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CURRICULUM OUTLINE
FOR GENERAL SURGERY

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SCORE Curriculum Outline for General Surgery

The SCORE® Curriculum Outline for General Surgery is a list of topics to be covered in a five-year general surgery residency program. The outline is updated annually to remain contemporary and reflect feedback from SCORE member organizations and specialty surgical societies.

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. The patient care topics cover 27 organ system-based categories, with each category separated into Diseases/Conditions and Operations/Procedures. Topics within these two areas are then designated as Core or Advanced.

Changes from the previous edition are indicated in the Excel version of this outline, available at www.surgicalcore.org. Note that topics listed in this booklet may not directly match those currently on the SCORE Portal — this outline is forward-looking, reflecting the latest updates.

The Surgical Council on Resident Education (SCORE) is a nonprofit consortium formed in 2006 by the principal organizations involved in U.S. surgical education. SCORE’s mission is to improve the education of general surgery residents through the development of a national curriculum for general surgery residency training. The members of SCORE are:

- American Board of Surgery
- American College of Surgeons
- American Surgical Association
- Association of Program Directors in Surgery
- Association for Surgical Education
- Review Committee for Surgery of the ACGME
- Society of American Gastrointestinal and Endoscopic Surgeons
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ABOUT THIS DOCUMENT

SCORE was founded in 2006 by the leading organizations involved in U.S. surgical education to answer the question, “What do we expect our residents to know and be able to do proficiently by the end of their training?” In 2004, the American Board of Surgery began to develop a curriculum by listing the specific patient care competencies expected of graduating general surgery residents. This effort was expanded into this document, with significant input from the Association of Program Directors in Surgery, as well as many specialty surgical societies.

This outline should not be viewed as static. It will continue to be reviewed annually to introduce new topics as needed, delete obsolete topics, or change the depth and breadth of existing topics. As the outline has evolved, many topics have also been consolidated to more accurately describe the required knowledge.
THE SCORE PORTAL

The SCORE Portal (www.surgicalcore.org) has been created to provide educational content and assessment in support of the curriculum to general surgery residency programs. Learning “modules” are available on the portal for nearly all of the topics listed in this booklet, with modules for the few remaining topics to be posted in the near future. Changes from the previous edition are indicated in the Excel version of this outline, available at www.surgicalcore.org.

Modules on the portal contain learning objectives, discussion questions, and a variety of resource materials, including textbook chapters, videos and images. Multiple-choice questions are also available to assess resident knowledge. The portal also offers This Week in SCORE® (TWIS), a two-year schedule of topics to assist programs in covering the portal’s content. Each week a new topic is featured, along with related modules and a 10-question quiz. To learn more about TWIS and the SCORE Portal, please visit www.surgicalcore.org.
PATIENT CARE CLASSIFICATION SYSTEM

The patient care curriculum topics are organized into 27 organ-based categories. Within each category, the topics are further separated into Diseases/Conditions and Operations/Procedures. The topics are then stratified into two levels using the same classifications:

CORE – 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 – 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.
1. Abdomen - General

Diseases/Conditions

Core

- Abdominal Pain – Acute and Chronic
- Rectus Sheath Hematoma

Advanced

- Peritoneal Neoplasms

Operations/Procedures

Core

- Abdominal Exploration
- Peritoneal Dialysis Catheter Insertion
2. Abdomen – Hernia

Diseases/Conditions

Core

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

Operations/Procedures

Core

- Diaphragmatic Hernia – Repair
- Inguinal and Femoral Hernia – Repair
- Miscellaneous Hernias – Repair
- Ventral Hernia – Repair
3. Abdomen - Biliary

Diseases/Conditions

Core

- Benign Biliary Obstruction
- Bile Duct Injury – Iatrogenic
- Biliary Neoplasms
- Cholecystitis
- Choledochal Cyst

Advanced

- Functional Biliary Disorders
- Primary Sclerosing Cholangitis

Operations/Procedures

Core

- Cholecystectomy with or without Cholangiography
- Cholecystostomy
- Choledochoenteric Anastomosis
- Common Bile Duct Exploration and Choledochoscopy

Advanced

- Bile Duct Cancer – Operation
- Bile Duct Injury, Iatrogenic – Acute Repair
- Bile Duct Neoplasms – Operation
- Gallbladder Cancer – Operation
- Ultrasound of the Biliary Tree
4. Abdomen - Liver

Diseases/Conditions

Core

- Hepatic Abscess
- Hepatic Neoplasms – Metastatic
- Primary Hepatic Neoplasms – Benign and Malignant

Advanced

- Cirrhosis/Portal Hypertension (Ascites)

Operations/Procedures

Core

- Hepatic Abscess – Drainage
- Hepatic Biopsy

Advanced

- Hepatic Ultrasound – Intraoperative
- Segmentectomy/Lobectomy
5. Abdomen - Pancreas

