SURGICAL TECHNOLOGY PROCEDURES I
Course Syllabus

Course Number: STAP-0114
OCAS Code: None
Course Length: 90 Hours
Career Cluster: Health Science
Career Pathway: Therapeutic Services
Career Major(s): Surgical Technologist (Accredited Program)

Pre-requisite(s): Surgical Technology Orientation, Core Employability Skills, Anatomy & Physiology I & II, Core Medical Terminology, Introduction to Surgical Technology, Surgical Patient Care, Essentials of Surgical Asepsis, Surgical Case Management, Microbiology and Wound Healing, Surgical Pharmacology, and Disaster and Emergency Preparedness

Course Description:
This course is designed to provide instruction in procedures outlined in the Core Curriculum for Surgical Technologists by the Association of Surgical Technologists. The student will be able to apply and demonstrate the concepts related to the following surgical procedures: Robotics, General, Obstetric and Gynecological, Genitourinary, Otorhinolaryngeal, and Orthopedic Surgery.

Textbooks:
Surgical Technology Principles and Practice 5th Ed. by Joanna Kotcher Fuller, Elsevier Sanders (2013).
Differentiating Surgical Instruments 2nd Ed., F. A. Davis (2012)
Differentiating Surgical Equipment and Supplies, by Colleen J. Rutherful, FA Davis, (2012)

Online Resources:
Blackboard

Course Objectives:
A. Discuss anatomy, physiology and pathology of each procedure.
B. Analyze the diagnostic and surgical interventions related to each procedure.
C. Demonstrate the selection of supplies, equipment and instrumentation for each procedure.
D. Identify incisions used for each procedure.
E. Demonstrate the steps for each procedure.
F. Discuss the post-operative complications of each procedure.
G. Discuss preoperative prep routines specific for each procedure.
H. Identify appropriate patient positioning and draping procedures for each surgical intervention.
I. Discuss the appropriate post-operative procedure for each surgical intervention.
J. Identify special considerations and complications for each procedure.
K. Describe the robotic terms as related to surgery.
L. Describe the surgical applications of robotics.
M. Identify the basic components of equipment in robotic surgery.
N. Describe the movements of the robotic system manipulators.
O. Apply the principles of robotics to patient safety.
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 lab practice 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

General Surgery Chapter Objective:
- Discuss anatomy, physiology and pathology of each core General procedure.
- Analyze the diagnostic and surgical interventions related to each core General procedure.
- Demonstrate the selection of supplies, equipment, and instrumentation for each core General procedure.
- Identify incisions used for each core General procedure.
- Demonstrate the steps for each core General procedure.
- Discuss the post-operative complications of each core General procedure.

General Surgery Content Outline:
- Learn Key terms for Abdominal Wall, Gastrointestinal, Biliary system, Breast, and Thyroid surgeries.
- Define anatomy related to Abdominal Wall, Gastrointestinal, Biliary system, Breast, and Thyroid surgeries.
- Pathophysiology for Abdominal Wall, Gastrointestinal, Biliary system, Breast, and Thyroid surgeries.
- Diagnostic procedures for Abdominal Wall, Gastrointestinal, Biliary system, Breast, and Thyroid surgeries.
- Instrumentation for Abdominal Wall, Gastrointestinal, Biliary system, Breast, and Thyroid surgeries.
- Common sutures used for Abdominal Wall, Gastrointestinal, Biliary system, Breast, and Thyroid surgeries.
Special Equipment or supplies for Abdominal Wall, Gastrointestinal, Biliary system, Breast, and Thyroid surgeries.

Postoperative complications for Abdominal Wall, Gastrointestinal, Biliary system, Breast, and Thyroid surgeries.

Drop Technique or isolation technique for contaminated procedures

Considerations for anesthesia

Prepping and draping techniques

Positioning

Common medications used

Surgical Procedures discussed include but not limited to:

- Appendectomy – open and laparoscopic
- Cholecystectomy – open and laparoscopic, with cholangiogram
- Intestinal Resections – open, laparoscopic, robotic, with or without colostomy. Low Anterior Resections. Abdominal Perineal Resections.
- Herniorrphy – open and laparoscopic; incisional, inguinal, umbilical, hiatal. With Mesh components. Direct vs. Indirect hernias.
- Rectal/Anal surgery – Hemorrhoidectomy, fistula, fissure, pilonidal cysts, condyloma
- Splenectomy – Open and laparoscopic, Robotic
- Panreatectomy, Whipple, laparoscopic distal resections
- Liver resections, transplants, biopsies
- Bariatric surgery – lap band, Roux en Y, open and laparoscopic
- Gastrectomy – partial, total
- Esophagectomy, excision esophageal diverticulum, esophagoscopy
- Breast surgery – Biopsies, lumpectomy, mastectomies with or without reconstruction, sentinel lymphnode biopsy
- Thyroidectomy/parathyroidectomy

