



Jordan University of Science and Technology

Faculty of Medicine

Department of General Surgery

2018-2019

COURSE TITLE:	General Surgery
COURSE CODE:	MED 412
CREDIT HOURS:	9 CREDIT HOURS
SEQUENCE:	10 WEEKS/ Year 4
COURSE COORDINATOR:	Dr. Qusai Al-Jarrah
CONTACT:	qmaljarrah@just.edu.jo

Course Description:

The surgical rotation is a 9-week rotation offered at five affiliated teaching hospitals. Students devote 65% of their time evaluating surgical patients in the allocated hospitals both inpatient and outpatient clinical settings. Students participate in 60 hours of didactic teaching and seminars.

Course objectives are concise and are distributed to students at the beginning of the rotation. Faculty members and academic surgical residents who participate in teaching are familiar with these objectives.

The overarching outcomes include the following:

- To recognise and understand common surgical conditions
- To recognise and understand emergency surgical presentations
- To be aware of what treatment possibilities are available, including non-operative
- To understand the principles of preoperative optimisation
- To understand postoperative complications
- To be able to explain in general terms to a patient the implications of a common surgical diagnosis
- To have enough basic understanding of surgery to help with future career choice

The breadth and depth of the surgical rotation appears to be well defined by the syllabus. The syllabus describes a broad array of diseases that a primary physician would normally encounter. Faculty instructions and supervision are commenced on daily basis by bedside tutoring and case based discussions. Each student receives a feedback and reflective teaching based on real life clinical encounters. Student questionnaires are also utilized by the course coordinator as a tool to monitor student educational experience across various clinical settings.

Students evaluation consists of the following components:

- Viva exam 12% of the final grade
- OSCE exam 28% of the final grade
- Professionalism, interpersonal skills, patient values and communication skills 15% of the final grade
- Final MCQ exam accounts for 45% of the final grade.

The average class score is adjusted following omitting both negative discrimination questions and difficulty index questions. The department encourages students to attend

acute take surgical on-calls and basic surgical skills workshops arranged by surgical residents. Finally, the course coordinator monitors students progress during the rotation, identifies any issues with the conduct of surgical tutoring and supports academically weak students early enough during the clerkship to help with educational support and mentoring.

Course Learning Outcomes:

II. General Objectives:

At the conclusion of their rotations, all students should be capable of:

- Performing a complete physical examination for the areas of head and neck, musculoskeletal and abdomen.
- Demonstrating an adequate knowledge of surgical diseases
- Performing both Complete and Focused patient workups and presentations
- Displaying professional behavior and functioning effectively as a member of a health care team

Recommended Textbooks

1. Principles and Practice of Surgery, 7th edition by O. James Garden.
2. The Symptoms and Signs of Surgical Disease, 5th edition.
3. Browse's Introduction to the Investigation and Management of Surgical Disease.
4. Bailey and Love's Short Practice of Surgery by Norman S Williams, Christopher J.K. Bulstrode, and P Ronan O'Connell.

Learning Objectives

(A) Lectures objectives

After studying the material covered in the lectures and bed-side teaching sessions of this course, the student is expected to achieve the following specific objectives:

No.	Subject	Specific Objectives
1	Fluids and electrolytes	<ul style="list-style-type: none"> • Describe the extracellular, intracellular and intravascular volume in a 70-kg man • List at least four endogenous factors that affect renal control of sodium and water excretion. • Describe the 24-hr sensible and insensible fluid and electrolyte losses in the routine postoperative patient • Identify the signs and symptoms of dehydration • List and describe the objective ways of measuring fluid balance • Know the normal electrolyte values in the normal body secretions • Describe the possible causes (differential diagnosis), appropriate laboratory studies needed, and the treatment of common electrolyte and fluid disorders