Diseases/Conditions

Core

- Cystic Lesions of the Pancreas
- Pancreatic Neoplasms – Endocrine
- Pancreatic Neoplasms – Exocrine
- Pancreatitis – Acute/Pancreatic Necrosis/Abscess

Advanced

- Intraductal Papillary Mucinous Neoplasms
- Pancreas Divisum
- Pancreatitis – Chronic (Including Hereditary Pancreatitis)/Pancreatic Insufficiency

Operations/Procedures

Core

- Pancreatectomy – Distal
- Pancreatic Debridement
- Pancreatic Pseudocyst – Drainage

Advanced

- Ampullary Resection for Tumor
- Pancreatectomy – Total
- Pancreatic Ultrasound – Intraoperative
- Pancreaticoduodenectomy
- Pancreatitis, Chronic – Operative Management
6. Abdomen - Spleen

Diseases/Conditions

*Advanced*

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

Operations/Procedures

*Core*

- Splenectomy
7. Alimentary Tract – Esophagus

Diseases/Conditions

Core

- Esophageal Motility Disorders
- Esophageal Neoplasms – Benign and Malignant
- Esophageal Perforation
- Gastroesophageal Reflux/Barrett’s Esophagus
- Hiatal Hernias

Advanced

- Esophageal Caustic Ingestion and Foreign Bodies

Operations/Procedures

Core

- Antireflux Procedures

Advanced

- Cricopharyngeal Myotomy with Zenker’s Diverticulum – Excision
- Esophageal Perforation – Repair/Resection
- Esophagectomy/Esophagogastrectomy
- Esophagomyotomy (Heller)
- Paraesophageal Hernia – Repair
8. Alimentary Tract - Stomach

Diseases/Conditions

Core

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

Advanced

- Functional Disorders of the Stomach

Operations/Procedures

Core

- Gastrectomy – Partial/Total
- Gastroduodenal Perforation – Repair
- Gastrostomy
- Vagotomy and Drainage

Advanced

- Morbid Obesity – Operation
- Postgastrectomy Syndromes – Revisional Procedures
9. Alimentary Tract - Small Intestine

Diseases/Conditions

**Core**

- Crohn Disease – Surgical Management
- Enterocutaneous Fistula
- Meckel’s Diverticulum
- Mesenteric Ischemia – Acute (Arterial, Venous, and Nonocclusive)
- Paralytic Ileus
- Radiation Enteritis
- Small Intestinal Neoplasms
- Small Intestinal Obstruction

**Advanced**

- Enteric Infections/Blind Loop Syndrome
- Short Bowel Syndrome

Operations/Procedures

**Core**

- Adhesiolysis
- Ileostomy and Ileostomy Closure
- Small Intestinal Resection
10. Alimentary Tract – Large Intestine

Diseases/Conditions

Core

- Appendicitis
- *C. difficile* Colitis
- Colitis – Ischemic
- Colon Cancer
- Colonic Polyps
- Colonic Volvulus and Obstruction
- Diverticulitis
- Gastrointestinal Bleeding – Lower
- Ulcerative Colitis – Surgical Management

Advanced

- Functional Disorders of the Intestine
- Polyposis Syndromes

Operations/Procedures

Core

- Appendectomy
- Colectomy – Partial
- Colectomy – Total and Subtotal
- Colostomy and Colostomy Closure
11. Alimentary Tract – Anorectal

Diseases/Conditions

Core

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

Advanced

- Fecal Incontinence
- Rectal Prolapse

Operations/Procedures

Core

- Anal Sphincterotomy
- Anorectal Abscess – Drainage
- Anorectal Fistula – Repair
- Hemorrhoids – Management
- Perianal Condylomas – Excision

Advanced

- Anal Cancer – Excision
- Rectal Cancer – Abdominoperineal Resection and Pelvic Exenteration
- Rectal Cancer – Transanal Resection
- Rectal Prolapse – Repair
12. Endoscopy

Operations/Procedures

Core

- Bronchoscopy and Bronchoalveolar Lavage
- Esophagogastroduodenoscopy
- Lower GI Endoscopy
13. Breast

Diseases/Conditions

Core

- Atypical Hyperplasia and Lobular Carcinoma in Situ
- Benign Disease – Fat Necrosis, Fibrocystic Breast Changes, and Radial Scar
- Benign Inflammatory Disease – Mastitis, Abscess, and Mondor Disease
- Breast Cancer – Hereditary
- Breast Cancer – Inflammatory
- Breast Cancer – Invasive Carcinoma (Ductal, Lobular, All Variants)
- Breast Cancer – Paget’s Disease of the Nipple
- Breast Disease During Pregnancy and Lactation
- Breast Mass
- Ductal Carcinoma in Situ
- Fibroadenoma and Phyllodes Tumors
- Male Breast Disease – Gynecomastia and Breast Cancer
- Nipple Discharge and Intraductal Papilloma
- Radiographic Abnormalities

