



General Surgery

# Curriculum Outline


2024 - 2025




# Introduction

The **SCORE General Surgery Curriculum Outline** covers a list of topics in a five-year general surgery residency program.

Topics are listed for all six competencies of the Accreditation Council for Graduate Medical Education (ACGME): patient care; medical knowledge; professionalism; interpersonal and communication skills; practice-based learning and improvement; and systems-based practice. Patient care topics cover organ system-based categories, with each category separated into Diseases/Conditions and Operations/Procedures. Topics within these two areas are designated as core or advanced.

 **CORE** modules are diseases and procedures encountered in general surgery for which a graduate of training will possess significant knowledge and be able to provide comprehensive care, including procedural competency.

 **ADVANCED** modules are diseases and procedures that are not consistently part of general surgery practice for which a graduate of training should have sufficient knowledge to make a diagnosis and provide initial management. In some instances, graduates will have sufficient knowledge and experience to provide comprehensive care.

This outline is annually updated and reflects feedback from SCORE member organizations and specialty surgical societies. As the curriculum has evolved, many topics have been consolidated to describe required knowledge more accurately.

The **Surgical Council on Resident Education (SCORE®)** is a nonprofit organization formed in 2004 by the principal organizations involved in American surgical education. SCORE's mission is to improve the education of trainees in general surgery and related specialties through the development and maintenance of a national curriculum. The SCORE Portal was created to provide high-quality educational content, in support of the SCORE Curriculum Outline, to trainees and their programs.

The **SCORE Portal®** provides residents and training programs with high-quality educational materials and a structured program for self-learning. SCORE focuses on all areas of general surgery and related specialties as well as fellowship-level content.

# Patient Care

## General Abdomen

### Diseases/Conditions



Abdominal Pain  
Rectus Sheath Hematoma



Desmoids and Fibromatoses  
Peritoneal Neoplasms

### Operations/Procedures



Abdominal Exploration  
Peritoneal Dialysis Catheter Insertion

## Hernia

### Diseases/Conditions



Inguinal and Femoral Hernias  
Miscellaneous Hernias  
Umbilical and Epigastric Hernias  
Ventral Hernia

### Operations/Procedures



Diaphragmatic Hernia Repair  
Inguinal and Femoral Hernia Repair  
Miscellaneous Hernia Repair  
Ventral Hernia Repair

## Biliary

### Diseases/Conditions

 CORE

Benign Biliary Obstruction  
Choledochal Cyst  
Functional Biliary Disorders  
Iatrogenic Bile Duct Injury  
Primary Biliary Neoplasms  
Symptomatic Gallstones and Cholecystitis

 ADVANCED

Gallbladder Neoplasms  
Primary Sclerosing Cholangitis

### Operations/Procedures

 CORE

Cholecystectomy and Cholangiography  
Cholecystostomy  
Common Bile Duct Exploration and Choledochoscopy

 ADVANCED

Choledochoenteric Anastomosis  
Extended Cholecystectomy for Gallbladder Cancer  
Iatrogenic Bile Duct Injury Repair  
Procedures for Bile Duct Cancer  
Procedures for Bile Duct Neoplasm  
Ultrasound of the Biliary Tree

## Liver

### Diseases/Conditions



Cirrhosis and Portal Hypertension  
Hepatic Abscess  
Metastatic Hepatic Neoplasms  
Primary Hepatic Neoplasms

### Operations/Procedures



Hepatic Abscess Drainage  
Liver Biopsy



Hepatic Resection  
Intraoperative Hepatic Ultrasound

## Pancreas

### Diseases/Conditions



Acute Pancreatitis  
Endocrine Pancreatic Neoplasms  
Exocrine Pancreatic Neoplasms



Chronic Pancreatitis  
Pancreatic Cystic Neoplasms  
Pancreas Divisum

### Operations/Procedures



Distal Pancreatectomy



Ampullary Tumors  
Intraoperative Pancreatic Ultrasound  
Pancreaticoduodenectomy  
Total Pancreatectomy

## Spleen

### Diseases/Conditions



Hematologic Diseases of the Spleen  
Splenic Abscess, Cysts, and Neoplasms

### Operations/Procedures



Splenectomy

## Esophagus

### Diseases/Conditions



Esophageal Motility Disorders  
Esophageal Neoplasms  
Gastroesophageal Reflux and Barrett Esophagus  
Hiatal Hernias



Esophageal Caustic Ingestion and Foreign Bodies

### Operations/Procedures




Antireflux Procedures





Cricopharyngeal Myotomy and Resection of Zenker Diverticulum  
Esophagectomy  
Heller Esophagomyotomy  
Paraesophageal Hernia Repair

