MICROBIOLOGY AND WOUND HEALING  
Course Syllabus

Course Number: STAP-0204  
OHLAP Credit: No

OCAS Code: None  
Course Length: 30 Hours

Career Cluster: Health Science  
Career Pathway: Therapeutic Services

Career Major(s): Surgical Technologist (Accredited Program)

Pre-requisite(s):

Course Description: This course is designed to provide the student with a basic background in microbiology. This course will provide a better understanding of the relationship between microorganisms and the maintenance of health and/or the prevention of disease. The course of study includes a general introduction to microbiology, infection/immunology and wound healing.


Online Resources: Blackboard

Course Objectives:

A. Correlate the impact of microbiology in relationship to the practice of sterile technique and infection control in the operative setting.¹
B. Identify the name and function of various parts of the compound microscope.¹
C. Compare and contrast the structure and characteristics of different microorganisms.¹
D. Analyze the various immune responses that occur in the body as defenses against invasion by pathogens.¹
E. Relate the infectious process to surgical practice.¹
F. Compare and contrast intentional unintentional and incidental/chronic wounds.¹
G. Analyze the mechanisms of wound healing, the inflammatory process, and the healing process.¹
H. Evaluate the classification of surgical wounds, analyze factors that influence healing, and devise a plan to prevent postoperative wound infections.¹
I. Demonstrate basic wound care concepts and apply the principles of asepsis to the practice of sterile technique.¹
J. Describe tissue replacement materials.¹
K. Demonstrate knowledge of biological wound cover materials.¹

¹ ODCTE Objective
All unmarked objectives are TTC instructor developed.
Teaching Methods: The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

Grading Procedures: 1. Students are graded on theory and performance. 2. Each course must be passed with eighty (80%) percent or better. 3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%. 4. Career Major grades established during coursework are a major criteria in successfully obtaining certification.

Description of Classroom, Laboratories, and Equipment: Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit: The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Tulsa Community College. See program counselor for additional information.

College Credit Eligibility: The student must maintain a grade point average of 3.0 or better.

Chapter Learning Objectives and Content Outline

Introduction to Microbiology

Chapter Objectives:
- Correlate the impact of microbiology in relationship to the practice of sterile technique and infection control in the operative setting.
- Compare and contrast the structure and characteristics of different microorganisms.
- Demonstrate how disease is transmitted
- Explain why the host-microbe relationship changes
- Explain the significance of spores in medicine

Content Outline:
- History of Microbiology
- Staining methods
- Microbes and relationships
- Identifying microbes
- Bacteria types, diseases, affects
- Viruses, types, diseases, affects
- Protozoa
- Fungi

Infection/Immunology

Chapter Objectives:
- Analyze the various immune responses that occur in the body
- Relate the infectious process to surgical practice.
- Describe some of the body’s defense mechanisms
- List the ways a person acquires immunity to pathogenic organisms
- Explain the significance of multidrug-resistant organisms
- Describe different kinds of vaccines and how they protect against infection

Content Outline:
- Acquired/Passive Immunities
- Vaccines
- Nature of infectious disease
- Portals of entry
Wound Healing

Chapter Objectives:

- Compare and contrast intentional, unintentional, and incidental/chronic wounds.
- Analyze the mechanisms of wound healing, the inflammatory process, and the healing process.
- Evaluate the classification of surgical wounds.
- Analyze factors that influence healing.
- Discuss postoperative wound complications.
- Demonstrate basic wound care concepts and apply the principles of asepsis to the practice of sterile technique.

Content Outline:

- Terms/Definitions
- Wound Healing types and processes
- Wound types
- Surgical Incisions
- Surgical Wounds and classifications
- Wound healing factors
- Surgical Wound closures
- Wound disruptions

- Portals of exit
- Transmission of pathogens
- Epidemiology
- Types of infections
- Immune response
- Allergies/response