**SYLLABUS**

**BIO 2420, MICROBIOLOGY**

**COURSE INFORMATION**

**FALL 2018**

**INSTRUCTOR:** Tori Hall, Ph.D.

**EMAIL:** thall@southplainscollege.edu

**LECTURE: 6:00 PM – 7:15 PM**

**LAB: 7:15 PM – 8:55 PM**

**COURSE DESCRIPTION:** This is a general microbiology course that covers the morphology and physiology of microorganisms with particular emphasis on the microbial relationship to disease, pathogenicity, and the immune response. This course is designed for students entering the allied health profession such as: nursing, respiratory therapy, dental hygiene, etc… This course satisfies the requirements for an Associate in Arts and Associate in Science degree as well as requirements for transfer students working toward a Bachelor of Arts degree, Bachelor of Science degree, or certification in allied health fields.

***Please note:*** This course is designed for allied health professionals and will not provide credit for Biology majors, Pre-Med, Pre-Dentistry, or Pre-Vet. **This course is not a core science curriculum course. If you are not sure, please contact the instructor.**

**COURSE OBJECTIVES:**

1. Introduce basic microbiological principles
2. To investigate the cellular processes of living organisms with an emphasis on biological chemistry applications
3. To have a basic understanding of microbial morphology and physiology, bacterial genetics, and basic disease processes
4. To instill an appreciation of the variety and diversity of microorganisms
5. To allow laboratory investigation of the topics covered.

**TEXTBOOK:** Required. Microbiology Openstax Textbook; available for purchase at the SPC Bookstore or available online for Free at: <https://openstax.org>

Free online textbook copy: <https://openstax.org>

 Click on “Subjects” icon

 Click on “Science”

 Click on “Microbiology”

**LAB MANUAL**: Lammert, John. Techniques in Microbiology. A Student Handbook. (Spiral bound) Purchase at SPC Bookstore. (Required). ISBN: 0-13-223011-4

**SCANTRON SHEETS:** Provided by the instructor

**LAB SUPPLIES/EQUIPMENT:** Provided by the instructor

**SAFETY GLASSES:** Safety Glasses are required for Microbiology lab. Safety glasses **will be** provided in lab but you will share these with other students. If you would like to purchase your own personal pair of safety glasses, they are available for purchase at the SPC Bookstore at a cost of $4-$5.

**CLASS SECTION:** Each student is required to attend the class and lab section that he/she is registered for in the semester.

**TAPING:** **Taped lectures will be provided on Blackboard, if requested.** Taping is not permitted unless acceptable documentation is provided by Special Services.

**BLACKBOARD:** Log onto Blackboard from SPC Homepage for announcements, handouts, PowerPoints, and taped lectures for this semester.

 **If there is a weather event that produces poor driving conditions (ice and excessive snow) and class is cancelled, the lecture course content material will be released on blackboard, which will include PowerPoint slides and audio lecture material.**

**BLACKBOARD WEBSITE:** <http://southplainscollege.blackboard.com/>

(login with SPC username and password)

**FIREFOX:** The preferred web browser to support Blackboard. You can obtain a free download at the following website: [www.mozillafirefox.com](http://www.mozillafirefox.com)

**CLASS ATTENDANCE:** Lecture and lab attendance is mandatory. Each student is expected to read the text and lab exercises before each class meeting. If absent, it is your responsibility to check with fellow students about any missed lecture and/or lab material. **Students need to consult with the instructor when an absence occurs.**

**Absences will be documented starting from the first class meeting in the semester.**

When an unavoidable reason for a class absence arises, such as an illness or an official trip authorized by the college, the instructor may permit the student to make up the missed lecture and lab work. In such cases, it is the student’s responsibility to complete the work missed within **three** **days** of their absence.

 **TARDINESS** to lecture or lab will not be tolerated. 2 tardies equals 1 absence. Remember: Tardiness is disrespectful to the instructor and fellow classmates. **Absences and tardies will be considered when tabulating the course grade.**

Whenever absences become excessive and, in the instructor’s opinion, the minimum course objectives cannot be met, the student will be administratively withdrawn from the course. **Your presence in lecture and lab is critical to understanding the fundamentals and meeting the objectives of this course; consequently, the instructor will initiate a student’s administrative withdrawal when the student has 4 absences in the semester (Remember: Lecture and lab count separately).** NOTE: At the time of administrative withdrawal by the instructor, the student will be dropped with either an “X” or “U” if passing, or an “F” if failing.

***It is the student’s responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.***

**COURSE EVALUATION:** The lecture grade will consist of 4 major exams and a final exam. The final exam will not be comprehensive. This will compose 70% of the course grade. Exams will be multiple choice, matching, and true or false. Lab grade will compose 30% of the course grade.