## Stomach

### Diseases/Conditions



- Functional Gastric Disorders
- Gastric Adenocarcinoma
- Gastric Foreign Bodies
-  CORE GISTs and Miscellaneous Digestive Neoplasms
- Morbid Obesity
- Peptic Ulcer Disease
- Stress Gastritis
- Upper Gastrointestinal Bleeding

### Operations/Procedures

-  CORE Access Procedures for Nutritional Support
- Gastrectomy
- Gastroduodenal Perforation Repair
- Vagotomy and Drainage
-  ADVANCED Procedures for Morbid Obesity
- Revisional Procedures after Gastrectomy

## Small Intestine

### Diseases/Conditions

- Acute Mesenteric Ischemia
- Enterocutaneous Fistula
- Meckel Diverticulum
-  CORE Paralytic Ileus
- Radiation Enteritis
- Small Intestinal Neoplasms
- Small Intestinal Obstruction
-  ADVANCED Enteric Infections and Blind Loop Syndrome
- Short Bowel Syndrome

## Operations/Procedures



Adhesiolysis  
Ileostomy and Ileostomy Closure  
Procedures for Crohn Disease  
Small Intestinal Resection

## Large Intestine

### Diseases/Conditions



Appendicitis  
*C. difficile* Colitis  
Colon Cancer  
Colonic Polyps  
Colonic Volvulus and Obstruction  
Diverticulitis  
Ischemic Colitis  
Lower Gastrointestinal Bleeding



Colonic Polyposis Syndromes  
Functional Intestinal Disorders

### Operations/Procedures



Appendectomy  
Colostomy and Colostomy Closure  
Partial Colectomy  
Procedures for Ulcerative Colitis  
Total and Subtotal Colectomy



## Anorectal

### Diseases/Conditions



Anal Cancer  
Anal Dysplasia and STDs  
Anal Fissure  
Anorectal Abscess and Fistulae  
Hemorrhoids  
Rectal Cancer



Fecal Incontinence  
Rectal Prolapse

### Operations/Procedures



Anal Sphincterotomy  
Anorectal Abscess Drainage  
Anorectal Fistula Repair  
Perianal Condylomas Excision  
Procedures for Hemorrhoids



Anal Cancer Excision  
Abdominoperineal Resection and Pelvic Exenteration  
Rectal Prolapse Repair  
Transanal Resection

## Endoscopy

### Operations/Procedures



Bronchoscopy and Bronchoalveolar Lavage  
Esophagogastroduodenoscopy  
Lower GI Endoscopy

## Breast

### Diseases/Conditions

Atypical Hyperplasia, Flat Epithelial Atypia, and Lobular Carcinoma in Situ of the Breast  
Benign Inflammatory Disease of the Breast  
Breast Disease During Pregnancy and Lactation  
Breast Invasive Carcinoma  
Ductal Carcinoma in Situ  
Fat Necrosis, Fibrocystic Changes, and Radial Scar of the Breast  
Fibroadenoma and Phyllodes Tumors of the Breast  
Hereditary Breast Cancer  
Inflammatory Breast Cancer  
Initial Management of a Breast Mass  
Male Gynecomastia and Breast Cancer  
Management of the Axilla in Breast Cancer  
Nipple Discharge and Intraductal Papilloma  
Paget Disease of the Nipple  
Postmastectomy Reconstruction Options  
Radiographic Abnormalities of the Breast



### Operations/Procedures

Axillary Procedures in Breast Cancer  
Breast Duct Excision  
Excisional Breast Biopsy and Partial Mastectomy  
Percutaneous Breast Biopsy and Cyst Aspiration  
Simple, Modified Radical, and Radical Mastectomy



## Endocrine

### Diseases/Conditions

Hypocortisolism and Cushing Syndrome/Disease

Hyperparathyroidism

Hyperthyroidism

Incidental Adrenal Mass



Initial Workup of a Thyroid Nodule

Pheochromocytoma

Postoperative Hypothyroidism

Primary Hyperaldosteronism

Thyroid Cancer

Thyroiditis

Adrenal Cancer



Multiple Endocrine Neoplasias

Parathyroid Cancer

### Operations/Procedures



Parathyroidectomy

Thyroidectomy



Adrenalectomy

Thyroid Ultrasound

## Skin and Soft Tissue

### Diseases/Conditions

Hidradenitis Suppurativa  
Melanoma and Nevi  
Nonmelanoma Skin Cancers  
Paronychia and Felon  
Pilonidal Disease  
Pressure Ulcer  
Sarcoma  
Soft Tissue Infections  
Soft Tissue Masses Evaluation



