

## **COURSE INFORMATION**

<b>COURSE PREFIX NO.:</b>	<b>SUR 102</b>
<b>COURSE TITLE:</b>	<b>APPLIED SURGICAL TECHNOLOGY</b>
<b>LECTURE HRS/WK:</b>	<b>3.0</b>
<b>LAB HRS/WK:</b>	<b>6.0</b>
<b>CREDITS HRS/SEMESTER:</b>	<b>5.0</b>

[Distance Learning Attendance/VA Statement](#)  
[Textbook Information](#)

## **COURSE DESCRIPTION**

This course covers the principles and application of aseptic technique, the perioperative role, and medical/legal aspects. This course will also cover microbiology, hemostasis and emergency situations, surgical pharmacology and anesthesia, instrumentation, equipment, and supplies, wound healing, sutures, needles, and stapling devices.

## **COURSE COMPETENCIES**

### **MODULE 1: Microbiology**

1. Describe the historical perspectives important in the development of microbiology.
2. List Koch's postulates and exceptions to the postulates.
3. Identify the primary characteristics of bacteria.
4. Compare and contrast the three basic shapes of bacteria.
5. Identify various bacteria: protozoans, algae, fungi, parasites, and viruses.
6. Describe the functions of the nucleus, endoplasmic reticulum, ribosomes, Golgi complex, mitochondria, lysosomes and centrioles.
7. Compare and contrast aerobic, anaerobic, and facultative bacteria species.
8. Explain the ways that a virus enters and damages a host cell.
9. Explain the ways that a pathogen damages a host cell.
10. Clarify the difference between contamination and infection.
11. Compare and contrast chemical and thermal sterilization methods in the operating room.
12. Explain the difference between disinfection and sterilization.
13. Define aseptic technique and describe its application in the operating room.
14. Describe surgical conscience and why it is important to the surgical technologist.
15. Describe the components of the immunity system.
16. Distinguish between active and passive acquired immunity.
17. Define noscomial infections and their meaning to the surgical technologist.
18. Describe the dangers of antibiotic-resistant staphylococcus aureus and implications to operating room personnel.
19. Compare and contrast various diseases and the implications of the surgical technologist.
20. Explain how blood can become infected with microorganisms.

### **MODULE 2: Asepsis and Sterile Technique**

1. Discuss the relationship between the principles of asepsis and practice of sterile technique and surgical patient care.
2. Define and discuss the concept of surgical conscience.
3. Discuss the principles of asepsis.
4. Define the terms related to asepsis.
5. Discuss the sterile practices related to the principles of asepsis.
6. Identify the principles and procedures related to disinfection and sterilization.

7. Demonstrate competency related to the practice of sterile technique.
8. Demonstrate competency in the procedures related to disinfection and sterilization.
9. Discuss the surgical environment and the application of the principles of asepsis to the environment.

### **MODULE 3: Surgical Case Management**

1. Analyze the role of the STSR in caring for the surgical patient.
2. Verify the preoperative routines that must be completed.
3. Demonstrate the transportation of the surgical patient.
4. Apply the principles of surgical positioning.
5. Demonstrate techniques of opening and preparing supplies and instruments needed for any operative procedure with the maintenance of sterile technique at all times.
6. Summarize the methods of preparation of the operative site for surgery.
7. Demonstrate the application of thermoregulatory devices.
8. Interpret the principles and demonstrate the taking and recording of vital signs.
9. Interpret the principles of urinary catheterization and demonstrate the procedure.
10. Analyze how the principles of operative site preparation and urinary catheterization are related both to patient care and to the principles of asepsis.
11. Demonstrate the proper techniques for the surgical hand scrub, gowning, gloving, and assisting team members.
12. Demonstrate the proper technique for preparing supplies and instruments on a sterile field.
13. Demonstrate and explain in detail the procedure for counting instruments, sponges, needles, and other items on the sterile field.
14. Demonstrate intraoperative handling of sterile equipment.
15. Demonstrate the initial steps for starting a surgical procedure.
16. Summarize and demonstrate postoperative routines.