2	Bleeding disorders and blood transfusion	<ul style="list-style-type: none"> • Discuss medical history and physical findings that might identify the presence and etiology of a bleeding disorder. • List the minimum preoperative screening tests necessary when the patient is asymptomatic • Name the etiologic factors contributing to bleeding disorders • Name the common surgical conditions leading to disseminated intravascular coagulation (DIC).
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		<ul style="list-style-type: none"> • Outline the importance of major and minor blood groups • Describe how to obtain and store blood • List the indications for blood transfusion in surgical practice • Recognize hazards of blood transfusion and how to avoid those (Infections, reactions). • Identify the different components of blood and how to order each of them.
3	Shock	<ul style="list-style-type: none"> • Define shock. • List four categories of shock (hypovolemic, cardiogenic, septicemic, neurogenic). • List at least three causes for each type of shock. • Contrast the effects of each category of shock on heart, kidney and brain. • Recognize the hemodynamic features, diagnostic tests, and physical findings that differentiate each type of shock. • Name and briefly describe the monitoring techniques that help in diagnosis and management of shock. • Outline the general principles of fluid, pharmacologic, and surgical intervention for each category of shock.
4	Burns	<ul style="list-style-type: none"> • Obtain relevant history for burns (flame, scold, closed space, exposure time, possible associated injuries) • Describe burn depth and size in a patient with a major burn • Determine percentage and degree of burns • List the indications for admission • Discuss pain management. • Outline fluid replacement.

		<ul style="list-style-type: none"> • Discuss wound management (open, closed, principles of antiseptic solutions). • Know the value of skin grafting.
5	Surgical site infections and surgical infections	<ul style="list-style-type: none"> • List the factors that contribute to infection after a surgical procedure • Identify the types of surgical infections • Describe the principles of prophylactic antibiotic use • Describe the diagnostic features and indicated treatment for common skin infection • Describe the clinical features and treatment of anaerobic and synergistic gangrene • Describe the diagnostic evaluation for an intra-abdominal abscess. • List the causes of postoperative fever and discuss the diagnostic steps for evaluation.
6	Wound healing and its disorders	<ul style="list-style-type: none"> • Define a wound and describe the sequence and approximate time frame of the phases of wound healing. • Describe the essential elements and significance of granulation tissue. • Describe the three types of wound healing and the elements of each. • Describe the phases of wound healing distinct to each type of wound. • Describe clinical factors that decrease collagen synthesis and retard wound healing. • Describe the rationale for the uses of absorbable and non absorbable sutures.

		<ul style="list-style-type: none"> • Discuss the functions of a dressing. • Define a clean a contaminated and an infected wound and describe the management of each.
7	Extra cranial Vascular Disease	<ul style="list-style-type: none"> • Understand the pathophysiology of ischemic TIA'S/Strokes • Understand the clinical presentation of territorial strokes • Outline the clinical approach and investigations of cerebrovascular events. • Describe different treatment modalities and risks attached to each treatment option • Understand the clinical presentation of carotid dissection, carotid body tumors
8	Multiple injuries: first aid and triage. Management of specific traumas	<ul style="list-style-type: none"> • Describe the conditions, signs, and symptoms commonly associated with upper airway obstruction. • Describe the risks associated with the management of an airway in the traumatized patient. • Outline the options available and the sequence of steps required to control an airway in the traumatized patient, including protection of the cervical spine. • List the identifying characteristics of patients who are likely to have upper airway obstruction. • Define shock, including the pathophysiology. • 6. List four types of shock and outline the management of a patient in hemorrhagic shock. • List the indications and contraindications for use of a pneumatic anti-shock garment in patients with hemorrhagic shock.

