



Western Technical College

## 10512128 Surgical Tech Fundamentals 2

### Course Outcome Summary

#### Course Information

<b>Description</b>	Focuses on enhancing surgical technology skills while functioning as a sterile team member. Lab is included.
<b>Career Cluster</b>	Health Science
<b>Instructional Level</b>	Associate Degree Courses
<b>Total Credits</b>	4
<b>Total Hours</b>	108

#### Pre/Corequisites

Prerequisite	10512126 Surgical Tech Fundamentals 1
Prerequisite	10512127 Exploring Surgical Issues
Pre/Corequisite	10806197 Microbiology

#### Textbooks

*Suture & Surgical Hematosis: A Pocket Guide*. Copyright 2006. Pieknik, Rebecca. Publisher: Elsevier Science. **ISBN-13:** 978-1-4160-2247-3. Required.

*Surgical Technology for the Surgical Technologist: A Positive Care Approach*. 5th Edition. Copyright 2018. Association of Surgical Technologists. Publisher: Cengage Learning. **ISBN-13:** 978-1-305-95641-4. Required.

*Pharmacology for Surgical Technologist – with Access*. 5th Edition. Copyright 2021. Howe, Tiffany and Angela Burton. Publisher: Elsevier Science. **ISBN-13:** 978-0-323-66121-8. Required. .

*Surgical Technology Fundamentals 2*. Thompson, Jillian and Charles Gillette. Publisher: Western. **ISBN-13:**

## Success Abilities

1. Live Responsibly: Embrace Sustainability

## High Impact Practices

1. Technology-Enhanced Learning: this course will incorporate digital technologies like gamification, virtual reality experiences, or simulations. In addition, you will create technology-enhanced products such as ePortfolios, multimedia presentations, or other e-products to showcase your learning.

## Program Outcomes

1. Apply healthcare and technological science principles to the perioperative environment
2. Maintain principles of sterile technique in the surgical environment
3. Provide a safe, efficient, and supportive environment for the patient
4. Prepare the patient, operating room and surgical team for the preoperative phase
5. Perform intraoperative case management in the scrub role
6. Perform postoperative case management
7. Function as an ethical, legal, and professional member of the healthcare team as determined by governing bodies

## Course Competencies

### 1. Classify surgical wounds

#### Assessment Strategies

- 1.1. in an oral, written, demonstrative and/or graphic response
- 1.2. by answering questions that require you to apply knowledge about this competency (Your instructor may require several written exams as part of this course. You will be notified in advance.)

#### Criteria

- 1.1. response identifies the classification of surgical wounds
- 1.2. response specifies the surgical procedures related to each type of wound
- 1.3. response identifies the classification of wounds according to their degree of microbial contamination
- 1.4. response includes classification examples of surgical procedures that fall into each category

#### Learning Objectives

- 1.a. Analyze the classifications of surgical wounds.
- 1.b. Distinguish surgical procedures that fit the various categories.

### 2. Compare and contrast wound closure materials

#### Assessment Strategies

- 2.1. in an oral, written, demonstrative and/or graphic response
- 2.2. by answering questions that require you to apply knowledge about this competency (Your instructor may require several written exams as part of this course. You will be notified in advance.)

#### Criteria

- 2.1. you analyze and assess the factors that influence the closure of each wound layer
- 2.2. you analyze the components of suture packaging
- 2.3. you compare and contrast suture materials, suture sizing, and suture coatings
- 2.4. you demonstrate proper suture selection, preparation, handling and cutting techniques
- 2.5. you describe needle points and needle bodies and demonstrate proper placement, handling, loading

- and disposal of surgical needles
- 2.6. you describe different skin closure materials
- 2.7. you identify various wound closure materials

#### **Learning Objectives**

- 2.a. Describe the principles of exposure
- 2.b. Identify the factors that must be considered when choosing suture material, needle, and needle holder
- 2.c. Analyze the classifying characteristics of each type of suture material and suture needle
- 2.d. Summarize the various types of wound closure techniques and accessories
- 2.e. Define terminology related to sutures
- 2.f. Discuss the requirements of suture packaging
- 2.g. Explain the principles of handling suture needles
- 2.h. Describe the techniques for cutting suture material

### **3. Identify stages of wound healing**

#### **Assessment Strategies**

- 3.1. in an oral, written, demonstrative and/or graphic response
- 3.2. by answering questions that require you to apply knowledge about this competency (Your instructor may require several written exams as part of this course. You will be notified in advance.)

