

Course Syllabus

COURSE: SCIT1313_151: Workplace Microbiology (3-hour credit)
SEMESTER: FALL
CLASS DAYS: MONDAY (LECTURE: 3; LAB: 1)
CLASS TIMES: 8:30AM – 12:30PM

INSTRUCTOR: KRISTIE A. COLE
OFFICE: RC 223B
OFFICE HOURS: <https://calendly.com/kcole-5/srgt-appt>
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“South Plains College improves each student’s life.”

GENERAL COURSE INFORMATION

*It is the responsibility of each student to be familiar with the content and requirements listed in the course syllabus, and SPC Student Handbook.. *

COURSE DESCRIPTION

The Workplace Microbiology course is the study of the identification and growth of microorganisms as pathogenic or nonpathogenic agents, including epidemiology. Includes the detection of microbes and control of infectious agents in the workplace, emphasizing sanitation and asepsis.

COURSE OBJECTIVES AND LEARNING OUTCOMES

Cognitive Domain Objectives, Psychomotor Domain Objectives, Affective Domain Objectives

- Recognition and Understanding
 - o Identify basic microbial morphology and describe basic microbial physiology.
- Analysis and Interpretation
 - o Interpret host-parasite relationships and interactions, and the requirements of successful parasitism.
- Application and Understanding
 - o Describe and apply knowledge of personal and environmental disinfection and decontamination procedures by proper use of chemical disinfection and sterilization procedures.
- Explanation and Comprehension
 - o Describe the fundamentals of the infectious processes and specific and non-specific defense mechanisms against disease.
- Understanding and Application
 - o Understand the methods of transmission of infectious diseases and recognize the control procedure of these diseases with special emphasis on protection to the embalmer, the funeral director, and the public.
- Discrimination and Analysis
 - o Differentiate between the indigenous microorganisms and pathogens and/or opportunists causing disease commonly associated with the human host.
- Comparison and Differentiation
 - o Compare and distinguish the basic groups of microbes, including prokaryotic microbes (Archaea, Bacteria), and Viruses, and eukaryotic microbes.

- Understanding and Application
 - o Understand the processes needed for one bacterium to become two, and understand the mechanisms involved.
- Comparison, Analysis, and Listing
 - o Compare and contrast major pathways of catabolism, specify the relative energy yield from each pathway, list the key products of each pathway, and describe biochemical pathways used for microbial taxonomy.
- Comparison and Listing
 - o Compare and contrast major pathways of biosynthesis and list the key products of each pathway.
- Application and Prediction
 - o Draw a typical microbial growth curve, and predict the effect of different environmental conditions on the curve.
- Comparison and Analysis
 - o Compare and contrast eukaryotic and prokaryotic genomes, and gene expression in each group.
- Comparison and Analysis
 - o Compare and contrast the acquisition of novel genetic information in microbes via mutations and genetic exchange, specifically conjugation, transformation and transduction.
- Specification and Listing
 - o Specify the role of microbes in global C, N, S, and P cycles, and list examples of microbes that contribute to key metabolic aspects of these cycles.
- Listing and Explanation
 - o List different types of symbiotic interactions between microbes and other organisms, including commensalism, mutualism, and parasitism, and provide examples of each.
- Summarization and Emphasis
 - o Summarize common features of microbial pathogens, with emphasis on bacterial and viral pathogens.
- Summarization and Understanding
 - o Summarize mechanisms of animal defenses to infection, including primary defenses, innate immunity, and acquired immunity.
- Comparison and Analysis
 - o Compare and contrast beneficial and harmful uses of organisms, including applications in biotechnology and bioterrorism.
- Understanding and Grasping the Scope
 - o Have a solid grasp of the scope of the microbial world and its role in shaping this planet and all its inhabitants.

OUTCOME ASSESSMENT METHODS

Assessment methods for this course are both formative and summative.

Formative assessments include:

- Discussions
- Quizzes *over the chapter instructor has just completed
- Unit exams *comprehensive of information learned in the course so far.
- Classroom activities

Summative assessments include:

- A comprehensive final exam.

Evaluation methods

Computer-based exams, written exams, written assignments, quizzes, skills base exams, and other projects as assigned.

Instructional methods

Methods of Instruction may include:

- | | |
|-----------------------|-----------------------|
| • Lecture | • Written assignments |
| • Discussion | • Exams |
| • Audio-Visual | • Class Presentation |
| • Reading assignments | |

GRADING FORMULA

A minimum of 75% on all exams and assignments is required to receive a passing grade for that exam or assignment. Students must earn an overall grade of 75% or better for each course section to pass that section.

