Course Prefix and Number: STEC 102/102L

Credits Hours: 4

Course Title: Introduction to Surgical Techniques

Prerequisites: STEC 101

Clock Hours: 30 hours lecture, 40 hours lab

Time Increments: semester

Althoff, T and Hinton, D.; Surgical Mayo Setups, 1st edition
Rutherford, Colleen; Differentiating Surgical Instruments, 2nd edition
Rutherford, Colleen; Flashcards for Differentiating Surgical Instruments

Course Description:
This is the second course in the STEC Program, building on STEC 101. It continues educating the student on the equipment and furniture commonly found in the OR and on work place safety. This also introduces the student to asepsis and sterile technique and the role of each member of the surgical team, as well as basic instrumentation, scrubbing, gowning, gloving, positioning, prepping, draping and correct sponge, sharps and instrument counts.

Methods of Teaching: Lecture, discussions, audio-visual, computer programs (Live-OR, Websurg), and Skills Lab.

Learning Outcomes:
At the end of this course, the student will

A. integrate knowledge of disinfection and sterilization principles and practices with the pre – op and post – op duties of the surgical technologist;
B. apply concepts of proper aseptic techniques to prepare, organize, set-up, and maintain the sterile environment during pre – op, intra-op, and post – op procedures;
C. demonstrate techniques for donning of sterile and removal of contaminated gloves and gown;
D. demonstrate proper preparation and application of prep solutions and appropriate sterile draping for various surgical procedures; and
E. select correct instruments for various surgical procedures by correlating anatomical and instrument knowledge.

To achieve the learning outcomes, the student will

1. distinguish between disinfection and sterilization. (A)
2. recognize the classification of patient-care equipment. (A)
3. recognize the hazards associated with the use of chemical disinfectants. (A,D)
4. describe different disinfectant agents. (A)
5. explain what sanitation is and how it is accomplished. (A)
6. describe the process of instrument decontamination. (A)
7. list the postoperative duties of the surgical technologist. (A,B)
8. apply standard precautions as they apply to decontamination. (A,B)
9. describe personal protective equipment. (A,B)
10. define sterility. (A,C,B)
11. distinguish between the process of sterilization and other processes that render objects clean or disinfected. (A)
12. describe the different methods of sterilization used in the operating room. (A)
13. explain how to properly load the steam sterilizer. (A)
14. list safety precautions when using any type of sterilizer. (A)
15. determine which sterilization process is approved for which equipment. (A)
16. understand the principles of gas sterilization. (A)
17. describe the environmental concerns associated with the use of the gas sterilizer. (A)
18. prepare equipment for sterilization. (A)
19. describe the rationale for practicing aseptic technique. (B)
20. clearly distinguish among sterile, non-sterile, and aseptic. (B)
21. explain surgical conscience. (B)
22. explain the concept of barriers. (B,C)
23. practice the rules of aseptic technique. (B)
24. explain the relationship between personal hygiene and aseptic technique. (B)
25. perform the surgical hand scrub correctly. (C)
26. demonstrate aseptic technique by donning gown and gloves. (C)
27. don sterile gloves using proper open gloving technique. (C)
28. remove gown and gloves using aseptic technique. (C)
29. remove contaminated gloves from another person. (C)
30. discuss reasons why personnel might not follow the rules of asepsis. (C,B)
31. list the characteristics of common surgical prep solutions. (D)
32. identify necessary precautions to prevent injury associated with skin preparation. (D)
33. identify the use of a “no touch” preparation technique. (D)
34. explain the concepts of body hair management prior to surgery. (D)
35. identify the proper procedure to perform the surgical skin preparation for all areas of the body. (D)
36. identify the proper aseptic technique to catheterize male and female patients. (D)
37. identify the proper technique for draping the patient for torso, limb, and lithotomy procedures. (D)
38. demonstrate the correct set-up of a surgical case. (A,E)
39. demonstrate methods to open surgical supplies correctly. (A,E)
40. describe the process to perform sponge, needle, instrument, and sharp counts correctly. (B)
41. demonstrate neutral zone (no-hands) technique. (B)
42. demonstrate passing instruments so they are properly oriented for use. (E)
43. identify methods to care for specimens correctly. (E)
44. discuss methods of wound irrigation. (E)
45. identify methods to achieve hemostasis during surgery. (E)
46. discuss the selection and preparation of wound drains. (E)  
47. demonstrate preparation of the surgical wound dressing. (E)  
48. describe safe techniques for handling tissues. (E)  
49. describe the characteristics of tissue. (E)  
50. identify classifications of instruments. (E)  
51. differentiate types of instruments by their functions. (E)  
52. identify the different types of finishes on surgical instruments. (E)  
53. describe the care and handling of instruments. (E)  
54. describe several methods of learning about instruments. (E)  
55. develop a personal plan for learning instruments. (E)  
56. read each chapter prior to class. (A,B,C,D,E)  