#### **Criteria**

- 3.1. you identify intentional, unintentional, and incidental/chronic wounds
- 3.2. you identify the phases and processes of wound healing
- 3.3. you analyze factors that influence wound healing
- 3.4. you identify the complications of wound healing
- 3.5. you demonstrate basic wound care concepts and apply the principles of asepsis and sterile technique

#### **Learning Objectives**

- 3.a. Define the terminology related to wound healing
- 3.b. Describe the various types of wounds
- 3.c. Analyze the mechanisms of wound healing
- 3.d. Evaluate the classification of surgical wounds
- 3.e. Analyze the factors that influence wound healing
- 3.f. Describe the complications that interrupt normal wound healing

### **4. Differentiate among types of specialized surgical equipment**

#### **Assessment Strategies**

- 4.1. by answering questions that require you to apply knowledge about this competency (Your instructor may require several written exams as part of this course. You will be notified in advance.)
- 4.2. in an oral, written, demonstrative and/or graphic response

#### **Criteria**

- 4.1. differentiation includes the function of equipment
- 4.2. differentiation includes the care of equipment
- 4.3. differentiation includes the assembly of equipment
- 4.4. differentiation includes MIS endoscopy equipment
- 4.5. differentiation includes MIS robotic equipment
- 4.6. differentiation includes lasers
- 4.7. differentiation includes ESU
- 4.8. differentiation includes listing necessary equipment in the post anesthesia care unit (PACU)

#### **Learning Objectives**

- 4.a. Describe the biophysics of lasers
- 4.b. Discuss the advantages of lasers
- 4.c. Describe the types and specific applications of each type of laser
- 4.d. Discuss the components of MIS systems
- 4.e. Analyze the risks, advantages, and applications of each type of MIS system
- 4.f. Identify the purposes, uses, and handling of various types of specialty equipment

### **5. Analyze principles of hemostasis**

#### **Assessment Strategies**

- 5.1. in an oral, written, demonstrative and/or graphic response
- 5.2. by answering questions that require you to apply knowledge about this competency (Your instructor may require several written exams as part of this course. You will be notified in advance.)

**Criteria**

- 5.1. you assemble necessary equipment
- 5.2. you prepare electrosurgical unit for use
- 5.3. you place grounding pad
- 5.4. you identify blood components, clotting mechanisms, and the process of monitoring blood loss in the scrub role
- 5.5. you identify mechanical methods
- 5.6. you identify chemical methods
- 5.7. you identify thermal methods
- 5.8. you discuss the mechanisms of hemostasis

**Learning Objectives**

- 5.a. Analyze the principles of surgical hemostasis
- 5.b. Differentiate between various methods of hemostasis
- 5.c. Discuss the surgical technologist's role in hemostasis

**6. Demonstrate care and handling of dressing materials**

**Assessment Strategies**

- 6.1. in an oral, written, demonstrative and/or graphic response
- 6.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

**Criteria**

- 6.1. you maintain principles of sterile technique while applying dressings to the surgical wound
- 6.2. you request dressings be opened at appropriate time
- 6.3. you prepare dressings materials as needed
- 6.4. you cleanse and dry the skin prior dressing application
- 6.5. you apply the dressing as directed
- 6.6. you secure the dressing
- 6.7. you identify appropriate dressing materials for various surgical wounds

**Learning Objectives**

- 6.a. Compare and contrast types of surgical and specialty dressings.
- 6.b. Identify various types of dressings used on the surgical patient.
- 6.c. Differentiate between dressings and sponges.
- 6.d. Evaluate the purposes of surgical dressings.
- 6.e. Analyze the importance of postoperative wound care.
- 6.f. Describe the importance of proper surgical dressing application techniques.
- 6.g. Apply proper principles of sterile technique and demonstrate the application of commonly used types of surgical and specialty dressings.
- 6.h. Demonstrate the application of the principles of asepsis to basic wound care techniques

**7. Prepare catheters and drains for use**

**Assessment Strategies**

- 7.1. in an oral, written, demonstrative and/or graphic response
- 7.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

**Criteria**

- 7.1. you maintain principles of sterile technique while handling catheters/drains
- 7.2. you identify types of catheters and drains for use in surgical procedures
- 7.3. you differentiate between types and uses of catheters and drains
- 7.4. you prepare catheters/drains for specific use

**Learning Objectives**

- 7.a. Compare and contrast the types and characteristics of various catheters and drainage devices.
- 7.b. Correlate the correct drainage device for each drain.
- 7.c. Compare and contrast the conceptual differences between gravity and vacuum drainage.