Lymphedema and Lymphangitis

### Operations/Procedures

Melanoma Excision  
Procedures for Pilonidal Disease  
Procedures for Soft Tissue Infections  
Sentinel Lymph Node Biopsy for Melanoma  
Surgical Management of Skin/Soft Tissue Lesion



Ilioinguinal-Femoral Lymphadenectomy  
Sarcoma Resection

## Surgical Critical Care

### Diseases/Conditions

Abdominal Compartment Syndrome  
Anaphylaxis  
Brain Death  
Cardiac Arrest  
Cardiac Failure and Cardiogenic Shock  
Common Cardiac Arrhythmias  
Derangements of Electrolytes and Acid-Base Balance  
Endocrine Dysfunction  
Hepatic Failure and Hepatorenal Syndrome  
Hypovolemic Shock  
Neurogenic Shock  
Neurologic Dysfunction  
Pain, Agitation, and Delirium  
Renal Failure  
Respiratory Failure: ARDS, Pulmonary Embolism, and Pneumonia  
Sepsis and Septic Shock

 CORE

 ADVANCED

Organ Donors and Selection Criteria

### Operations/Procedures

Airway Access: Intubation and Surgical Airways  
Ultrasound for Intravascular Access  
Vascular Access

 CORE

 ADVANCED

Cardiac Pacing

# Trauma

## Diseases/Conditions

Burns  
 Cardiac Injury  
 Chest Wall, Pleural, and Diaphragm Injuries  
 Colon and Rectal Injury  
 Duodenal and Pancreatic Injury  
 Esophageal Perforation and Injury  
 Frostbite and Hypothermia  
 Gastric and Small Intestinal Injury  
 Geriatric Trauma  
 Hepatic Injury  
 Inhalation Injury  
 Initial Assessment and Management of Trauma  
 Initial Assessment and Management of Neck Trauma  
 Lower Urinary Tract Injuries  
 Pediatric Trauma  
 Pelvic Fractures and Retroperitoneal Hematoma  
 Smoke Inhalation Injury and Carbon Monoxide Poisoning  
 Splenic Injury  
 Tracheobronchial and Lung Injury  
 Trauma in Pregnancy  
 Traumatic Brain Injury  
 Upper Aerodigestive Tract Injury  
 Upper Urinary Tract Injuries  
 Vascular Abdominal Injury  
 Vascular Extremity Injury  
 Vascular Neck Injury  
 Vascular Thoracic Injury

Bite and Envenomation Injuries  
 Brachial Plexus Injury  
 Extremity Injuries  
 Spinal Cord Injury

 CORE

 ADVANCED

## Operations/Procedures

Abdominal Exploration for Trauma  
Escharotomy  
Fasciotomy  
Focused Assessment with Sonography for Trauma (FAST)  
Gastrointestinal Tract Injury Repair  
Hepatic Injury Packing, Repair, and Resection  
Neck Injuries Management  
Splenectomy and Splenorrhaphy  
Procedures for Urinary Tract Injuries  
Procedures for Vascular Injuries  
Wounds Management

 CORE

Cardiac Injury Repair  
Hand Tendon Repairs  
Procedures for Esophageal Injury  
Procedures for Thermal Injuries  
Skin Grafting for Thermal Injuries

 ADVANCED

## Arterial Disease

### Diseases/Conditions

Acute Thrombosis and Ischemia  
Carotid Artery Disease  
Compartment Syndromes  
Diabetic Foot Infections  
Peripheral Arterial Emboli  
Peripheral Vascular Occlusive Disease

 CORE

Acute Aortic Dissection  
Aortic Aneurysms  
Arterial Peripheral Aneurysms  
Arterial Visceral Aneurysms  
Nonatherosclerotic Occlusive Diseases  
Renal Artery Disease  
Thoracic Outlet Syndrome  
Vascular Graft Infections

 ADVANCED

## Operations/Procedures



Arterial Embolectomy and Thrombectomy  
Lower Extremity Amputations

Abdominal and Aortoiliac Aneurysm Repair  
Aortoiliac Reconstruction for Occlusive Disease  
Endovascular Intervention Principles  
Extra-anatomic Bypass