Grades in this course will be determined using the following criteria:

The course grade will be determined by a combination of major exams, chapter homework, quizzes, and a comprehensive final exam. Exam dates will be announced. The following guidelines will be followed regarding coursework:

1. The student is expected to complete the exam at the scheduled time. Make-up exams will **NOT** be given.
2. Late assignments will not be accepted.
3. The final exam is comprehensive.

Assessment Tools	%
MindTap – Chapter Assignments (7)	20%
Chapter Exams (6)	30%
Comprehensive Didactic Final Exam	20%
Lab Assignments/Discussions	20%
Fab Final Project	10%

Percentage Score	Grade
90-100	A
80-89	B
75-79	C
0-74	F

A final grade average of C (75) must be maintained. You must pass this course to proceed successfully to complete course.

Grading Policies

To successfully complete this course, students are required to achieve a grade of 75% or higher. Those who do not meet this passing requirement will not be permitted to proceed within the SPC program until passed.

ASSIGNMENT SUBMISSION POLICY

All assignments must be completed by the assigned due date. Late and/or incomplete work will not be accepted and a grade of zero will be recorded. Assignments, quizzes, exams, and skills that are missed due to an unexcused absence may not be made up. See the instructor for more specific information.

Each chapter (19 chapters) will have an assignment (19 assignments) that will be posted on Blackboard on/or before the week that chapter is due by. These assignments are due on/or by 11:59pm of the due date each week. These assignments will be done via Blackboard and will not be timed, but will be a portion of your course grade. Late work or incomplete work is not accepted and a grade of zero will be recorded.

***Once you have logged onto Blackboard and started an assignment, the assignment will need to be completed and submitted before logging out of Blackboard. You may not start an assignment, save it, or work on it later. Once started it needs to be completed for the maximum grade.**

Chapter course content, exercises (course content and exercises done in the book are NOT graded but are HIGHLY recommended that they are completed) and assignments (which are graded) should be read prior to completing the chapter exams.

Exam Policy

The majority of student 'written' exams will be administered via computer to prepare them for the National Registry exam and some exams will be handwritten which will encourage memory and mastery of the material. Students should practice proper spelling and grammar when answering a written exam.

Additionally, many exam questions will be constructed in the same manner as national registry questions, allowing students to prepare for that testing format.

-Please update your computer before starting exams. You might want to log out of blackboard and log back in before starting your exam. You only get 1 attempt per exam!

-Please make sure your computer is plugged into a power source or fully charged while taking your exams. If your computer battery dies during an exam your exam will be submitted at that point!

Each Chapter (19 chapters) will have a chapter exam (19 exams) given via Blackboard. The chapter exams ARE timed and will be a portion of your course grade. You will be given 2 minutes per question. There will also be an exam for the syllabus that will be calculated into your chapter exam grade.

The comprehensive final exam WILL BE timed, given via Blackboard, and will be a portion of your course grade. You will be given 2 minutes per question. The final exam must be completed within the time frame specified by the instructor.

SPC Campus Policies

For information regarding official South Plains College statements about intellectual exchange, disabilities, non-discrimination, Title V Pregnancy Accommodations, CARE Team, COVID, and Campus Concealed Carry, please visit: <https://www.southplainscollege.edu/syllabusstatements/>



STUDENT CONDUCT

Rules and regulations relating to the students at South Plains College are made with the view of protecting the best interests of the individual, the general welfare of the entire student body and the educational objectives of the college. As in any segment of society, a college community must be guided by standards that are stringent enough to prevent disorder, yet moderate enough to provide an atmosphere conducive to intellectual and personal development.

A high standard of conduct is expected of all students. When a student enrolls at South Plains College, it is assumed that the student accepts the obligations of performance and behavior imposed by the college relevant to its lawful missions, processes and functions. Obedience to the law, respect for properly constituted authority, personal honor, integrity and common sense guide the actions of each member of the college community both in and out of the classroom.

Students are subject to federal, state and local laws, as well as South Plains College rules and regulations. A student is not entitled to greater immunities or privileges before the law than those enjoyed by other citizens. Students are subject to such reasonable disciplinary action as the administration of the college may consider appropriate, including suspension and expulsion in appropriate cases for breach of federal, state or local laws, or college rules and regulations. This principle extends to conduct off-campus which is likely to have adverse effects on the college or on the educational process which identifies the offender as an unfit associate for fellow students.