Advanced

- Postmastectomy Reconstruction Options

Operations/Procedures

Core

- Axillary Sentinel Lymph Node Biopsy and Lymphadenectomy
- Duct Excision
- Excisional Breast Biopsy and Partial Mastectomy
- Mastectomy – Simple, Modified Radical, and Radical
- Percutaneous Breast Biopsy and Cyst Aspiration
14. Endocrine

Diseases/Conditions

Core

○ Adrenal Mass – Incidental
○ Hyperaldosteronism – Primary
○ Hypercortisolism – Cushing Syndrome/Disease
○ Hyperparathyroidism
○ Hyperthyroidism
○ Hypothyroidism – Postoperative
○ Pheochromocytoma
○ Thyroid Cancer
○ Thyroid Nodule
○ Thyroiditis

Advanced

○ Adrenal Cancer
○ Multiple Endocrine Neoplasias
○ Parathyroid Cancer

Operations/Procedures

Core

○ Parathyroidectomy
○ Thyroidectomy – Partial or Total

Advanced

○ Adrenalectomy
○ Ultrasound of the Thyroid
15. Skin and Soft Tissue

Diseases/Conditions

Core

- Cellulitis
- Hidradenitis
- Melanoma and Nevi
- Necrotizing Soft Tissue Infections
- Nonmelanoma Skin Cancers
- Paronychia and Felon
- Pilonidal Cyst/Sinus
- Soft Tissue Masses – Evaluation

Advanced

- Desmoids/Fibromatoses
- Lymphedema/Lymphangitis
- Pressure Ulcer
- Soft Tissue Sarcomas

Operations/Procedures

Core

- Melanoma – Wide Excision
- Pilonidal Cystectomy
- Sentinel Lymph Node Biopsy for Melanoma
- Skin/Soft Tissue Lesions – Excisional and Incisional Biopsy
- Soft Tissue Infections – Incision, Drainage, Debridement

Advanced

- Ilioinguinal-Femoral Lymphadenectomy
- Soft Tissue Sarcoma – Resection
16. Surgical Critical Care

Diseases/Conditions

Core

- Abdominal Compartment Syndrome
- Anaphylaxis
- Acute Respiratory Distress Syndrome (ARDS)
- Brain Death
- Cardiac Arrest
- Cardiac Arrhythmias – Common
- Cardiac Failure and Cardiogenic Shock
- Derangements of Electrolytes and Acid-Base Balance
- Endocrine Dysfunction
- Hepatic Failure and Hepatorenal Syndrome
- Hypovolemic Shock
- Hypoxemic Syndromes (PE, Pneumonia)
- Neurogenic Shock
- Neurologic Dysfunction
- Pain, Agitation, and Delirium
- Renal Failure
- Respiratory Failure
- Sepsis and Septic Shock

Advanced

- Organ Donors and Selection Criteria

Operations/Procedures

Core

- Intubation and Difficult Airway
- Nutritional Support
- Ultrasound Use for Intravascular Access
- Vascular Access

Advanced

- Noninvasive and Invasive Cardiac Pacing
17. Trauma

Diseases/Conditions

Core

- Burns
- Chest Wall, Pleural and Diaphragm Injuries
- Cardiac Injury
- Colon and Rectal Injury
- Duodenal and Pancreatic Injury
- Esophageal Injury
- Frostbite and Hypothermia
- Gastric and Small Intestinal Injury
- Geriatric Trauma
- Hepatic Injury
- Initial Assessment and Management of Trauma
- Lower Urinary Tract Injuries
- Pediatric Trauma
- Pelvic Fractures and Retroperitoneal Hematoma
- Splenic Injury
- Tracheobronchial and Lung Injury
- Trauma in Pregnancy
- Upper Aerodigestive Tract Injury
- Upper Urinary Tract Injuries
- Vascular Injury – Abdomen
- Vascular Injury – Extremities
- Vascular Injury – Neck
- Vascular Injury – Thorax

Advanced

- Bite and Envenomation Injuries
- Brachial Plexus Injury
- Extremity Injuries
- Head Injury – Penetrating and Closed
- Smoke Inhalation Injury and Carbon Monoxide Poisoning
- Spine Fracture
- Traumatic Brain Injury
17. Trauma (cont.)

Operations/Procedures

*Core*

- Abdominal Exploration for Trauma
- Cardiac Injury – Repair
- Duodenal and Pancreatic Injury – Operations
- Esophageal Injury – Repair
- Fasciotomy
- Focused Assessment with Sonography for Trauma (FAST)
- Gastrointestinal Tract Injury – Repair
- Hepatic Injury – Packing and Repair/Resection
- Neck Injuries – Management
- Splenectomy/Splenorrhaphy
- Urinary Tract Injuries – Operations
- Vascular Injuries – Operations
- Wounds, Major – Debridge/Suture

*Advanced*

- Hand Tendon Repairs
- Thermal Injuries – Operations
18. Vascular – Arterial Disease

Diseases/Conditions

Core

○ Acute Thrombosis and Ischemia
○ Cerebrovascular Disease
○ Compartment Syndromes
○ Diabetic Foot Infections
○ Peripheral Arterial Emboli
○ Peripheral Vascular Occlusive Disease

