to the large amount of material to be covered, begin exactly on time and will last for full duration of the period. Students will be asked to select a lab partner and will berequired to come into lab ON THEIR OWN TIME to examine cultures and complete biochemical tests and record results.

Proper care of equipment is essential in the Department of Biological Sciences. The equipment may be expensive or difficult to replace. Students who fail to take care of equipment may be subject to disciplinary action and/or be barred from participation in the laboratory.

**SAFETY:**

For your safety, if you have a medical condition that results in seizures, blackouts, etc. (e.g., from epilepsy, diabetes) please inform your instructor before the first laboratory session. This information will be kept confidential. If you wish to seek accomodations due to a disability, please contact Services for Students with Disabilities, Building 410, Room 210.

**ELECTRONIC COMMUNICATION DEVICES IN CLASSROOMS:**

To minimize classroom disruptions and protect the integrity of test-taking situations, activated electronic communication devices such as pagers and telephones are generally not permitted in classrooms at Trident Technical College. The only exception to this policy will be for on-call emergency personnel (police, fire, EMS), who will be required to notify their classroom instructor of their need for such devices at the beginning of the term and provide documentation verifying their occupation. However, on-call emergency personnel may not leave a testing situation, communicate by electronic means and return to complete an examination. In these cases, instructors should make arrangements for re-testing.

**GRADING AND SYSTEM POLICY:**

Final course grades will be determined according to the following grading scale:

91 - 100 = A  
81 - 90 = B  
71 - 80 = C  
65 - 70 = D  
Below 65 = F

**TESTS:**

Three 100-point lecture tests and one 150-point comprehensive final examination will be administered in this course. In addition, two 50 point lab practical examinations will be administered in the laboratory portion of the course. (See attached lab schedule for tentative dates.)

**QUIZZES:**

Occasional unannounced quizzes will be administered at the beginning of lecture. Each will be worth a total possible 10 points and will be based upon either reading assignments for that day or material presented at the previous lecture.

**MAKE-UPS ARE NOT ALLOWED ON QUIZZES MISSED DUE TO ABSENCES OR TARDINESS.**

**MAKE-UPS:**

These are strongly discouraged and will not generally be allowed unless the student can properly justify his/her absence with WRITTEN JUSTIFICATION. No more than one make-up is allowed for any student (all further missed tests accrue an automatic zero). There are NO MAKE-UPS for the laboratory practical and there is NO EXTRA CREDIT in this course. It is the student's responsibility to seek out the instructor to attempt a justified make-up within one week of the original test date.

**PREPARATION:**

The student is expected to come to lecture and lab prepared (having read the assigned material) to discuss text material and perform assigned labs. A topical outline is provided at the beginning of the course for both lecture and laboratory portions of the course and can be consulted to determine assignments. These outlines, however, are TENTATIVE and subject to change at discretion of the department.

**ACCOMMODATIONS FOR STUDENTS WITH SPECIAL NEEDS:**

The College will make reasonable accommodations for persons with documented disabilities. Students should notify the Counselor for Students with Disabilities (located in Counseling and Career Development, Building 410, Room 210) and their instructors of any special needs. Instructors should be notified on the first day of classes.

**ATTENDANCE POLICY:**

Before attending classes, you must meet all prerequisites and officially register for all courses. Prompt and regular attendance is your responsibility. You are responsible for all material covered and all assignments made in class. Any time you are absent from a class, laboratory or other scheduled events, it is your responsibility to make satisfactory arrangements for any make-up work permitted by the instructor.

An absence is defined as nonattendance for any reason, including illness, emergency or official leave. If you arrive late to class, you may not be allowed into the classroom and may be considered absent for that period. If you leave before the instructor dismisses class, you may also be considered absent. All class sessions are important. Any time you miss a class you increase your risk of making a failing grade. For example, some departments or individual instructors will count your class participation as a substantial percentage of your grade. Of course, if you are not in class, you will not get the necessary points for your class participation.

If you quit coming or participating in the course and do not officially withdraw by the withdrawal date for each semester, you will receive a grade of F or U. Your instructor cannot assign a grade of W. If you receive financial aid or veterans' aid, your aid may be revised as a result of any changes in your course schedule.