- 7.d. Prepare catheters and drains for intraoperative use.
- 7.e. Prepare anchoring devices for drains.

## **8. Perform specimen care and handling**

### **Assessment Strategies**

- 8.1. in an oral, written, demonstrative and/or graphic response
- 8.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

### **Criteria**

- 8.1. you demonstrate handling techniques and validation process for different specimens
- 8.2. you pass the specimen to a nonsterile person
- 8.3. you follow safety protocols
- 8.4. you identify specimen type that may be collected
- 8.5. you identify types of specimen containers
- 8.6. you assess methods utilized in specimen identification and test[s]
- 8.7. you identify the procedure for managing a specimen incident

### **Learning Objectives**

- 8.a. Describe specimen types
- 8.b. Discuss methods of obtaining specimens
- 8.c. Identify specimen collection containers
- 8.d. Describe the procedures for handling the transfer of specimens
- 8.e. List required labeling components
- 8.f. Discuss the procedure for managing a specimen incident
- 8.g. Demonstrate handling and the validation process

## **9. Perform intraoperative case management in the scrub role**

### **Assessment Strategies**

- 9.1. in an oral, written, demonstrative and/or graphic response
- 9.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

### **Criteria**

- 9.1. you pass instruments following requests or hand signals to the surgeon
- 9.2. you pass needed supplies and items as requested
- 9.3. you keep the patient area and mayo stand neat
- 9.4. you return instruments not in use by the surgeon to the appropriate location
- 9.5. you request supplies as needed
- 9.6. you label all solutions/medications appropriately before use
- 9.7. you handle specimen appropriately
- 9.8. you prepare closure materials at appropriate times
- 9.9. you initiate counts
- 9.10. you monitor the sterile field
- 9.11. you demonstrate anticipation
- 9.12. you recognize contamination and take appropriate action
- 9.13. you request dressings at the end of the procedure
- 9.14. you report required information to the RN (meds, fluids, implant info, etc.)
- 9.15. you clear the field of instruments, equipment, sharps and supplies at end of procedure
- 9.16. you move mayo stand away from patient
- 9.17. you perform in a timely manner

### **Learning Objectives**

- 9.a. Perform a mock surgical procedure utilizing the principles of asepsis in the first scrub role
- 9.b. Perform a mock surgical procedure utilizing the principles of asepsis in the second scrub role

## **10. Perform the non-sterile role in the perioperative phase**

### **Assessment Strategies**

- 10.1. by applying the principles and skills in a role-play
- 10.2. in an oral, written, demonstrative or graphic response
- 10.3. by answering questions that require you to apply knowledge about this competency [Your instructor may

require several written exams as a part of this course. You will be notified in advance.]

#### **Criteria**

- 10.1. INTRAOPERATIVE
- 10.2. you monitor OR traffic
- 10.3. you anticipate needs of sterile team
- 10.4. you perform counts
- 10.5. you provide specimen care
- 10.6. you perform intraoperative documentation
- 10.7. you monitor the sterile field
- 10.8. POSTOPERATIVE
- 10.9. you provide and secure dressings and drains
- 10.10. you assist transferring patient from OR table to stretcher
- 10.11. you document
- 10.12. you assist with break down of OR
- 10.13. you analyze the immediate postoperative care of the surgical patient

#### **Learning Objectives**

- 10.a. Discuss the purpose of disinfection of the surgical environment
- 10.b. Describe the cleaning process utilizing disinfecting agents
- 10.c. Describe disinfecting agents
- 10.d. Review the perioperative duties of the assistant circulator

### **11. Perform postoperative case management in the scrub role**

#### **Assessment Strategies**

- 11.1. in an oral, written, demonstrative and/or graphic response
- 11.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

#### **Criteria**

- 11.1. you wear proper PPE
- 11.2. you gather reusable supplies and equipment following facility policy
- 11.3. you dispose of sharps, linen and waste following facility policy
- 11.4. you return used instruments according to facility policy
- 11.5. you remove soiled surgical attire appropriately
- 11.6. you return items to proper storage area
- 11.7. you apply principles of disinfection while processing the OR for another procedure
- 11.8. you consistently practice standard precautions
- 11.9. you assist with patient transfer