Advanced

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

Operations/Procedures

Core

○ Amputations – Lower Extremity
○ Embolectomy/Thrombectomy – Arterial
○ Lower Extremity Bypass

Advanced

○ Abdominal and Aortoiliac Aneurysm – Repair
○ Aortoiliac Reconstruction for Occlusive Disease
○ Carotid Endarterectomy
○ Endovascular Intervention Principles
○ Extra-anatomic Bypass
○ Graft-enteric Fistula – Management
○ Mesenteric Occlusive Disease – Operation
○ Peripheral Aneurysms – Repair
○ Superior Mesenteric Artery Embolectomy/ Thrombectomy
○ Ultrasound in the Diagnosis and Management of Vascular Diseases
19. Vascular – Venous

Diseases/Conditions

Core

○ Evaluation of the Swollen Leg
○ Thrombophlebitis
○ Varicose Veins
○ Venous Stasis/Chronic Venous Insufficiency
○ Venous Thromboembolism

Operations/Procedures

Core

○ Vena Caval Filter – Insertion
○ Venous Insufficiency/Varicose Veins – Operation
20. Vascular – Access

Diseases/Conditions

Core

- Vascular Access for Dialysis

Operations/Procedures

Core

- Arteriovenous Graft/Fistula
- Vascular Exposure – Principles
- Venous Access Devices – Insertion
21. Transplantation

Diseases/Conditions

*Advanced*

○ Organ Preservation

Operations/Procedures

*Advanced*

○ En Bloc Abdominal Organ Retrieval
○ Live Donor Hepatectomy
○ Live Donor Nephrectomy
○ Liver Transplantation
○ Pancreas Transplantation
○ Renal Transplantation
22. Thoracic Surgery

Diseases/Conditions

Core

- Pleural Effusion/Empyema
- Pneumothorax and Pleurodesis

Advanced

- Chylothorax
- Mediastinal Tumors and Cysts
- Mediastinitis
- Malignant Tumors of the Lung: Primary and Metastatic
- Superior Vena Cava Syndrome

Operations/Procedures

Core

- Exploratory Thoracotomy – Open and Thoracoscopic
- Partial Pulmonary Resections – Open and Thoracoscopic
- Tube Thoracostomy and Thoracentesis
23. Pediatric Surgery

Diseases/Conditions

Core

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

Advanced

- Aerodigestive Tract Foreign Bodies
- Biliary Atresia
- Choledochal Cysts
- Congenital Aganglionosis (Hirschsprung Disease)
- Congenital Diaphragmatic Hernia
- Cryptorchidism
- Esophageal Atresia/Tracheoesophageal Fistula
- Gastrochisis/Omphalocele
- Imperforate Anus
- Necrotizing Enterocolitis
- Neonatal Small Bowel Obstruction

Operations/Procedures

Core

- Inguinal Hernia – Repair
- Intussusception – Operation
- Malrotation – Operation
- Meckel’s Diverticulum – Excision
- Pyloromyotomy
- Umbilical Hernia – Repair
23. Pediatric Surgery (cont.)

Diseases/Conditions

Advanced

- Branchial Cleft Anomaly – Excision
- Chest Wall Deformity – Repair
- Diaphragmatic Hernia – Repair
- Esophageal Atresia/Tracheoesophageal Fistula – Repair
- Gastrochisis/Omphalocele – Repair
- Hirschsprung Disease – Operation
- Imperforate Anus – Operation
- Intestinal Atresia/Stenosis – Repair
- Meconium Ileus – Operation
- Necrotizing Enterocolitis – Operation
- Orchiopexy
- Thyroglossal Duct Cyst – Excision
24. Plastic Surgery

Operations/Procedures

Core

- Complex Wound Closure
- Skin Grafting
25. Genitourinary

Diseases/Conditions

*Core*

- Hydrocele
- Scrotal Pain and Masses

*Advanced*

- Acute Urinary Retention
- Genitourinary Neoplasms

Operations/Procedures

*Core*

- Cystostomy
- Nephrectomy
26. Gynecology and Obstetrics

Diseases/Conditions

Core

- Ectopic Pregnancy
- Pelvic Inflammatory Disease

Advanced

- Gynecologic Neoplasms

Operations/Procedures

Core

- Hysterectomy and Salpingo-oophorectomy
- Surgical Considerations of the Pregnant Patient

Advanced

- Cesarean Section
27. 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
- Tracheostomy

Advanced

- Modified Neck Dissection
- Parotidectomy
DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – CORE

**Abdomen – General**
Abdominal Pain – Acute and Chronic
Rectus Sheath Hematoma

**Abdomen – Hernia**
Inguinal and Femoral Hernias
Miscellaneous Hernias
Umbilical and Epigastric Hernias
Ventral Hernia

**Abdomen – Biliary**
Benign Biliary Obstruction
Bile Duct Injury – Iatrogenic
Biliary Neoplasms
Cholecystitis
Choledochal Cyst