Graft-enteric Fistula Management  
Lower Extremity Bypass  
Peripheral Aneurysms Repair  
Procedures for Carotid Artery Stenosis  
Procedures for Mesenteric Occlusive Disease  
Superior Mesenteric Artery (SMA) Embolectomy and Thrombectomy  
Ultrasound in the Diagnosis and Management of Vascular Diseases

## Vascular Venous

### Diseases/Conditions



Evaluation of a Swollen Leg  
Thrombophlebitis  
Varicose Veins  
Venous Stasis and Chronic Venous Insufficiency  
Venous Thromboembolism

### Operations/Procedures



Vena Cava Filter Insertion  
Venous Insufficiency and Related Procedures

## Vascular Access

### Diseases/Conditions



Vascular Access for Dialysis



## Operations/Procedures



Vascular Exposure Principles  
Venous Access Devices Insertion



Arteriovenous Graft and Fistula

## Transplantation

### Diseases/Conditions



Organ Preservation

### Operations/Procedures



Donor Hepatectomy  
Donor Nephrectomy  
En Bloc Abdominal Organ Retrieval  
Liver Transplantation  
Pancreas Transplantation  
Renal Transplantation

## Thoracic Surgery

### Diseases/Conditions



Chylothorax  
Pleural Effusion and Empyema  
Pneumothorax and Pleurodesis



Malignant Lung Tumors  
Mediastinal Tumors and Cysts  
Mediastinitis  
Superior Vena Cava Syndrome

## Operations/Procedures



Thoracotomy and Thoracoscopy  
Tube Thoracostomy and Thoracentesis



Pulmonary Resections

## Pediatric Surgery

### Diseases/Conditions





Abdominal Mass  
Acute Abdominal Pain  
Appendicitis  
Hypertrophic Pyloric Stenosis  
Inguinal Hernia  
Intussusception  
Lower Gastrointestinal Bleeding  
Malrotation  
Meckel Diverticulum  
Umbilical Hernia



Aerodigestive Tract Foreign Bodies  
Anorectal Malformations  
Biliary Atresia  
Choledochal Cysts  
Congenital Aganglionosis (Hirschsprung Disease)  
Congenital Diaphragmatic Hernia  
Cryptorchidism  
Esophageal Atresia and Tracheoesophageal Fistula  
Gastroschisis and Omphalocele  
Necrotizing Enterocolitis  
Neonatal Small Bowel Obstruction

## Operations/Procedures

-  CORE
  - Inguinal Hernia Repair
  - Intussusception Operation
  - Malrotation Operation
  - Meckel Diverticulum Excision
  - Pyloromyotomy
  - Umbilical Hernia Repair
-  ADVANCED
  - Anorectal Malformations Operation
  - Branchial Cleft Anomaly Excision
  - Chest Wall Deformity Repair
  - Congenital Diaphragmatic Hernia Repair
  - Diaphragmatic Hernia Repair
  - Esophageal Atresia and Tracheoesophageal Fistula Repair
  - Hirschsprung Disease Operation
  - Intestinal Atresia and Stenosis Repair
  - Meconium Ileus Operation
  - Necrotizing Enterocolitis Operation
  - Orchiopexy
  - Thyroglossal Duct Cyst Excision



## Plastic Surgery

### Operations/Procedures

-  CORE
  - Complex Wound Closure
  - Skin Grafting

## Genitourinary

### Diseases/Conditions

-  CORE
  - Acute Urinary Retention
  - Hydrocele
  - Scrotal Pain and Masses
-  ADVANCED
  - Genitourinary Neoplasms

## Operations/Procedures

 CORE Cystostomy

 ADVANCED Nephrectomy

## Obstetrics and Gynecology


### Diseases/Conditions

 CORE Ectopic Pregnancy  
Pelvic Inflammatory Disease

 ADVANCED Gynecologic Neoplasms

### Operations/Procedures

 CORE Surgical Considerations of the Pregnant Patient

 ADVANCED Cesarean Section  
Hysterectomy and Salpingo-oophorectomy

## Head and Neck

### Diseases/Conditions

 CORE Neck Mass Evaluation  
Upper Airway Obstruction

 ADVANCED Oral Cavity/Pharynx, Laryngeal, and Salivary Gland Cancer

### Operations/Procedures

 CORE Lymph Node Biopsy

 ADVANCED Modified Neck Dissection  
Parotidectomy

# Medical Knowledge

## Anesthesia

- Acute Pain Management
- Agents and Techniques for Conscious Sedation
- Agents and Techniques for General Anesthesia
- Agents and Techniques for Regional and Local Anesthesia
- Best Practices in Prescribing Opioids
- Choice of Anesthesia
- Chronic Pain Management
- Digital and Peripheral Nerve Blocks
- Intraoperative Monitoring and Common Intraoperative Problems