Any student who fails to perform according to expected standards may be asked to withdraw.

Rules and regulations regarding student conduct appear in the current Student Guide.

ACADEMIC INTEGRITY

It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension.

Cheating: Dishonesty of any kind on examinations or on written assignments, illegal possession of examinations, the use of unauthorized notes during an examination, obtaining information during an examination from the textbook or from the examination paper of another student, assisting others to cheat, alteration of grade records, illegal entry or unauthorized presence in the office are examples of cheating. Complete honesty is required of the student in the presentation of any and all phases of coursework. This applies to quizzes of whatever length, as well as final examinations, to daily reports and to term papers.

Plagiarism: Offering the work of another as one's own, without proper acknowledgment, is plagiarism; therefore, any student who fails to give credit for quotations or essentially identical expression of material taken from books, encyclopedias, magazines and other reference works, or from themes, reports or other writings of a fellow student, is guilty of plagiarism.

Attendance:

Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive, as defined in the course syllabus.

When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting.

Students who enroll in a course but have "Never Attended" by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of an "F" as determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy.

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.

(http://catalog.southplainscollege.edu/content.php?catoid=47&navoid=1229#Class_Attendance)

Due to the importance of the emergency medical information being taught, the instructor of this course defines excessive absences as missing the 4th class day (or having equivalent tardies) in a course section. A student who meets these criteria will be administratively dropped from the course by the instructor.

- Tardies: (Definition): arriving any time after the class has started or not returning from an approved break after class has started.
- Two tardies will be considered missing one class day and counted as such.
- Work schedule is not an excuse for missing class.
- Any exceptions to this policy must be discussed on an individual basis with the course instructor and the SRTG Program Director. (i.e. – student hospitalization, immediate family member death, etc.)

Drop and Schedule Change:

Students should submit a [Student Initiated Drop Form](#) online.

Students will not be required to obtain an instructor signature to drop, however, we do encourage students to communicate with instructors or advisors prior to dropping a course when they are able. **There will be no charge for drops for the fall or spring semesters.**

Withdrawing from all classes

If a student wishes to withdraw from all courses, they should initiate that process with the Advising Office. They can schedule an appointment with an advisor by visiting <http://www.southplainscollege.edu/admission-aid/advising/spcadvisors.php> or by calling 806-716-2366.

Syllabus Statements

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Team,

COMMUNICATION

Email

Electronic communication between instructor and students in this course will utilize the South Plains College “My SPC” and email systems. I will utilize Remind messaging and you may communicate with me this way also. The instructor will not initiate communication using private email accounts. Students are required to check SPC email on a regular basis each week of class. Students will also have access to assignments, web-links, handouts, and other vital material which will be delivered via the classroom website. Any student having difficulty accessing the classroom website or their email should immediately contact their instructor for directions. The instructor will work with any student to ensure the student has access to a computer on campus and can obtain the needed class content that is located on the course website.

- **Instructor will not communicate using private email accounts.**
- **I will return e-mails within 24 hours. If you need immediate assistance, please call me 806-716-4643. If leaving a message please give your name, student ID #, and a good phone # to return your call.**

Cell Phone/Smart watch policy

Students are not allowed to have cell phones on their person during exams.

Social Media

FACEBOOK/INSTAGRAM

The Surgical Technology Program has a Facebook page at <https://www.facebook.com/SPCSurgicalTechnology> . In addition to the South Plains College website, this Facebook page will be used to keep students up-to-date on program activities, weather delays, South Plains College announcements and will help with program recruitment. “Liking” the Surgical Technology Facebook page is not mandatory, nor are personal Facebook accounts, to access this page.

Students are NOT allowed to contact faculty (full-time or part-time) through ANY Social Media platforms. This form of contact is not acceptable and extremely unprofessional and could result in dismissal from the Surgical Technology Program.

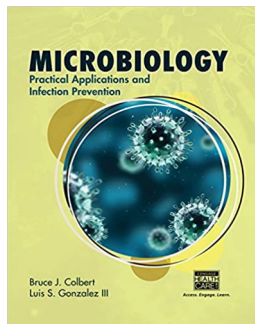
RESOURCES

Blackboard

Blackboard is an e-Education platform designed to enable educational innovations everywhere by connecting people and technology. This educational tool will be used in this course throughout the semester.

Text and Course materials:

Textbook(s):



Microbiology: Practical Applications and Infection Prevention Educator Guide with MindTap

Computer: Needed for all exams, homework, and assigned projects. While a personal computer is not mandatory, multiple computer labs are available for student use during school hours.