**Abdomen – Liver**
Hepatic Abscess
Hepatic Neoplasms – Metastatic
Primary Hepatic Neoplasms – Benign and Malignant

**Abdomen – Pancreas**
Cystic Lesions of the Pancreas
Pancreatic Neoplasms – Endocrine
Pancreatic Neoplasms – Exocrine
Pancreatitis – Acute/Pancreatic Necrosis/Abscess

**Alimentary Tract – Esophagus**
Esophageal Motility Disorders
Esophageal Neoplasms – Benign and Malignant
Esophageal Perforation
Gastroesophageal Reflux/Barrett’s
Hiatal Hernias

**Alimentary Tract – Stomach**
Gastric Adenocarcinoma
Gastric Foreign Bodies
Gastrointestinal Bleeding – Upper
GISTs and Miscellaneous Neoplasms
Morbid Obesity
Peptic Ulcer Disease
Stress Gastritis

**Alimentary Tract – Small Intestine**
Crohn Disease – Surgical Management
Enterocutaneous Fistula
Meckel’s Diverticulum
Mesenteric Ischemia – Acute (Arterial, Venous, and Nonocclusive)
Paralytic Ileus
Radiation Enteritis
Small Intestinal Neoplasms
Small Intestinal Obstruction
DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – CORE

Alimentary Tract – Large Intestine
Appendicitis
C. difficile Colitis
Colitis – Ischemic
Colon Cancer
Colonic Polyps
Colonic Volvulus and Obstruction
Diverticulitis
Gastrointestinal Bleeding – Lower
Ulcerative Colitis – Surgical Management

Alimentary Tract – Anorectal
Anal Cancer
Anal Dysplasia and STDs
Anal Fissure
Anorectal Abscess and Fistulae
Hemorrhoids
Rectal Cancer

Breast
Atypical Hyperplasia and Lobular Carcinoma in Situ
Benign Disease – Fat Necrosis, Fibrocystic Changes, and Radial Scar
Benign Inflammatory Disease – Mastitis, Abscess, and Mondor Disease
Breast Cancer – Hereditary
Breast Cancer – Inflammatory
Breast Cancer – Invasive Carcinoma (Ductal, Lobular, All Variants)
Breast Cancer – Paget’s Disease of the Nipple
Breast Disease During Pregnancy and Lactation
Breast Mass
Ductal Carcinoma in Situ
Fibroadenoma and Phyllodes Tumors
Male Breast Disease: Gynecomastia and Breast Cancer
Nipple Discharge and Intraductal Papilloma
Radiographic Abnormalities

Endocrine
Adrenal Mass – Incidental
Hyperaldosteronism – Primary
Hypercortisolism – Cushing Syndrome/Disease
Hyperparathyroidism
Hyperthyroidism
Hypothyroidism – Postoperative
Pheochromocytoma
Thyroid Cancer
Thyroid Nodule
Thyroiditis

Skin and Soft Tissue
Cellulitis
Hidradenitis
Melanoma and Nevi
Necrotizing Soft Tissue Infections
Nonmelanoma Skin Cancers
Paronychia and Felon
Pilonidal Cyst/Sinus
Soft Tissue Masses – Evaluation
DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – CORE

Surgical Critical Care
Abdominal Compartment Syndrome
Anaphylaxis
Acute Respiratory Distress Syndrome (ARDS)
Brain Death
Cardiac Arrest
Cardiac Arrhythmias – Common
Cardiac Failure and Cardiogenic Shock
Derangements of Electrolytes and Acid Base Balance
Endocrine Dysfunction
Hepatic Failure and Heporenal Syndrome
Hypovolemic Shock
Hypoxemic Syndromes (PE, Pneumonia)
Neurogenic Shock
Neurologic Dysfunction
Pain, Agitation, and Delirium
Renal Failure
Respiratory Failure
Sepsis and Septic Shock

Trauma
Burns
Chest Wall, Pleural and Diaphragm Injuries
Cardiac Injury
Colon and Rectal Injury
Duodenal and Pancreatic Injury
Esophageal Injury
Frostbite and Hypothermia
Gastric and Small Intestinal Injury
Geriatric Trauma
Hepatic Injury
Initial Assessment and Management of Trauma
Lower Urinary Tract Injuries
Pediatric Trauma
Pelvic Fractures and Retroperitoneal Hematoma
Splenic Injury
Tracheobronchial and Lung Injury
Trauma in Pregnancy
Upper Aerodigestive Tract Injury
Upper Urinary Tract Injuries
Vascular Injury – Abdomen
Vascular Injury – Extremities
Vascular Injury – Neck
Vascular Injury – Thorax

Vascular – Arterial Disease
Acute Thrombosis and Ischemia
Cerebrovascular Disease
Compartment Syndromes
Diabetic Foot Infections
Peripheral Arterial Emboli
Peripheral Vascular Occlusive Disease
DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – CORE