**DEPARTMENTAL ATTENDANCE POLICY:**

Regular attendance in lecture and laboratory is mandatory. Although students will not be graded on their attendance directly, class attendance and punctuality are vital both for better comprehension of the material and for participation in class activities. You should attend every lecture and lab session and plan to remain for the full duration of the period. Arriving late to class may constitute an absence; however, this determination will be left to the discretion of the instructor.

Each student is responsible for any and all materials covered in class, including lecture notes, quizzes or assignments that are missed if absent. Quizzes will be announced in advance of the time they will be administered; therefore, quizzes may not be made up if missed.

In accordance with college policy, the final course grade for any student whose absences exceed 20% of the scheduled meeting time for this course may be reduced by one letter grade.

Students receiving veteran benefits should refer to the Student Handbook for the Veterans Attendance Policy.

**INSTRUCTOR AVAILABILITY:**

Your instructor is available to you outside of class for academic assistance. Full-time faculty maintain and post regularly scheduled office hours. Part-time faculty are accessible in a variety of ways, which may include conferences before and after class or by appointment, telephone conferences, and e-mail. The phone number for contacting your instructor is provided on your syllabus addendum or cover sheet.

**BIO 115 - BASIC MICROBIOLOGY  
ADDENDUM  
LECTURE SCHEDULE - 9 WEEK SESSION**

**LECTURE AND LAB SCHEDULES ARE TENTATIVE AND SUBJECT TO CHANGE WITH THE  
APPROVAL OF THE HEAD OF THE DEPARTMENT OF BIOLOGICAL SCIENCES**

<b>WEEK</b>	<b>Chapter/Lecture Topics</b>	<b>PAGES</b>
1	Introduction to Course 1. Microbiology: A Perspective 1. Classifications/History 4. Prokaryotic Cell Structure and Organization	Handouts 1-25 1-25 87- 104
2	4. Bacterial Morphology: Shapes, Arrangements, and Sizes 4. Archeae 3. Microscopy and Staining	104- 107 117-119 70 - 86
3	3. Study of Microbes 7. Microbial Activities <b>EXAM 1</b>	58 -70 186 - 215
4	6. Viruses: A Viral Primer	159 -185
5	11. Physical and Chemical Control of Microbes	318 - 347
6	12. Drugs, Microbes, Host - The Elements of Chemotherapy 348 - 377	
7	<b>EXAM 2</b> 13. Microbe - Human Interactions: The Human Host; The Progress of an Infection; Epidemiology	380 - 415
8	Respiratory Infections: Bacterial and Viral Gastrointestinal Infections Hepatitis Diseases	
9	<b>EXAM 3</b> Sexually Transmitted Diseases	
10	<b>FINAL EXAM</b>	

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ADDENDUM  
LABORATORY SCHEDULE - 9 WEEK SESSION**

**LECTURE AND LAB SCHEDULES ARE TENTATIVE AND SUBJECT TO CHANGE WITH THE  
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<b>WEEK</b>	<b>Exercise/Laboratory Topics</b>	<b>PAGES</b>
1	Introduction to Course Microbes in the Environment 1. Microscopy	Handouts 3-8
2	7. Aseptic Technique 19. Pure Culture Technique 11. Smear Preparation 12. Simple Staining 14. Gram Staining	35 - 41 76-79 54 - 57 58 60 - 62
3	13. Capsule Staining 15. Spore Staining 16. Acid-Fast Staining 21. Serial Dilutions/Pour Plating	59 63 - 64 65 87-90
4	20. Anaerobic Bacteria Review for Midterm Lab Practical	83 - 86
5	Midterm Lab Practical 32. Disinfectants 33. Antibiotics	116-117 118-120
6	The Staphylococci Handout The Streptococci Catalase Test	Handout Notes
7	45. The Enterics 9. The Fungi	167-171 44-49
8	5. Protozoans 6. Microscopic Invertebrates  Review for Final Lab Practical Final Lab Practical	22 - 30 31 - 33