SPC EMAIL – Students are required to have their SPC email in working order at all times.

- Instructor will not communicate using private email accounts.
- I will return e-mails within 24 hours. If you need immediate assistance, please

call me 806-716-4643. If leaving a message please give your name, student ID #, and a good phone # to return your call.

Additional Classroom Requirements:

METHODS OF TEACHING

- Lecture
- PowerPoint Presentation
- Question and Discussion
- Review
- Quizzes
- Examinations

Students should come to class prepared with pens, pencils, and a spiral notebook for taking notes or completed quizzes or assignments in class. Students should be prepared to take notes over lecture material if they choose.

Computer Usage:

As computer technology in the field of health occupations continues to become more popular, computers will be used in this course for several assignments. All students have access to computers and printers on the South Plains College campus. Students will be expected to utilize computers to access assignments and classroom resources. All registered students are supplied with a working email account from South Plains College. In order to take exams, students must have their username and password.

ALL STUDENTS ARE EXPECTED TO KNOW THEIR SPC STUDENT USERNAME AND PASSWORD.

Computer Lab Usage:

The computer lab(s) on any campus may be used by students during scheduled hours or as assigned by an instructor. Printer paper will not be provided for students to print materials but students may seek assistance from faculty or staff to request lab paper from the college if needed. Lack of computer lab paper is not an excuse for not having homework assignments, skills lab sheets, or any other required documents. Students should come prepared for class.

COURSE SCHEDULE

Weekly Assignments	Chapters/LAB
WEEK 1 Monday: 8/26 Sunday: 9/4 Coursework DUE by 11:59 pm	<i>Introduction and signing of syllabus forms</i> <i>Lecture, PowerPoint Presentations, question/answer</i> Chapter 1 Lab Assignment
WEEK 2 Monday: 9/2	<i>Lecture, PowerPoint Presentations, question/answer</i> Chapter 1 DUE SUNDAY @ 11:59 pm: MINDTAP
WEEK 3 Monday: 9/9 – EXAM Chapter 1 Sunday: 9/15 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations, question/answer</i> Exam Chapter 1 Chapter 1 Lab Assignment Due Chapter 2
WEEK 4 Monday: 9/16 Sunday: 9/25 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Chapter 2 and 3 DUE SUNDAY @ 11:59 pm: MINDTAP
WEEK 5 Monday: 9/23 Sunday: 9/29 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Exam Chapter 2 and 3 Lab Assignment
WEEK 6 Monday: 9/30 Sunday: 10/6 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Chapter 4 DUE SUNDAY @ 11:59 pm: MINDTAP
WEEK 7 Monday: 10/7 Sunday: 10/13 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Chapter 5 DUE SUNDAY @ 11:59 pm: MINDTAP
WEEK 8 Monday: 10/14 Sunday: 10/20 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Chapter 4 and 5 Exam Lab Assignment
WEEK 9 Monday: 10/21 Sunday: 10/27 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Chapter 6 DUE SUNDAY @ 11:59 pm: MINDTAP
WEEK 10 Monday: 10/28 Sunday: 11/3 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Chapter 7 DUE SUNDAY @ 11:59 pm: MINDTAP
WEEK 11 Monday: 11/ 4 Sunday: 11/10 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Exam Chapter 6 and 7 Lab Assignment

WEEK 12 Monday: 11/11 Sunday: 11/17 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Chapter 8 DUE SUNDAY @ 11:59 pm: MINDTAP
WEEK 13 Monday: 11/18 Sunday: 11/24 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> <u>ONLINE</u> - Chapter 8 Exam DUE SUNDAY @ 11:59 pm: EXAM
WEEK 14 Monday: 11/25 Sunday: 12/1 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Chapter 9 DUE SUNDAY @ 11:59 pm: MINDTAP
WEEK 15 Monday: 12/2 Sunday: 12/8 Coursework DUE by 11:59 pm	<i>Lecture, PowerPoint Presentations</i> Exam Chapter 9 Lab Assignment
WEEK 16 12/9	Comprehensive FINAL MONDAY