Vascular – Venous
- Evaluation of the Swollen Leg
- Thrombophlebitis
- Varicose Veins
- Venous Stasis/Chronic Venous Insufficiency
- Venous Thromboembolism

Vascular – Access
- Vascular Access for Dialysis

Thoracic Surgery
- Pleural Effusion/Emphyema
- Pneumothorax and Pleurodesis

Pediatric Surgery
- Abdominal Mass
- Abdominal Pain – Acute
- Appendicitis
- Gastrointestinal Bleeding – Lower
- Hypertrophic Pyloric Stenosis
- Inguinal Hernia
- Intussusception
- Malrotation
- Meckel's Diverticulum
- Umbilical Hernia

Genitourinary
- Hydrocele
- Scrotal Pain and Masses

Gynecology and Obstetrics
- Ectopic Pregnancy
- Pelvic Inflammatory Disease

Head and Neck
- Neck Mass – Evaluation
- Upper Airway Obstruction
DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – ADVANCED

Abdomen – General
Peritoneal Neoplasms

Abdomen – Biliary
Functional Biliary Disorders
Primary Sclerosing Cholangitis

Abdomen – Liver
Cirrhosis/Portal Hypertension (Ascites)

Abdomen – Pancreas
Intraductal Papillary Mucinous Neoplasms
Pancreas Divisum
Pancreatitis – Chronic (Including Hereditary Pancreatitis)/Pancreatic Insufficiency

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

Alimentary Tract – Esophagus
Esophageal Caustic Ingestion and Foreign Bodies

Alimentary Tract – Stomach
Functional Disorders of the Stomach

Alimentary Tract – Small Intestine
Enteric Infections/Blind Loop Syndrome
Short Bowel Syndrome

Alimentary Tract – Large Intestine
Functional Disorders of the Intestine
Polyposis Syndromes

Alimentary Tract – Anorectal
Fecal Incontinence
Rectal Prolapse

Breast
Postmastectomy Reconstruction Options

Endocrine
Adrenal Cancer
Multiple Endocrine Neoplasias
Parathyroid Cancer

Skin and Soft Tissue
Desmoids/Fibromatoses
Lymphedema/Lymphangitis
Pressure Ulcer
Soft Tissue Sarcomas

Surgical Critical Care
Organ Donors and Selection Criteria
DISEASES/CONDITIONS BY LEVEL

Diseases/Conditions – ADVANCED

Trauma
Bite and Envenomation Injuries
Brachial Plexus Injury
Extremity Injuries
Smoke Inhalation Injury and Carbon Monoxide Poisoning
Spine Fracture
Traumatic Brain Injury

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

Transplantation
Organ Preservation

Thoracic Surgery
Chylothorax
Mediastinal Tumors and Cysts
Mediastinitis
Malignant Tumors of the Lung: Primary and Metastatic
Superior Vena Cava Syndrome

Pediatric Surgery
Aerodigestive Tract Foreign Bodies
Biliary Atresia
Choledochal Cysts
Congenital Aganglionic (Hirschsprung Disease)
Congenital Diaphragmatic Hernia
Cryptorchidism
Esophageal Atresia/Tracheoesophageal Fistula
Gastrochisis/Omphalocele
Imperforate Anus
Necrotizing Enterocolitis
Neonatal Small Bowel Obstruction

Genitourinary
Acute Urinary Retention
Genitourinary Neoplasms

Gynecology and Obstetrics
Gynecologic Neoplasms

Head and Neck
Oral Cavity/Pharynx, Laryngeal, and Salivary Gland Cancer
OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – CORE
Abdomen – General
Abdominal Exploration
Peritoneal Dialysis Catheter Insertion

Abdomen – Hernia
Diaphragmatic Hernia – Repair
Inguinal and Femoral Hernia – Repair
Miscellaneous Hernias – Repair
Ventral Hernia – Repair

Abdomen – Biliary
Cholecystectomy with or without Cholangiography
Cholecystostomy
Choledochoenteric Anastomosis
Common Bile Duct Exploration and Choledochoscopy

Abdomen – Liver
Hepatic Abscess – Drainage
Hepatic Biopsy

Abdomen – Pancreas
Pancreatectomy – Distal
Pancreatic Debridement
Pancreatic Pseudocyst – Drainage

Abdomen – Spleen
Splenectomy

Alimentary Tract – Esophagus
Antireflux Procedures

Alimentary Tract – Stomach
Gastrectomy – Partial/Total
Gastroduodenal Perforation – Repair
Gastrostomy
Vagotomy and Drainage

Alimentary Tract – Small Intestine
Adhesiolysis
Ileostomy and Ileostomy Closure
Small Intestinal Resection

Alimentary Tract – Large Intestine
Appendectomy
Colectomy – Partial
Colectomy – Total and Subtotal
Colostomy and Colostomy Closure