Course Requirements:  To earn a grade of “C” or higher the student must earn 70% of the total points for the course and meet all of the following course requirements.  

- minimum 75% on each test  
- minimum 80% on each practical test  
- satisfactory outlines for the 7 procedure videos  

Outcome Assessment Methods:  
- written exams,  
- skill evaluations verified by instructor utilizing skills proficiency check-off forms  
- timed hands-on exams  
- Elsevier Video outline  

Course Grading Scale:  

A- 90% or more of total points with no test score less than 75% including the comprehensive final exam and no practical test score below 80% and demonstrated competency in all skills  
B- 80% or more of total points with no test score less than 75% including the comprehensive final exam and no practical test score below 80% and demonstrated competency in all skills  
C- 70% or more of total points with no test score less than 75% including the comprehensive final exam and no practical test score below 80% and demonstrated competency in all skills  
D- 60% or more of total points  
F- less than 60% of total possible points or less than 75% on any test or less than 80% on any practical exam  

Attendance Policy:  The college attendance policy, which is available at http://www.bpcc.edu/catalog/current/academicpolicies.html, allows that “more restrictive attendance requirements may apply to some specialized classes such as laboratory, activity, and clinical courses because of the nature of those courses.”  The attendance policy of the Surgical Technology program is described in the Surgical Technology Clinical Handbook.
Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, certification exams and/or clinical fees.

Nondiscrimination Statement

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Course Content Outline:

Chapter 11: Decontamination, Sterilization, and Disinfection

I. Principles of Decontamination, Sterilization, and Disinfection
   A. Basic Terms
   B. Standards and Regulations
   C. Selecting a Reprocessing Method
   D. Best Practice for Reprocessing
   E. Coordinating the Roles of Central Service and Perioperative Personnel
   F. Cycle of Reprocessing

II. Cleaning and Decontamination
   A. Cleaning at the Point of use
   B. Decontamination

III. Processing in the Clean Work Area
   A. Instrument Inspection
   B. Instrument Set Assembly
   C. Wrapping Equipment for Sterilization
IV. Methods of Sterilization
   A. Selecting a Method
   B. Process-related Parameters of Sterilization
   C. Quality Assurance in Sterilization Practices
   D. Steam Sterilization
   E. Ethylene Oxide Sterilization
   F. Gas Plasma Sterilization
   G. Liquid Peracetic Acid Sterilization
   H. Instruments Exposed to Creutzfeldt-Jakob Disease (CJD) Prions
   I. Storage and handling of Sterile Goods

V. Disinfection
   A. Terms Related to Disinfection
   B. Use of Chemical Disinfectants
   C. High Level Disinfection
   D. Chemical Disinfectants for Medical Devices
   E. Low Level Disinfection: Noncritical Areas
   F. Environmental Disinfectants
   G. Environmental Cleaning
   H. Routine Decontamination of the Surgical Suite.

Chapter 10: The Principles and Practice of Aseptic Technique

I. Evidence-Based Practice
   A. Evidence-Based Practice in Practice
   B. Examples of Evidence-Based Practice
   C. Learning to Use Evidence-Based Practice

II. Standards and Recommendations

III. Important Definitions
   A. Asepsis
   B. Sterility
   C. Contamination
   D. Surgical Conscience
   E. Concept of Barriers

IV. Personal Asepsis
   A. Health and Hygiene
   B. Jewelry

V. Surgical Attire
   A. Scrub Suit
   B. Nonsterile Cover Jacket
   C. Head Cap
   D. Protective Eyewear and Face Shield
   E. Mask
   F. Shoes and Shoe Covers

VI. Hand Hygiene
   A. Purpose
   B. Fingernails
   C. Hand Washing
   D. Hand Antisepsis
VII. Surgical Hand Scrub/Rub
   A. Surgical Scrub
   B. Technique
   C. Surgical Hand Rub