### **MODULE 4: Surgical Pharmacology and Anesthesia**

1. Recognize general terminology and abbreviations associated with pharmacology and anesthesia.
2. Assess the action, uses, and modes of administration of drugs and anesthetic agents used in the care of the surgical patient.
3. Recognize the side effects and contraindications for use of drugs and anesthetic agents.
4. Interpret the factors that influence anesthesia selection for individual patients.
5. Demonstrate safe practice in transferring drugs and solutions from the nonsterile area to the sterile field.
6. Demonstrate the procedure for identifying a drug or solution on the sterile field.
7. Analyze how sterile technique is used in relation to certain anesthesia procedures.
8. Convert equivalents from one system to another and accurately identify, mix, and measure drugs for patient use.
9. Compare and contrast the roles of the STSR and circulator during the administration of anesthesia.
10. Demonstrate the precautions in identifying drugs and solutions in the OR.
11. List the equipment used as an adjunct to anesthesia

### **MODULE 5: Instrumentation, Equipment, and Supplies**

1. Associate the relationship between instrumentation, equipment, and supplies with quality patient care in the OR.
2. Indicate items that require sterilization prior to use in the sterile field.
3. Recognize basic instruments by type, function, and name.
4. Demonstrate proper care, handling, and assembly of instruments.
5. Differentiate the types of special equipment utilized in OR practice and demonstrate proper care, handling techniques, and safety precautions.

6. Cite the names and functions of accessory equipment and demonstrate proper care, handling, and assembly.
7. Collect and prepare supplies used in the OR.
8. Associate the relationship between instruments, equipment, and supplies and the OR environment with safety concepts.

## **MODULE 6: Wound Healing, Sutures, Needles, and Stapling Devices**

1. Indicate terms relevant to wound healing.
2. Summarize the possible complications of wound healing.
3. Recognize the classifications of surgical wounds.
4. Indicate and give examples of types of traumatic wounds.
5. Recognize the characteristics of inflammation.
6. Recognize the characteristics of the types of healing.
7. Recognize the stages/phases of wound healing.
8. Recognize the types, characteristics, and uses of natural and synthetic absorbable suture materials.
9. Analyze the factors that influence healing and recognize the manner in which they affect the healing process.
10. Demonstrate application of recommended preparation and handling techniques for suturing and stapling devices and provide rationale for choice.
11. Summarize the basic uses and advantages of stapling instruments.
12. Cite and interpret common suture terms.
13. Classify and differentiate suture materials and stapling devices and their usage.
14. Cite and interpret common suture techniques.
15. Distinguish, describe the use of, and demonstrate proper handling of the various types of surgical needles.
16. Compare and recognize the common natural and synthetic nonabsorbable sutures, stating their sources, common trade names, and uses.
17. Assess the types of injury that cause damage to tissues.
18. Demonstrate the proper techniques for the surgical hand scrub, gowning, gloving, and assisting team members.
19. Demonstrate the proper technique for preparing supplies and instruments on a sterile field.
20. Demonstrate and explain in detail the procedure for counting instruments, sponges, needles, and other items on the sterile field.
21. Demonstrate intraoperative handling of sterile equipment and supplies.
22. Summarize and demonstrate postoperative routines.

## **MINIMAL STANDARDS**

Students must have a final average of 80% or better in lecture and a final average of 80% or better in the laboratory component of this course. If either the lecture or the lab average is below 80%, the student will not **successfully complete** this course. The student must **earn a satisfactory final grade (80% or higher)** in this course to continue in the Surgical Technology Program.

## **COURSE REQUIREMENTS**

In order to successfully complete SUR 102, the student is required to fulfill the following requirements:

1. Complete all reading assignments prior to class sessions.
2. Successfully complete all competency-based exams, quizzes, projects, and assignments with a minimum average grade of 80%.