Alimentary Tract – Anorectal
Anal Sphincterotomy – Internal
Anorectal Abscess – Drainage
Anorectal Fistula – Repair
Hemorrhoids – Management
Perianal Condylomas – Excision
OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – CORE

Endoscopy
Bronchoalveolar Lavage and Bronchoscopy
Esophagogastroduodenoscopy
Lower GI Endoscopy

Breast
Axillary Sentinel Lymph Node Biopsy and Lymphadenectomy
Duct Excision
Excisional Breast Biopsy and Partial Mastectomy
Mastectomy – Simple, Modified Radical, and Radical
Percutaneous Breast Biopsy and Cyst Aspiration

Endocrine
Parathyroidectomy
Thyroidectomy – Partial or Total

Skin and Soft Tissue
Melanoma – Wide Excision
Pilonidal Cystectomy
Sentinel Lymph Node Biopsy for Melanoma
Skin/Soft Tissue Lesions – Excisional and Incisional Biopsy
Soft Tissue Infections – Incision, Drainage, Debridement

Surgical Critical Care
Intubation and Difficult Airway
Nutritional Support
Ultrasound Use for Intravascular Access
Vascular Access

Trauma
Abdominal Exploration for Trauma
Cardiac Injury – Repair
Duodenal and Pancreatic Injury – Operations
Esophageal Injury – Repair
Fasciotomy
Focused Assessment with Sonography for Trauma (FAST)
Gastrointestinal Tract Injury – Repair
Hepatic Injury – Packing and Repair/Resection
Neck Injuries – Management
Splenectomy/Splenorrhaphy
Urinary Tract Injuries – Operations
Vascular Injuries – Operations
Wounds, Major – Debride/Suture

Vascular – Arterial Disease
Amputations – Lower Extremity
Embolectomy/Thrombectomy – Arterial
Lower Extremity Bypass

Vascular – Venous
Vena Cava Filter Insertion
Venous Insufficiency/Varicose Veins – Operation
OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – CORE

Vascular – Access
Arteriovenous Graft/Fistula
Vascular Exposure – Principles
Venous Access Devices – Insertion

Thoracic Surgery
Exploratory Thoracotomy – Open and Thoracoscopic
Partial Pulmonary Resections – Open and Thoracoscopic
Tube Thoracostomy and Thoracentesis

Pediatric Surgery
Inguinal Hernia – Repair
Intussusception – Operation
Malrotation – Operation
Meckel’s Diverticulum – Excision
Pyloromyotomy
Umbilical Hernia – Repair

Plastic Surgery
Complex Wound Closure
Skin Grafting

Genitourinary
Cystostomy
Nephrectomy

Gynecology and Obstetrics
Hysterectomy and Salpingo-oophorectomy
Surgical Considerations in the Pregnant Patient

Head and Neck
Lymph Node Biopsy
Tracheostomy
OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – ADVANCED
Abdomen – Biliary
Bile Duct Cancer – Operation
Bile Duct Injury, Iatrogenic – Acute Repair
Bile Duct Neoplasms – Operation
Gallbladder Cancer – Operation
Ultrasound of the Biliary Tree

Abdomen – Liver
Hepatic Ultrasound – Intraoperative
Segmentectomy/Lobectomy

Abdomen – Pancreas
Ampillary Resection for Tumor
Pancreatectomy – Total
Pancreatic Ultrasound – Intraoperative
Pancreaticoduodenectomy
Pancreatitis, Chronic – Operative Management

Alimentary Tract – Esophagus
Cricopharyngeal Myotomy with Zenker’s Diverticulum – Excision
Esophageal Perforation – Repair/Resection
Esophagectomy/Esophagogastrectomy
Esophagomyotomy (Heller)
Paraesophageal Hernia – Repair

Alimentary Tract – Stomach
Morbid Obesity – Operations
Postgastrectomy Syndromes – Revisional Procedures

Alimentary Tract – Anorectal
Anal Cancer – Excision
Rectal Cancer – Abdominoperineal Resection and Pelvic Exenteration
Rectal Cancer – Transanal Resection
Rectal Prolapse – Repair

Endocrine
Adrenalectomy
Ultrasound of the Thyroid

Skin and Soft Tissue
Ilioinguinal-Femoral Lymphadenectomy
Soft Tissue Sarcoma – Resection

Surgical Critical Care
Noninvasive and Invasive Cardiac Pacing

Trauma
Hand Tendon Repairs
Thermal Injuries – Operations
OPERATIONS/ PROCEDURES BY LEVEL

Operations/Procedures – ADVANCED

Vascular – Arterial Disease
Abdominal and Aortoiliac Aneurysm – Repair
Aortoiliac Reconstruction for Occlusive Disease
Carotid Endarterectomy
Endovascular Intervention Principles
Extra-anatomic Bypass
Graft-enteric Fistula – Management
Mesenteric Occlusive Disease – Operation
Peripheral Aneurysms – Repair
Superior Mesenteric Artery
Embolectomy/Thrombectomy
Ultrasound in the Diagnosis and Management of Vascular Diseases