		<ul style="list-style-type: none">• List six thoracic injuries that are immediately life threatening and should be identified in the primary survey and six that potentially life threatening and should be identified in the secondary survey. Outline a treatment plan for each injury.• List the indications for chest tube insertion, pericardiocentesis, and needle thoracentises. Outline the technique for each.• List three common thoracic injuries that, although not life threatening, need skilled care.• Define the limits of the abdominal cavity, demonstrate the abdominal examination for trauma and outline the tests that are of use in abdominal trauma.• Differentiate between blunt and penetrating trauma.• List the indications, contraindications, and limitations of peritoneal lavage. Describe a positive peritoneal lavage.• Outline the pathophysiologic events leading to decreased levels of consciousness, including the unique anatomic and physiologic features of head and spinal injuries.• List the three functions assessed by the Glasgow Coma Scale and outline the point scale.• Outline the initial management of the unconscious patient and the patient with suspected spinal cord injury.• List the test results and assessment results that should be passed to neurologic consultants.• Outline the differences between non-life-threatening and life threatening extremity injuries and the management of each.
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		<ul style="list-style-type: none"> • Describe a thorough examination of the extremities in a traumatized patient.
9	Benign breast disorders	<ul style="list-style-type: none"> • Identify and describe the major types of breast lumps. • List common risk factors for benign breast disease • List diagnostic modalities and their sequence in the workup of a patient with a breast mass and a patient with nipple discharge. • Describe the natural history of benign breast disorders • Describe the treatment for a fibroadenoma and fibrocystic diseases
10	Malignant breast disorders	<ul style="list-style-type: none"> • List risk factors for breast cancer. • Describe the natural history of malignant breast neoplasms. • List and discuss the types of breast cancer and their clinical staging. • Define the anatomic limits of surgical treatments of breast cancer. • List and discuss the treatment options for regional and systemic breast cancer (surgical, nonsurgical, and combined). • Describe the rationale for adjuvant chemotherapy, radiation, and hormonal therapy in the treatment of breast cancer. • List the current survival and recurrence rates of treated breast cancer, according to clinical stage.

		<ul style="list-style-type: none"> • Define a treatment plan for local recurrence and metastatic breast
11	Esophageal disorders	<ul style="list-style-type: none"> • Describe esophageal hiatal hernia with regard to anatomic type (sliding and paraesophageal) and need for treatment. • Describe the anatomic and physiologic factors predisposing to reflux esophagitis. • Describe the symptoms of reflux esophagitis and discuss the diagnostic procedures used for confirmation. • List the indications for operative management of esophageal reflux and discuss the physiologic basis for the antireflux procedure used. • Describe the pathophysiology and clinical symptoms associated with achalasia of the esophagus. • List the common esophageal diverticula, their location, symptomatology, and pathogenesis. • With particular reference to etiologic factors, differentiate pulsion and traction diverticula of the esophagus. • Describe and recognize the radiologic findings that characterize motility disorders of the esophagus, including achalasia and manometric evaluation of the lower esophageal sphincter. • List the symptoms suggestive of an esophageal malignancy. • Outline a plan for diagnostic evaluation of a patient with a suspected esophageal tumor. • Describe the natural history of a malignant lesion of the esophagus and list treatment options, indicating the order of preference.

		<ul style="list-style-type: none"> • List the common types of benign esophageal neoplasms and briefly describe how they are differentiated from malignant lesions. • Describe the etiology and presentation of traumatic perforation of the esophagus and the physical findings that occur early and late after such an injury.
12	Abdominal wall hernia	<ul style="list-style-type: none"> • Understand the term hernia. • Discuss basic anatomical knowledge. • Differentiate the various types of hernias on the basis of physical exam. • Recognize common complications of hernia; strangulation, ischemia or bowel obstruction. • Differentiate hernias from other causes of a groin masses. • Outline a plan for diagnostic evaluation and management of a patient with hernia.
13	A. Complication of Peptic ulcer disease. B. Gastric malignancies	<ul style="list-style-type: none"> • Compare and contrast the common symptoms and pathogenesis of gastric and duodenal ulcer disease, including patterns of acid secretion. • Discuss the significance of the anatomic location of either a gastric or duodenal ulcer. • Discuss the diagnostic value of upper gastrointestinal roentgenograms, endoscopy with biopsy, gastric analysis, serum gastrin levels, and the secretin stimulation test in patients with suspected peptic ulcer disease. • Describe in detail the nonoperative management of patients with peptic ulcer disease.