## Biostatistics and Evaluation of Evidence

- Bias in Research Design and Studies
- Study Design
- Tests of Significance and Measures of Long-term Survival

## Fluids, Electrolytes, and Acid-Base Balance

- Hypocalcemia and Hypercalcemia
- Hypokalemia and Hyperkalemia
- Hyponatremia and Hypernatremia
- Magnesium and Phosphorus Disorders

## Geriatric Surgery and End-of-Life Care

- Advance Directives, DNR Orders, and Power of Attorney
- Frailty
- Goal Setting with Elderly Patients and Families
- Palliative and Hospice Care
- Perioperative Management of Geriatric Patients

## **Immunology**

- Components of the Immune System
- Immune Response to Injury and Infection
- Surgery and Surgical Conditions in Immunocompromised Hosts
- Transplant Immunology

## **Infection and Antimicrobial Therapy**

- Antimicrobial Agents in Surgical Infections
- Antimicrobial Stewardship
- Diagnostic Approach to Infection
- Hospital-Acquired Infections
- Intra-abdominal Infections
- Opportunistic Infections
- Preoperative Assessment and Management of Coexisting Infection
- Prevention and Treatment of Surgical Site Infection

## **Minimally Invasive Surgery - Principles**

- Minimally Invasive Surgery (MIS) Principles
- Robotic Surgery Principles
- Safe Use of Surgical Energy

## **Nutrition and Metabolism**

- Nutritional Assessment
- Nutritional Requirements
- Nutritional Support

## **Oncology and Tumor Biology**

- Adjunctive Therapy for Cancer
- Tumor Immunology

## Preoperative Evaluation and Perioperative Care

- Common Postoperative Problems
- Evaluation of Surgical Risk
- Management of Perioperative Risk
- Mechanical Ventilation
- Postoperative Pain Management
- Prophylaxis of Venous Thromboembolism

## Transfusion and Disorders of Coagulation

- Evaluation of Ongoing Bleeding and Laboratory Assessment of Coagulation
- Inherited and Acquired Disorders of Coagulation
- Normal Mechanisms of Hemostasis and Coagulation
- Transfusion Indications, Risks, Type and Crossmatch, and Component Therapy

## Wound Healing

- Wound Closure and Postoperative Care
- Wound Healing

# Professionalism

## Ethical Issues in Clinical Surgery

- Advance Directives
- Approaching Ethical Issues in Surgery
- Decision-Making Capacity
- Do Not Resuscitate
- Ethics in Global Surgery and Volunteerism
- Futility
- Informed Consent
- Medical Decisions for Pediatric Patients
- Substituted Judgment: The Role and Care of Surrogates
- Withdrawing and Withholding Life-Sustaining Treatments

## **Diversity and Inclusion**

Allyship and Bystander Intervention  
Diversity in the US Surgical Workforce  
Principles of Disparities in Surgical Care  
Surgical Care of LGBTQIA+ Patients

## **Managing a Career in Surgery**

Surgical Ergonomics

# **Interpersonal and Communication Skills**

## **Non-Technical Skills for Surgeons (NOTSS)**

Cognitive Skills (Situation Awareness and Decision Making)  
Social Skills (Communication, Teamwork and Leadership)  
The Provider Awareness and Cultural Dexterity Toolkit for Surgeons (PACTS)

## **Surgical Professionalism and Interpersonal Communication Education (SPICE)**

Advanced Communication Skills and the Challenges of Informed Consent  
Communicating Medical Errors  
Working Through Language Barriers and Differing Customs  
Delivering Grim Prognoses and Other Bad News  
Giving and Getting Feedback  
Career Management (Making Important Professional and Personal Decisions)  
Safe Handoff of Patient Care Duties  
Signs of Stress, Depression, and Suicide in Surgical Practice  
Working with Professionals (Team Communication and Respect)



# Systems-based Practice

## Systems-based Practice

- Advocating for Quality Patient Care
- Coordinating Patient Care
- Cost Awareness and Risk-Benefit Analysis
- Identifying Systems Errors – Root Cause Analysis
- Working Effectively in Various Healthcare Delivery Settings and Systems
- Working in Interprofessional Teams

# Practice-based Learning and Improvement

## Quality Improvement

- Inspiring a Healthy Culture for Patient Care
- Local Engagement in Quality Improvement
- Problem-Based Quality Improvement
- Understanding the Data and Methods to Evaluate Performance