Pediatric Considerations and procedures:

- Pyloromyotomy
- Gastrochisis/Omphalocele
- Intussusception reduction
- Transesophageal fistula reduction
- Imperforate Anus/Duhamel Pull Through

OB/Gyn Surgery Chapter Objectives:

- Discuss anatomy, physiology and pathology of each core OB/Gyn procedure.
- Analyze the diagnostic and surgical interventions related to each core OB/Gyn procedure.
- Demonstrate the selection of supplies, equipment, and instrumentation for each core OB/Gyn procedure.
- Identify incisions used for each core OB/Gyn procedure.
- Demonstrate the steps for each core OB/Gyn procedure.
- Discuss the post-operative complications of each core OB/Gyn procedure.

OB/Gyn Content Outline:

- Learn Key terms for obstetrics and gynecological surgeries
- Purposes of OB/Gyn surgery
- Common gynecological problems
- Prepping and draping techniques
- Positioning
- Common medications used
- Common sutures used
- Special equipment and supplies
Diagnostic Procedures - Included but not limited to:
  • Pap smear
  • Pelvic exam with or without anesthesia
  • Hysterosalpingography
  • Rubin’s test
  • Schiller’s test
  • Hysteroscopy
  • D and C

Cervical Procedures:
  • Cervical biopsies
  • D&C with or without suction
  • Cervical Cerclage
  • Polypectomy
  • LEEP procedure/Conization

Uterine, Fallopian Tubes, Ovarian Procedures:
  • Endometrial Ablation
  • Total Hysterectomies with or without Salpingo-oopherectomy – Open, laparoscopic, vaginal, robotic
  • Myomectomy
  • Oopherectomy
  • Salpingectomy
  • Ectopic Pregnancy
  • Tuboplasty
  • Tubal ligation

Vaginal/Vulvar procedures:
  • Labioplasty
  • Vulvectomy
  • Perineal laceration/Episotomy
  • Ablation condyloma
  • Marsupialization of Bartholin’s gland

Pelvic Procedures:
  • Anterior/Posterior Repair
  • Operative Laparoscopy
  • Total Pelvic Exenteration
  • Wertheim Procedure (Radical hysterectomy)
  • Fistulas

Obstetrics:
  • Cesarean Section
  • Vaginal delivery
Genitourinary(GU) Chapter Objectives:

- Discuss anatomy, physiology and pathology of each core Genitourinary procedure.
- Analyze the diagnostic and surgical interventions related to each core GU procedure.
- Demonstrate the selection of supplies, equipment, and instrumentation for each core GU procedure.
- Identify incisions used for each core GU procedure.
- Demonstrate the steps for each core GU procedure.
- Discuss the post-operative complications of each core GU procedure.

Genitourinary(GU) Content Outline:

- Learn Key terms for Genitourinary surgeries
- Purposes of Genitourinary surgery
- Lab/Urinalysis
- Prepping and draping techniques
- Positioning
- Common medications used
- Common sutures used
- Special equipment and supplies
- Instrumentation
- Understand the use of cysto rooms and equipment

Procedures discussed but not limited to:

**Kidneys:**

- Nephrectomy – open, laparoscopic, robotic. Partial or hemi nephrectomy
- Nephroureterectomy
- Kidney Transplant
- Adrenalectomy
- Wilm's tumor
- Nephrectomy, Percutaneous nephrolithotripsy
- ESWL

**Ureteral procedures – open and endoscopic:**

- Ureteroscopy
- Ureterolithotomy
- Ureterectomy
- Ureteral reimplant
- Pyeloplasty

**Bladder/urethral:**

- Cystoscopy, TURBT
- Radical cystectomy with urinary diversion
- Suspension/Sling
- Suprapubic tube insertion
- Urethral meatotomy/dilation
- Artificial urethral sphincter implant
- Biopsies – endoscopic
- Urethrotomy

**Prostate:**

- TURP – electrocautery or laser
- Prostatectomy – suprapubic, radical retropubic; open, laparoscopic, or robotic
• Seed implants – radiation