Course Objective Overview

Chapter 1

Classification of Microorganisms

Cellular Anatomy and Physiology

- Prokaryotes and Eukaryotes

Normal Flora versus Pathogens

Immunity and Infection

- Immune System
- Infection

Chapter 2

History of Microbiology

- Evolution of the “Science” of Microbiology

Medical Microbiology

- Other Fields and Applications of Microbiology

Bacteriology

- Naming Bacteria
- Bacterial Structure and Morphology

Specimen Collection

- Bacterial Staining
- Bacterial Disease
- Growing and Testing Bacteria

General Principles of Antibiotic Therapy

- Antibiotic Classification

Chapter 3

Virology

- Viral Identification
- Antiviral Agents

Parasitology

- Protozoa
- Helminths
- Ectoparasites

Mycology

- Yeasts
- Molds

Prions

Chapter 4

Basic Definitions

Issues to Consider When Killing an Organism

Methods Used to Disinfect and Sterilize

- Heat
- Pasteurization
- Boiling Water
- Steam and Pressure
- Various Liquids and Compounds
- Gas Sterilization
- Radiation

Chapter 5

Portals of Entry

Routes of Transmission

- Contact
- Common Vehicle
- Airborne
- Vector

Hand Hygiene

Fundamental Principles of Infection Prevention and Control

- Standard Precautions
- Cough Etiquette and Respiratory Hygiene
- Safe Injection Practices
- Safe Handling of Potentially Contaminated Surfaces or Equipment
- Transmission-Based Precautions

Occupational Safety and Health Administration (OSHA) Regulations

Chapter 6

Infectious Waste Disposal

Applying and Removing Nonsterile Disposable Gloves

Applying and Removing Sterile Gloves

Asepsis

- Hand Hygiene for Surgical Asepsis

Sterile Principles

Specimen Collection

- General Principles
- Blood Cultures
- Cerebrospinal Fluid (CSF) Cultures
- Sputum Cultures
- Wound Cultures
- Urine Specimens
- Stool Specimens
- Throat Culture
- Nasal Specimens

Chapter 7

General Disease Terminology

- Signs and Symptoms of Disease

Immunizations

Monitoring Antimicrobial Therapy

Microbial Resistance Mechanisms

Antibacterial Drug Classification

- Bacteriostatic versus Bactericidal
- Spectrum of Activity: Broad versus Narrow
- Based on Mechanism of Action

Antibacterial Agents

- Beta-Lactams
- Penicillins
- Cephalosporins
- Monobactams
- Carbapenems
- Quinolones
- Aminoglycosides
- Glycopeptides
- Macrolides
- Tetracyclines
- Folate Inhibitors
- Oxazolidinones
- Quinupristin-Dalfopristin
- Daptomycin
- Clindamycin
- Metronidazole

Antituberculosis Agents

Antivirals

- Antivirals to Treat Herpes Virus Infections
- Antivirals to Treat Influenza Virus
- Antivirals to Treat Respiratory Syncytial Virus
- Antivirals to Treat Hepatitis C Virus
- Antivirals to Treat Human Immunodeficiency Virus (HIV) Infection

Antifungal Agents

Chapter 8

Infectious Diseases of the Head and Neck

- Meningitis
- Encephalitis
- Otitis Media
- Parotitis
- Infections of the Eye
- Conjunctivitis
- Keratitis

Cardiovascular Infections

- Endocarditis
- Catheter-Related Bloodstream Infections (CRBSIs)
- Infectious Diseases of the Skin and Soft Tissues
- Cellulitis and Erysipelas
- Necrotizing Skin and Soft Tissue Infections

Intra-Abdominal Infections

- Appendicitis
- Acute Cholecystitis
- Diverticulitis
- Clostridium difficile Colitis
- Infectious Diarrhea

Genitourinary Tract Infections

- Sexually Transmitted Diseases
- Urinary Tract Infections
- Bone and Joint Infections
- Osteomyelitis
- Septic Arthritis

Chapter 9

Upper Respiratory Airway Infections

- Sinusitis
- Pharyngitis
- Epiglottitis
- Croup

Infectious Diseases of the Lower Respiratory System

- Acute Bronchitis and Bronchiolitis
- Pneumonia
- Tuberculosis

Bioterrorism

Avian Influenza

SYLLABI ACKNOWLEDGEMENT STATEMENT

Required completion by the end of Week 1, Sunday, by 11:59pm.

After reading and understanding the contents of this syllabus:

- Go to SPC's Blackboard, <https://southplainscollege.blackboard.com>
- Choose the _____ course
- Click on the Course content area
- Click on Syllabus Acknowledgment
- Click on Create Thread
- In the Subject field type: Syllabus
- In the Message field type:

I, (fill in your first and last name), student ID (xxxxxxx), have received, read, and understand the contents of the syllabus for the (Course title and number), Spring 2024. Date (today's date).