		<ul style="list-style-type: none"> • Discuss the complications of peptic ulcer disease, including clinical presentation, diagnostic workup, and appropriate surgical treatment. • List the clinical and laboratory features that differentiate the Zollinger-Ellison syndrome (gastrinoma) from duodenal ulcer disease. • Compare the risk of carcinoma in patient with gastric ulcer disease with the risk in those with duodenal ulcer disease. • Describe and discuss the common operations performed for duodenal and gastric ulcer disease as well as the morbidity associated with each procedure. • Discuss the commonly recognized side effects associated with duodenal and gastric ulcer disease surgery, including treatment plans for each. • Identify premalignant conditions, epidemiologic factors, and clinical features in patients with gastric adenocarcinoma. • Describe the common types of neoplasm that occur in the stomach, and discuss appropriate diagnostic procedures, therapeutic modalities, and prognosis for each. • List the general principles of curative and palliative surgical procedures for patients with gastric neoplasm
14	Intestinal Stomas	<ul style="list-style-type: none"> • Define intestinal stoma. • Mention the classification of intestinal stomas. • Describe the principles of stoma formation. • List the indications of stoma formation. • Describe attachment of the stoma appliance.

		<ul style="list-style-type: none"> • List complications of intestinal stomas. • Dietary advice to ostomates.
15	Pain Management	<ul style="list-style-type: none"> • Define the pain. • Describe the physiology of the pain. • Discuss the effects of untreated pain. • List pain theories. • Identify how to approach patient complaining of pain. • Mention the classification of pain and the definition of each type, especially nociceptive pain. • Recognize the different ways of pain killing post operatively. • Describe the difference between sedative drugs and pain killer. • List the non- pharmacological management methods of the pain.
16	Vermiform appendix and Meckel's diverticulum	<ul style="list-style-type: none"> • List the signs and symptoms of acute appendicitis • Formulate a differential diagnosis • Outline a diagnostic work up in patients with suspected acute appendicitis • List common complications of a ruptured appendix • Describe the incidence and management of appendiceal carcinoid • Describe the clinical presentation of Meckel's diverticulum MD • Discuss the treatment of MD

17	Colonic and rectal tumors	<ul style="list-style-type: none"> • Identify the common symptoms and signs of the carcinoma of the colon and rectum. • Discuss the appropriate laboratory, endoscopic, and x-ray studies for the diagnosis of carcinoma of the colon and rectum • Outline the treatment options including radiochemotherapy • Describe the postoperative follow up including discussion of the role of the carcinoembryonic antigen CEA in detecting recurrence • Using TNM and Dukes classification, discuss the staging and 5-year survival rate
18	Diverticulosis and mesenteric ischemia	<ul style="list-style-type: none"> • Describe the clinical findings of diverticular disease, differentiating the symptoms and signs of diverticulitis and diverticulosis. • Discuss complications of diverticular disease and their appropriate treatment • Describe clinical findings and presentation as well as treatment of mesenteric ischemia. • Discuss massive lower GI bleeding including differential diagnosis, initial management, appropriate diagnostic tests and treatment.
19	Inflammatory bowel disease	<ul style="list-style-type: none"> • Differentiate ulcerative colitis UC and Crohn's disease CD of the colon in terms of history, pathology, x-ray findings, treatment and risk of cancer

		<ul style="list-style-type: none"> • Discuss the role of surgery in the treatment of UC and CD complications. • Discuss the nonoperative therapy of CD and UC
20	Intestinal obstruction	<ul style="list-style-type: none"> • List signs, symptoms, and diagnostic aids for evaluating presumed large bowel obstruction. • Discuss at least four causes of colonic obstruction in the adult patient, including a discussion of frequency of each cause. • Outline a plan for diagnostic studies, preoperative management, and treatment of volvulus, of intussusception, of impaction, and of obstructing colon cancer. • Given a patient with mechanical large- or small- bowel obstruction, discuss the potential complications if the treatment is inadequate.
21	Inflammatory bowel disease	<ul style="list-style-type: none"> • Define inflammatory bowel diseases. • Mention types of inflammatory bowel diseases. • Discuss signs and symptoms of each type. • Recognize the difference between ulcerative colitis and chron's disease. • Mention the extra-intestinal manifestation of these diseases. • Discuss treatment methods and the surgical role in each type.