Penile:
• Circumcision – adult and pediatric
• Hypospadias, epispadias
• Chordee repair
• Penile implant insertion
• Penectomy

Scrotal/Testicular:
• Hydrocelectomy
• Varicocelectomy
• Vasectomy
• Vasovasostomy
• Orchietomy
• Insertion testicular prosthesis
• Orchiopexy

ENT
Chapter Objectives:
• Define the common terminology used in surgery of the ear, nose, and throat
• Identify the key anatomical structures of the ear, nose, and throat
• Describe common procedures of the ear, nose, and throat
• Discuss equipment used in ENT procedures
• Identify surgical instruments used in ENT procedures
• Match pathology for ENT surgery to their correct terminology
• Discuss relevant draping and positioning of ENT patients

ENT
Content Outline:
• Surgical Anatomy of the ear, nose and throat.
• Pathology of the ear, nose and throat
• Specialized instrumentation for ear, nose, and throat surgery
• Equipment and supplies used for ear, nose, and throat surgery
• Common suture used for ear, nose, and throat surgery
• Considerations for prepping the patient for ear, nose, and throat surgery
• Considerations for positioning for ear, nose, and throat surgery
• Considerations for draping for ear, nose, and throat surgery
• Common medications used in ear, nose, and throat surgery
• Post-operative complications considered after ear, nose, & throat surgery

Surgical procedures to be discussed include but not limited to:

Ear:
• Diagnostic interventions: tuning fork, tympanogram, electronystagmogram
• Audiometry, clinical examination
• Myringotomy
• Tympanoplasty
• Stapedectomy
• Mastoidectomy
• Cochlear implant
• Removal of foreign bodies
**Nose:**
- Choanal atresia
- Endoscopic sinus surgery
- Nasal antrostomy
- Nasal polypectomy
- Septoplasty/Submucosal resection
- Turbinectomy
- Sphenoidectomy/Ethmoidectomy

**Throat and Neck:**
- Tonsillectomy
- Adenoidectomy
- Tracheotomy/Tracheostomy
- Laryngectomy
- Parotidectomy
- Radical neck dissection
- Mandibulectomy
- Uvulopalatopharyngoplasty
- Temporomandibular joint arthroscopy
- Glossectomy
- Laryngoscopy/microlaryngoscopy

**Orthopaedic**

**Chapter Objectives:**
- Identify major skeletal structures, including bones and joints
- Identify common fracture types
- Describe specific patient positions used in orthopaedic surgery
- Discuss the principles of open and closed fixation
- Describe techniques used in arthroscopic surgery
- Identify the surgical goals of common orthopaedic procedures
- Identify osteopathologic terms
- Identify orthopaedic surgical instruments
- Match orthopaedic procedures to correct descriptions
- Identify orthopaedic surgical supplies

**Orthopaedic**

**Content Outline:**
- Anatomy of skeleton, bone tissue, bone membranes, bone structure and shape.
- Extremity movements and terms
- Joints – classification, material, movements
- Bone landmarks and healing
- Connective tissues – tendons, ligaments, muscle
- Pathology and purpose of orthopaedic surgery
- Common supplies and equipment
- Common sutures used in orthopaedic surgery
- Instrumentation
- Common medications used in orthopaedic surgery
- Methymethacrylate – bone cement
- Surgical implants and materials
- Prepping considerations
- Positioning and draping considerations
- Classification of fractures
Surgeries to be discussed include but not limited to:

**Shoulder:**
- Arthroscopy
- Acromioplasty – open or arthroscopic
- Bankart/putti platt – open or arthroscopic
- Total Arthroplasty hip

**Upper Extremity:**
- ORIF – radius, humerus, olecranon, wrist, fingers
- Arthroscopy – olecranon, wrist
- Carpal tunnel release
- Metacarpophalangeal joint arthroplasty
- External fixator placement
- Deputryn’s Contracture

**Hip:**
- Arthroscopy
- Total Arthroplasty
- Pinning
- ORIF Pelvis

**Lower Extremity:**
- ORIF femur fracture – rodding, nailing
- Knee arthroscopy - diagnostic and operative
- ACL repair
- Total Arthroplasty knee
- Amputation – above and below knee
- Ankle arthroscopy
- ORIF Tibial fracture
- Achilles tendon repair
- Triple arthrodesis
- Bunionectomy
- Hammer toe correction

**Pediatric surgery:**
- Congenital hip repairs
- Talipes Varus repairs
- Scoliosis repair