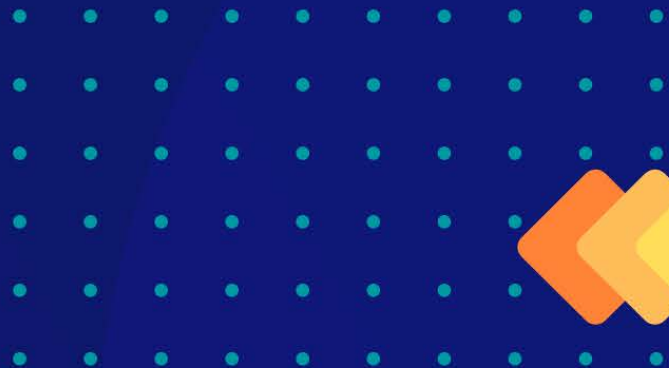




General Surgery

Curriculum Outline

2023 - 2024



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



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



Gallbladder Neoplasms
Primary Sclerosing Cholangitis

Operations/Procedures



Cholecystectomy and Cholangiography
Cholecystostomy
Common Bile Duct Exploration and Choledochoscopy



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



CORE

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

Operations/Procedures



CORE

Hepatic Abscess Drainage
Liver Biopsy



ADVANCED

Hepatic Resection
Intraoperative Hepatic Ultrasound

Pancreas

Diseases/Conditions



CORE

Acute Pancreatitis
Endocrine Pancreatic Neoplasms
Exocrine Pancreatic Neoplasms



ADVANCED

Chronic Pancreatitis
Pancreatic Cystic Neoplasms
Pancreas Divisum

Operations/Procedures



CORE

Distal Pancreatectomy



ADVANCED

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

-  CORE Acute Mesenteric Ischemia
- Enterocutaneous Fistula
- Meckel Diverticulum
- 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