22	Acute perianal conditions	<ul style="list-style-type: none"> • Discuss the anatomy of hemorrhoids, including the four grades encountered clinically; differentiate internal and external hemorrhoids. • Discuss the etiologic factors and predisposing conditions in the development of hemorrhoidal disease. • Describe the symptoms and signs of patients with external hemorrhoids; with internal hemorrhoids. • Outline the principles of management of patients with symptomatic external and internal hemorrhoids, including the roles of nonoperative and operative management. • Discuss the role of anal crypts in perianal infection, and describe the various types of perianal infections. • Outline the symptoms and physical findings of patients with perianal infection. • Outline the principles of management of patients with perianal infections, including the role of antibiotics, incision and drainage, and primary fistulectomy. • Define fissure-in-ano. • Describe the symptoms and physical findings of patients with fissure-in-ano. • Outline the principles of management of patients with fissure-in-ano.
23	Complications of gallstones and jaundice	<ul style="list-style-type: none"> • List the common types of gallstones and describe the pathophysiology leading to their formation. • List several diseases that predispose to gallstones.

		<ul style="list-style-type: none"> • Describe the signs and symptoms in a patient with biliary colic. Contrast these symptoms with those of acute cholecystitis. • List the tests commonly used in the diagnosis of calculus biliary tract disease and describe the indications for, limitations, and potential complications of each. • Describe the likely natural history of a young patient with asymptomatic gallstones. • List the possible complications of biliary calculi and describe the history, physical examination, and laboratory findings for each. • Outline the medical and surgical management of a patient with acute cholecystitis. • Describe the signs, symptoms, and management of choledocholithiasis. • Outline a diagnostic and management plan for a patient with acute right upper quadrant pain. • Describe the diagnostic evaluation and management of a patient with fever, chills, and jaundice. • Define the following: Murphy's sign, Courvoisier's sign, T tube, including purpose and circumstances of use, gallstone ileus. • Contrast carcinomas of the gallbladder, bile duct, and ampulla of Vater with regard to survival and presenting symptoms.
24	Benign and malignant	<ul style="list-style-type: none"> • Introduction and anatomy of the Liver.

	<p>tumors of the hepatobiliary system</p>	<ul style="list-style-type: none"> • Discuss primary benign liver tumors types: gender affected, causes, clinical presentation, imaging studies findings, complications and treatment of each type. • Discuss primary malignant liver tumors types: gender affected, causes, clinical presentation, imaging studies findings, complications and treatment of each type. • Discuss liver metastases tumor, and how to detect metastases. • Role of surgical resection in liver metastases tumor. • List the two types of liver abscess and discuss the etiology, clinical feature, investigations, management and prognosis of each type.
25	<p>A. Acute and chronic pancreatitis</p> <p>B. Pancreatic tumors</p>	<ul style="list-style-type: none"> • Classify pancreatitis on the basis of the severity of injury to the organ. • List four etiologies of pancreatitis. • Describe the clinical presentation of a patient with acute pancreatitis, including indications for surgical intervention. • Discuss at least five potential early complications of acute pancreatitis. • Discuss four potential adverse outcomes of chronic pancreatitis as well as surgical diagnostic approach, treatment options, and management. • Discuss the criteria used to predict the prognosis for acute pancreatitis. • Discuss the mechanism of pseudocyst formation with respect to the role of the duct and list five symptoms and physical signs of prognosis.

		<ul style="list-style-type: none"> • Describe the diagnostic approach to a patient with a suspected pseudocyst, including indications for and sequence of tests. • Discuss the natural history of an untreated pancreatic pseudocyst as well as the medical and surgical treatment. • List four pancreatic neoplasms and describe the pathology of each with reference to cell type and function. • Describe the symptoms, physical signs, laboratory findings, and diagnostic workup of a pancreatic mass on the basis of the location of the tumor in the pancreas. • Describe the surgical treatment of pancreatic neoplasms. • Discuss the long-term prognosis for pancreatic cancers on the basis of pathology and cell type.
26	<p>Surgical liver infections Including Hydatid cysts</p>	<ul style="list-style-type: none"> • Discuss the lifecycle of hydatid cyst (hepatic and pulmonary) • List the relevant tests to diagnose hydatid cyst (plain X-Ray, U/S, CT, and serology). • Outline the methods of treatment
27	<p>Aneurysms and vascular anomalies</p>	<ul style="list-style-type: none"> • Describe the common sites and relative incidence of arterial aneurysms. • List the symptoms, signs, and differential diagnosis, and diagnostic and management plans for a patient with a rupturing abdominal aortic aneurysm. • Discuss the indications, contraindications, and risk factors for surgery in chronic asymptomatic abdominal aneurysms.