#### **Learning Objectives**

- 11.a. Demonstrate breakdown of the sterile field
- 11.b. Demonstrate removal of surgical attire
- 11.c. Demonstrate disinfecting of the surgical environment

### **12. Drape the patient, equipment, and furniture for surgical procedures**

#### **Assessment Strategies**

- 12.1. in an oral, written, demonstrative and/or graphic response
- 12.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

#### **Criteria**

- 12.1. you apply sterile technique in draping the mayo stand and/or ancillary tables
- 12.2. you assemble drapes in order of use
- 12.3. you pass drapes in accordance with surgeon preference
- 12.4. you assist with draping the patient
- 12.5. you pass instrumentation utilized to secure draping as needed
- 12.6. you demonstrate the placement of the drapes needed for special equipment (i.e., c-arm drape)
- 12.7. you maintain sterility of the drape while draping
- 12.8. you recognize contamination and take corrective actions

#### **Learning Objectives**

- 12.a. Describe the characteristics of draping material
- 12.b. Describe the types of draping materials
- 12.c. explain the application of drapes to equipment and furniture
- 12.d. Explain the selection of drapes concerning anatomical region
- 12.e. Describe the draping sequence as related to surgical procedures
- 12.f. Demonstrate the principles of asepsis when draping the patient, furniture, and equipment

### **13. Examine emergency situations that may arise in the surgical setting**

#### **Assessment Strategies**

- 13.1. in an oral, written, demonstrative and/or graphic response
- 13.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

#### **Criteria**

- 13.1. you perform duties within the scope of practice related to emergencies in the OR setting
- 13.2. you describe emergency procedures carried out in the OR setting
- 13.3. you determine the role of the Surgical Technologist during malignant hyperthermia
- 13.4. you determine the role of the Surgical Technologist during cardiac arrest/CPR
- 13.5. you determine the role of the Surgical Technologist during hemolytic reaction
- 13.6. you determine the role of the Surgical Technologist during anaphylactic reaction
- 13.7. you determine the role of the Surgical Technologist during hemorrhage
- 13.8. you determine the role of the Surgical Technologist during fluid and hemodynamic disorders

#### **Learning Objectives**

- 13.a. Perform duties related to emergencies in the OR setting.
- 13.b. Describe the emergency procedures carried out in the OR setting.
- 13.c. Recognize the importance of maintaining CPR certification.

### **14. Perform initial steps for starting a surgical procedure**

#### **Assessment Strategies**

- 14.1. in an oral, written, demonstrative and/or graphic response
- 14.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

#### **Criteria**

- 14.1. you bring the mayo stand to the sterile field
- 14.2. you position sterile draped furniture for efficient use
- 14.3. you place light handles
- 14.4. you secure cords and tubing to the sterile field
- 14.5. you place mayo stand over patient appropriately for the procedure
- 14.6. you place appropriate sponges on patient
- 14.7. you hand appropriate instruments to surgeon as requested

#### **Learning Objectives**

- 14.a. Perform time and motion economy principles.
- 14.b. Prepare the OR for a mock surgical procedure
- 14.c. Demonstrate opening and delivery of sterile items utilizing aseptic technique
- 14.d. Demonstrate donning a sterile gown and gloves of your self and others
- 14.e. Assemble and organize the sterile field
- 14.f. Demonstrate counting principles
- 14.g. Demonstrate draping of a surgical patient
- 14.h. Demonstrate finalization of sterile field and transitioning to operative field

### **15. Summarize interventional radiology applications used in surgery**

#### **Assessment Strategies**

- 15.1. in an oral, written, demonstrative and/or graphic response
- 15.2. by answering questions that require you to apply knowledge about this competency [Your instructor may require several written exams as a part of this course. You will be notified in advance.]

#### **Criteria**

- 15.1. you identify the purpose of IR

- 15.2. you identify patient preparation
- 15.3. you identify anatomical access for various IR procedures
- 15.4. you identify patient complications
- 15.5. you describe the components of an IR suite
- 15.6. you identify radiation safety measures
- 15.7. you describe the different imaging modalities
- 15.8. you identify the role of the surgical technologist in various IR procedures

**Learning Objectives**

- 15.a. Describe the purpose and considerations for the use of interventional radiology (IR)
- 15.b. Describe imaging modalities
- 15.c. Evaluate the role of the surgical technologist in IR