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

Pediatric Surgery
Branchial Cleft Anomaly – Excision
Chest Wall Deformity – Repair
Diaphragmatic Hernia – Repair
Esophageal Atresia/Tracheoesophageal Fistula – Repair
Gastrochisis/Omphalocele – Repair
Hirschsprung’s Disease – Operation
Imperforate Anus – Operation
Intestinal Atresia/Stenosis – Repair
Meconium Ileus – Operation
Necrotizing Enterocolitis – Operation
Orchiopexy
Thyroglossal Duct Cyst – Excision

Gynecology and Obstetrics
Cesarean Section

Head and Neck
Modified Neck Dissection
Parotidectomy
1. Anesthesia

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

2. Biostatistics and Evaluation of Evidence

- Clinical Trials
- Evaluating the Quality and Applicability of a Study
- How Data is Expressed and Summarized
- Levels of Evidence
- Outcomes
- Research Design
- Surveys and Qualitative Research
- Tests of Significance

3. Fluids, Electrolytes, and Acid-Base Balance

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

4. 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
5. Immunology

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

6. Infection and Antimicrobial Therapy

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

7. Minimally Invasive Surgery – Principles

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

8. Nutrition and Metabolism

- Effect of Surgery, Illness and Injury on Nutritional Requirements
- Nutritional Assessment
- Nutritional Pharmacology and Immunonutrition
- Nutritional Requirements
9. Oncology and Tumor Biology

- Adjunctive Therapy for Cancer
- Genetic Susceptibility
- Screening and Biomarkers
- Tumor Immunology

10. Preoperative Evaluation and Perioperative Care

- Common Postoperative Problems
- Evaluation of Surgical Risk
- Management of Perioperative Risk
- Postoperative Pain Management
- Prophylaxis of Venous Thromboembolism
- Ventilatory Support/Management

11. 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

12. Wound Healing

- Wound Closure and Postoperative Care
- Wound Healing
1. Ethical Issues in Clinical Surgery: Competition of Interests

- Accepting Gifts from Vendors
- Clinical Research – Case 1
- Clinical Research – Case 2
- Clinical Research – Case 3
- Confronting Problem Behavior
- Non-Patient Care Obligations
- Personal Investments
- Refusal to Care for Patients
- Reimbursement Incentives – Case 1
- Reimbursement Incentives – Case 2
- Reimbursement Incentives – Case 3

2. Ethical Issues in Clinical Surgery: Truth Telling

- Dealing with Complications and Poor Outcomes
- Informed Consent
- Listening and the Surgeon-Patient Relationship
- Respecting Cultural Diversity and Individual Sensitivities
- Truth Telling and the Surgeon-Patient Relationship
- Use of the Internet and E-mail for Communication – Case 1
- Use of the Internet and E-mail for Communication – Case 2

3. Ethical Issues in Clinical Surgery: Confidentiality

- Concern for the Safety of Identifiable Others
- Conversations about Patients in Public
- Duty to Report Patients to Public Authorities
- Relaying Genetic Test Results to Family Members
- Revealing Confidential Information
- Surgeons Infected with Blood-Borne Diseases
4. Ethical Issues in Clinical Surgery: Professional Obligations

- Obligations to Other Professionals
- Obligations to Patients: Commitment
- Obligations to Patients: Competence
- Obligations to Society: Allocation of Resources
- Obligations to Society: Teaching and Learning Surgery

5. Ethical Issues in Clinical Surgery: End-of-Life Issues

- Advance Directives and the Surgical Patient
- DNR Orders in the Operating Room
- Euthanasia and Physician-assisted Suicide
- Futility
- Maintaining Contact
- Palliative Care
- Talking About Death
- Withdrawing and Withholding Treatment

6. Ethical Issues in Clinical Surgery: Substitute Decision Making

- By What Criteria Should Substitute Decision Makers Decide?
- Substitute Decision Makers and DNR Orders
- Substitute Decisions for Children
- Unclear Competence and Decision-Making Capacity
- Who Decides When the Patient Cannot?
1. **Non-Technical Skills for Surgeons (NOTSS)**
   - Cognitive Skills (Situation Awareness and Decision Making)
   - Social Skills (Communication, Teamwork and Leadership)

2. **Surgical Professionalism and Interpersonal Communication Education (SPICE)**
   - Admitting Mistakes – Ethical Choices and Reasoning
   - Advanced Communication Skills for Surgical Practice
   - Cultural Diversity – Working Through the Barriers of Language and Differing Customs
   - Delivering Bad News – Your Chance to Become a Master Surgeon
   - Giving and Getting Feedback
   - Managing Your Career – Making the Professional and Personal Choices that will Define You
   - Medical Errors and Apology
   - Safe Handoff of Patient Care Duties
   - The Stress of Surgical Practice – The Signs of Stress, Depression, and Suicide in You and Your Surgical Colleagues
   - Working with Professionals Around You – Team Communication and Respect
1. 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
1. 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