## EVALUATION STRATEGIES

### Written Exams:

Each module will have a minimum of one (1) exam. All tests will be announced one (1) week prior to the exam date. The exam can be constructed with multiple choice questions, matching, fill-in-the-blank, essay (short essays) or class presentations/projects. **If a student will be absent on the day of the exam she/he is to contact the instructor prior to class.** If a student is not present on the day of the assigned exam, the grade for the exam will be dropped one letter grade. The student must make an appointment with the Assessment Center (981-7176) to schedule a time to complete the exam. The exam must be taken prior to the next class meeting. If a student fails to make up the exam, the student will receive a grade of zero (0) on the exam. No exams will be returned to the student until all students have taken the exam.

### Lab Competencies:

All competency skills assessments will be announced a minimum of one (1) week prior to the check-off. If a student is not present on "check-off" day, each missed competency will be dropped one letter grade. She/he must make-up the missed competency(s) on a designated date set by the instructor. In the event the student fails to attend the makeup day, a grade of zero "0" will be **earned** and the student may be dismissed from the Surgical Technology Program.

## GRADING PROCEDURES

Grades will be based on performance on written competency-based tests, class work, projects, and quizzes. Exam material will come from text book, lecture material, handouts and class discussion.

### Evaluation of performance:

- Module exams: 30%
- Class work/Homework: 20%
- Projects: 20%
- Lab/instrument: 30%

### College Grading Scale:

93 - 100	A
85 - 92	B
80 - 84	C
75 - 79	D
Below 75	F

**Exams:** Exam schedule will be given in class. (6 Exams – each will count as 5% of your final grade)

**Class work/Homework:** Assignments will be given to complete in class or at home. (6 Homework assignments - Each will count as 3.4% of your final grade)

**Projects:** Projects will be given to complete at home. (Two projects - Each will count as 10% of your final grade.)

**Lab:** Lab grade will consist of Return Demonstration and Instrument Exam.

1. Return demonstration will count as 80% of your final Lab grade.
2. Instrument exam will count as 20% of your final Lab grade.
3. The grade earned from the return demonstration (80%) and instrument exam (20%) will be the final Lab grade which counts as 30% of the final grade of SUR 102.

## ATTENDANCE

### Attendance Policy:

Students are expected to attend all lecture and lab sessions of SUR 101. If an absence is unavoidable, the student must contact the instructor prior to the class and/or lab session. Failure to attend class will result in an absence. After two absences, a written warning will be issued. The third absence could result

in withdrawal from the program at the discretion of the program director. SUR students are responsible for explaining EACH absence. Please see the SUR TECH Student Handbook for additional information.

It is the judgment and experience of the program administrator that more than **two** absences make successful satisfactory completion of course requirements very difficult. The student may apply to be considered for re-admission if all other grades and lab performance are satisfactory according to York Tech policy. Refer to the *York Technical College Student Catalog & Handbook*. Students should realize the direct relationship that exists between good grades and class attendance.

**Late arrivals / Early departures:**

Attendance in a class meeting requires being in the classroom prepared for class at the time the class is scheduled to begin **and** remaining in the classroom until the instructor concludes the class session. Students are expected to arrive to class meetings at or before the scheduled start time and stay for the entire class session. Three (3) late arrivals and/or early departures will equal one (1) absence. **Students are required to phone the instructor for all absences and late arrivals.**

**Lab attendance:**

The student must attend lab as scheduled. Any time missed must be made up as soon as possible by scheduling it with the lab instructor. If a student must be absent, the lab instructor is to be notified as soon as possible. Students must attend lab regularly, as scheduled, as an employee would be responsible to the workplace.

**ACADEMIC INTEGRITY**

The policies stated in the *York Technical College Catalog & Handbook and the Surgical Technology handbook* will be enforced.

**ENTRY LEVEL SKILLS**

A student entering SUR 102 should have appropriate entrance scores for the Surgical Technology Program and the willingness to read, comprehend, and communicate effectively.

**PREREQUISITES – None**

**CO REQUISITES**

SUR 101

SUR 130 is a co-requisite for the Surgical Technology Diploma and is not a requirement for the Central Service Certificate.

**DISABILITIES STATEMENT**

Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Special Resources Offices (SR) at 803-327-8007 in the 300 area of Student Services. The SRO coordinates reasonable accommodations for students with documented disabilities.

**Revised: 8/09**