COURSE INFORMATION

Course Prefix/Number: SUR 102
Course Title: Applied Surgical Technology
Lecture Hours/Week: 3.0
Lab Hours/Week: 6.0
Credit Hours/Semester: 5.0

VA Statement/Distance Learning Attendance
Textbook Information
Student Code and Grievance Policy
Attendance Statement (3-30-4000.1)

COURSE DESCRIPTION

This course covers the principles and application of aseptic technique, the perioperative role, and medical/legal aspects.

COURSE COMPETENCIES

This course will also cover microbiology, hemostasis and emergency situations, instrumentation, equipment, and supplies, wound healing, sutures, needles, and stapling devices.

Module 1: Microbiology

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

**Module 2: Decontamination, Sterilization, and Disinfection**
- Distinguish between disinfection and sterilization.
- Distinguish between the process of sterilization and other processes that render objects clean.
- Explain the Spaulding system of classification.
- Describe the steps of reprocessing from the point of use to sterilization.
- State the terms related to disinfection and sterilization.
- Define a prion and access information regarding Creutzfeldt-Jakob disease.
- Describe the different methods of sterilization used in the operating room.
- Explain the rationale for proper loading of the steam sterilizer.
- Explain the principles of gas sterilization.
- Describe the environmental concerns associated with the use of the gas sterilizer.
- Recognize the hazards associated with the use of chemical disinfectants.
- Describe terminal decontamination of the operating room (OR) environment and equipment.

**Module 3: Aseptic Technique**
- Discuss the relationship between the principles of asepsis and practice of sterile technique and surgical patient care.
- Define and discuss the concept of surgical conscience.
- Discuss the principles of asepsis.
- Define the terms related to asepsis.
- Discuss the sterile practices related to the principles of asepsis.
- Identify the principles and procedures related to disinfection and sterilization.
- Demonstrate competency related to the practice of sterile technique.
- Demonstrate competency in the procedures related to disinfection and sterilization.
- Discuss the surgical environment and the application of the principles of asepsis to the environment.

**Module 4: Case Planning and Intraoperative Routines**
- Explain the rationale for a sterile setup.
- Describe the process to perform sponge, needle, instrument, and sharp counts correctly.
- Define TIME OUT.
- Demonstrate how to pass instruments.
- Demonstrate neutral zone (no-hands) technique.
- Describe the methods used to protect the wound during surgery.
- Discuss the consequences of a lost or mislabeled specimen.
- Identify methods to care for specimens correctly.

**Module 5: Surgical Skin Preparation and Draping**
- Describe urinary catheterization and the rationale for the method used.
- Explain the risks in urinary catheterization.
- Explain the rationale for the surgical skin prep.
- List the characteristics of common surgical prep solutions.
- Identify necessary precautions to prevent injury associated with the skin prep.
Describe the protocols for hair removal.
Describe the fundamental steps in surgical skin prep.
Identify the proper technique for draping the patient for torso, limb, and lithotomy procedures.

Module 6: The Surgical Wound
- Describe surgical methods of hemostasis.
- Describe the sizing system used for sutures.
- Discuss the structure and properties of suture.
- Identify surgical needles by their shape and point style.
- Identify safety precautions to prevent needle-stick injuries during suture use.
- Describe common wound drains and why they are used.
- Discuss types of dressings and why they are used.
- Explain the process of healing.
- Discuss postoperative wound complications.

Module 7: Surgical Instruments
- Describe several methods of learning about instruments.
- Develop a personal plan for learning instruments.
- Identify the different types of finishes on surgical instruments.
- Differentiate types of instruments by their function.
- Describe the care and handling of instruments.
- Differentiate types of instruments by their function.
- Describe the care and handling of instruments.

Module 8: Law and Ethics
- Discuss the relationship between ethics and law.
- Describe sources of the law.
- Describe common hospital policies.
- Discuss the importance of terminology in studying ethics and law.
- List common areas of negligence in the operating room.
- Define criminal liability.
- Discuss why documentation is important.
- Describe informed consent.
- Describe and give examples of an incident report.
- Describe the advance directive and the living will.

Module 9: Transporting, Transferring, and Positioning the Surgical Patient
- Use safe body mechanics during patient transportation, transferring, and positioning.
- Describe the responsibilities of the surgical technologist in patient transport and transfer.
- Use the correct procedure to identify a patient.
- Demonstrate how to assist a patient from a bed to a wheelchair.
- Identify how to ease a patient to the ground in the event of a fall.
- Demonstrate how to safely transfer a patient from a bed to a stretcher.
- Describe how to safely transport a patient by stretcher.
- Demonstrate the transfer of a patient from a stretcher to the operating table.
- Demonstrate the transfer of a semiconscious patient from the operating table to a stretcher.
• Identify the proper transport for a pediatric patient.
• Describe the use of common operating table accessories.
• Describe the principles of safe positioning.
• Describe the consequences of nerve and blood vessel compression.
• Describe how to prevent shearing injury.
• Describe the stages of decubitus ulcers and how to prevent them.
• Describe compartment syndrome and how to prevent it.
• Participate in commonly used methods of patient positioning.
• Describe how to do the following when positioning a patient:
  1. Prevent brachial plexus injury;
  2. Prevent ulnar nerve injury;
  3. Prevent injury to the face, ear, and eye;
  4. Prevent injury to the breasts and the genitalia in prone position

MINIMAL STANDARDS

The student must earn a satisfactory final grade (80% or higher) in this course to continue in the Surgical Technology Program per the policies as outlined in the surgical Technology Student Handbook.

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%.

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.

Exams

There will be an exam for each Module. For each module, you will be notified in class the day the lecture is complete when the exam will be administered. Students should make every effort to take the exam on the assigned day. Students will have the opportunity to make-up 1 exam per course. Future missed exams may result in a “0” unless extenuating circumstances have been discussed with the instructor ahead of time. The student should be prepared to take the exam in the assessment center the day they return to school unless extenuating circumstances have been discussed with the instructor ahead of time. (9 Exams will be averaged to equal 60% of your final grade.)

See SUR 102 Course Addendum for further requirements and exam make-up policy.
Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93 - 100</td>
</tr>
<tr>
<td>B</td>
<td>85 - 92</td>
</tr>
<tr>
<td>C</td>
<td>80 - 84</td>
</tr>
<tr>
<td>D</td>
<td>75- 79</td>
</tr>
<tr>
<td>F</td>
<td>Below 75</td>
</tr>
</tbody>
</table>

The student must earn a satisfactory final grade of (80% or higher) in this course to continue in the Surgical Technology Program per the program policies as outlined in the Surgical Technology Student Handbook.

COURSE REQUIREMENTS

Late Arrivals/Early Departures
Attendance in a class meeting requires being in the classroom and 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.

Academic Integrity
The policies stated in the York Technical College Handbook will be enforced. Any student violating these policies will be subject to academic discipline.

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 Office (SRO) at 803-327-8007 in the 300 area of Student Services. The SRO coordinates reasonable accommodations for students with documented disabilities.