VIII. Gowning and Gloving
   A. Drying Your Hands
   B. Gowning Yourself
   C. Gloving Yourself
   D. Double Gloving
   E. Closed Gloving
   F. Open Gloving
   G. Gowning and Gloving Other Team Members
   H. Replacing a Contaminated Glove
   I. Removing Sterile Attire

IX. Opening a Case
   A. Large Packs
   B. Instrument Trays
   C. Basins

X. Intraoperative Techniques
   A. Delivering Sterile Goods
   B. Peel Pouches
   C. Sharps
   D. Solutions
   E. Contamination During Surgery

XI. Maintaining the Sterile Field
   A. Reality versus Standards

Chapter 21: Case Planning and Intra-operative Routines

I. Case Planning
   A. Diagnostic Procedure
   B. Reconstructive Surgery
   C. Repair
   D. Removal
   E. Replacement or Implantation

II. Case Preparation
   A. Assignments
   B. Gathering Supplies and Instruments
   C. Surgeon’s Preference Card

III. Opening a Case
   A. Preparing Nonsterile Equipment
   B. Opening Sterile Supplies
   C. Sterile Setup
   D. Time-and-Event-Related Supplies
   E. Suture Preparation
   F. Instruments
   G. Mayo Stand
   H. Solutions and Drugs
I. Completing the Setup

IV. Sponge, Sharps, and Instrument Count
   A. Definition and Rationale
   B. Responsibility for the Count
   C. When to Perform the Count
   D. Who Performs the Count
   E. Counted Items
   F. Procedure for the Count
   G. Documentation
   H. Lost and Retained Items

V. Starting the Case

VI. Timeout

VII. Managing the Surgical Field
   A. Maintaining an Orderly Setup
   B. Lighting
   C. Sponges
   D. Managing Sponges for a Count
   E. Handling and Passing Instruments
   F. Tissue management
   G. Preventing Tissue Injury

VIII. Management of Surgical Specimens
   A. Responsibility for Specimens
   B. Receiving Specimens from the Sterile Field

IX. Wound Closure

Chapter 20: Surgical Skin Preparation and Draping

I. Urinary Catheterization
   A. Description
   B. Supplies
   C. Procedure
   D. Risks of Catheterization

II. The Surgical Skin Prep
   A. Hair Removal
   B. Recommended Guidelines for the Prep
   C. Prepping Agents
   D. Guidelines
   E. Procedure for the Skin Prep
   F. Risks Associated with the Surgical Prep
   G. Specific Prep Sites

III. Draping the Surgical Site
   A. Rationale
   B. Principles
   C. Draping Fabrics and Materials
   D. Techniques used in Draping
   E. Aseptic Technique during Draping
   F. Draping the Surgical Site
   G. How to Drape Large Equipment
H. Removing Drapes

Chapter 12: Surgical Instruments

I. Critical Thinking and Surgical Instrumentation
II. Working with Instruments
III. Instrument Manufacturing and Design
   A. Manufacturing
   B. Instrument Design
IV. Types of Instruments by Function
   A. Grasping and Holding Instruments
   B. Clamping and Occluding Instruments
   C. Cutting and Dissecting Instruments
   D. Retracting (Exposing) Instruments
   E. Dilators
   F. Measuring Instruments
   G. Suturing Instruments
   H. Suction Tips
V. Tissue Types and instrument Selection
   A. Body Planes and Structure

LAB

I. Skills Assessment Check Off for the following:
   1. Basic Handwash
   2. Donning Surgical Attire
   3. Open Back table to establish sterile field
   4. Open sterile supplies-small wrapped packages onto sterile field
   5. Open sterile supplies-small wrapped packages onto rolling table (personal gown and glove).
   6. Open sterile supplies-peel pack
   7. Open sterile supplies-instruments sets
   8. Surgical scrub
   9. Gown and glove self
   10. Dress mayo
   11. Instrument handling-load a needle and knife blade
   12. Case management-drape the patient
   13. Instrument handling-recognize, prepare, and pass
   14. Fill a bulb syringe
   15. Gown and glove the surgeon and/or team member
   16. Disrobe or deglove to replace a contaminated item
   17. Disrobe at end of case
   18. Remove soiled gloves
   19. Open glove technique

Reviewed by: A. Smith, March 2017