 **EXAM I** 14%

 **EXAM II** 14%

**EXAM III** 14%

 **EXAM IV** 14%

**FINAL** 14%

 70%

**LAB GRADE** 30%

**TOTAL** 100%

**LAB GRADE: 30%** of overall course grade

1. Lab Exams:

**Lab Exam I** 10%

**Lab Exam II** 10%

1. Unknowns:

**Unknown Exam** 10%

 **TOTAL** 30%

**GRADING SCALE FOR COURSE EVALUATION:**

Your percentage grade will be tabulated based on one of the following scales, depending on your attendance/absence/tardy record. If your combined absences and tardies are no more than two, you will assigned a grade based on a lower requirement for a particular grade. If your combined absence/tardy number are more than two, you will be assigned a grade based on the standard scale, given below There will be no exceptions. **Leaving class early will be documented the same as a tardy.**

**LOW ABSENCE/TARDY SCALE STANDARD SCALE**

89 – 100 = A 90 – 100 = A

79 – 88.5 = B 80 – 90 = B

69 – 78.5 = C 70 – 80 = C

59 – 68.5 = D 60 – 70 = D

58 and below = F 59.5 and below = F

**MAKE-UP EXAMS:** Students will be allowed to make up any lecture exams missed, but they must be taken within 3-5 days. The first make-up exam will be a short answer/essay exam. Any additional exams missed will be oral exams with the student and the instructor. There will be NO make-up exams for Lab Exams or the Final exam unless it is a **documented medical emergency.**

**CELL PHONE/PAGERS:** All cell phones/pagers must be on silence or turned off, and put away during class time. Cell phones are disruptive to classroom conduct and are not allowed in class and lab.

**ACADEMIC DISHONESTY:** “Cheating” on exams and assignments will not be tolerated. If a student is caught cheating on an exam, or on course work, the student will be immediately dropped from the course.

**DISMISSAL POLICY**: A high standard of conduct is expected of all students. **It is assumed that obedience to the law, respect for properly constituted authority, personal honor, integrity, proper safety, and common sense will guide the actions of each member of this class.** Any student who fails to perform according to expected standards may be asked to withdraw. **Because of the potential hazards in the laboratory, any student who proves to be a danger to self or fellow classmates will be asked to withdraw or will be dropped from the class by the instructor.**

**DISABILITIES STATEMENT:**

Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

**DIVERSITY STATEMENT**
In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

**NON-DISCRIMINATION STATEMENT**South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX  79336. Phone number 806-716-2360.

**TITLE IX PREGNANCY ACCOMMODATIONS STATEMENT**
If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education.  To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness.  Once approved, notification will be sent to the student and instructors.  It is the student’s responsibility to work with the instructor to arrange accommodations.  Contact Chris Straface, Director of Health and Wellness at 806-716-2362 or email cstraface@southplainscollege.edu for assistance.

BIO 2420 Lecture Outline

FALL 2018 TH

DATE TOPIC CHAPTER­­­\_\_\_

8-28 Introduction and History of Microbiology 1

8-30 Microbial Biochemistry, the Molecules of Life 7

9-4 Microscopy 2

9-6 Prokaryotic Cells 3.4, 4

9-11 Eukaryotic Cells 3.4, 5

**9-13 EXAM I**

9-18 Microbial Metabolism 8

9-20 Microbial Growth 9

9-25 DNA to Protein, Bacterial DNA Replication 10

9-27 Bacterial Genetics 11

10-02 Biotechnology 12

**10-04 EXAM II**

10-09 Viruses 6

10-11 Host-Microbe Interactions/Epidemiology 15/16

10-16 Nonspecific Immune Response 17

10-18 Specific Immune Response 18

10-23 Skin and Eye Infections 21

**10-25 EXAM III**

10-30 Respiratory Infections (Bacterial) 22.1, 22.2

11-01 Respiratory Infections (Viral) 22.3

11-06 Urogenital Infections (Bacterial) 23.1, 23.2, 23.3

11-08 Urogenital Infections (Viral, Fungal, Protozoan) 23.4, 23.5, 23.6

11-13 Digestive Infections 24

11-15 Circulatory (Bacterial) 25.1, 25.2

**11-20 EXAM IV**

**11-22 HAPPY THANKSGIVING!**

11-27 Circulatory (Viral) 25.3

11-29 Nervous (Bacterial) 26.1, 26.2

12-04 Nervous (Viral) 26.3

12-07 Biological Warfare \*Current topic in Microbiology\*

**12-10 FINAL**

BIO 2420 LAB OUTLINE FALL 2018 TH

DATE TOPIC

8-28 Lab Check-in/Bring Calculator for use in class

8-30 Media Problems
 Microscope Use (74-83)
 View 3 bacteria types

9-4 Media Preparation

9-6 Negative Stain (105-108), Bacteria Collection, View prepared Flagella Slide

9-11 Bacteria Collection
Media Preparation

9-13 Media Preparation

9-18 Smear Preparation (87-91), Simple Stain (92-93), Quadrant Streak Plate Inoculation (42-47)

9-20 Gram Stain (94-98)
Media Inoculation

9-25 **LAB EXAM I**

9-27 Capsule Stain (109-111), Motility Slide
Media Inoculation

10-02 Spore Stain (112-116)

10-04 Media Preparation

10-09 Set up Antibiotic test
Acid Fast Stain (99-104)

10-11 Finish Antibiotic Lab
Direct Microscope Milk Smear
Receive Unknown Bacteria

10-16 **LAB EXAM II**Optimal Temperature Test for Unknown

10-18 Read Optimal Temp for Unknown and Gram Stain Unknown
Unknown Bacteria Inoculations

**10/16 – 11/27** **WORK EXCLUSIVELY ON UNKNOWN**

11/01 Morphological and Cultural Characterization Due

11/20Physiological Characterization Due

11/29 Genus and Species Research **and** Name Identification Due
Lab Check Out