		<ul style="list-style-type: none"> • Define and discuss the prevention of the common complications following aneurysm surgery. • Compare thoracic, abdominal, femoral and popliteal aneurysms with respect to presentation, complications (i.e., frequency of dissection, rupture, thrombosis, and embolization), and treatment.
28	<p>Peripheral vascular occlusive disease</p>	<ul style="list-style-type: none"> • Describe the pathophysiology of intermittent claudication; differentiate this symptom from leg pain due to other causes. • Describe the diagnostic approach and medical management of arterial occlusive disease; include a discussion of the roles of the commonly used noninvasive procedures. • List criteria to help differentiate venous, arterial, diabetic, and infectious leg ulcers. • Describe the operative treatment choices available for chronic occlusive disease of the distal aorta and iliac arteries, superficial femoral / popliteal arteries, and tibial and peroneal arteries. • List four indications for amputation and discuss clinical and laboratory methods for selection of the amputation site. • Describe the clinical manifestations, diagnostic workup, and surgical indications for chronic renal artery occlusion. • Describe the natural history and causes of acute arterial occlusion, and differentiate embolic occlusion and thrombotic occlusion.

		<ul style="list-style-type: none"> • List six signs and symptoms of acute arterial occlusion and outline its management (e.g., indications for medical versus surgical treatment).
29	<p>Venous and lymphatic disorders</p>	<ul style="list-style-type: none"> • Identify the usual initial anatomic location of deep vein thrombosis and discuss the clinical factors that lead to an increased incidence of venous thrombosis. • Identify noninvasive and invasive testing procedures for diagnosing venous valvular incompetence and deep vein thrombosis. • Outline the differential diagnosis of acute edema associated with leg pain. • Describe five modalities for preventing the development of venous thrombosis in surgical patients. • Describe the methods of anticoagulant and thrombolytic administration, evaluation of adequacy of therapy, and contraindication to therapy. • Describe the clinical syndrome of pulmonary embolus, and identify the order of priorities in diagnosing and caring for an acutely ill patient with life-threatening pulmonary embolus. • List the indications for surgical intervention in venous thrombosis and pulmonary embolus. • Outline the diagnostic, operative, and nonoperative management of venous ulcers and varicose veins. • Define lymphedema praecox, lymphedema tarda, primary lymphedema, and secondary lymphedema.

		<ul style="list-style-type: none"> • Explain the pathophysiology of lymphedema and discuss its treatment.
30	Thyroid gland and thyroglossal disorders	<ul style="list-style-type: none"> • Describe the symptoms of a patient with hyperthyroidism; discuss the differential diagnosis and treatment options. • Understand the major risk factors for carcinoma of the thyroid gland and the prognostic variables that dictate therapy. • List the different types of carcinoma of the thyroid gland and their cell type of origin; discuss the appropriate therapeutic strategy for each. • Discuss the evaluation and differential diagnosis of a patient with a thyroid nodule.
31	Adrenal and parathyroid surgical disorders	<ul style="list-style-type: none"> • Discuss the evaluation and differential diagnosis of a patient with hypercalcemia. • Discuss the surgical therapy of primary hyperparathyroidism. • Discuss the presentation and appropriate therapy for patients with parathyroid carcinoma, and contrast this with other causes of primary hyperparathyroidism. • Review the pathophysiology of secondary and tertiary hyperparathyroidism, and discuss the surgical therapies. • Describe the multiple endocrine neoplasia syndromes and their surgical treatment. • List and discuss three major adrenal dysfunctions, their clinical presentation, etiology, diagnostic procedures, and treatment options.

		<ul style="list-style-type: none"> • Describe the clinical features of Cushing's syndrome and tell how causal lesions in the pituitary, adrenal cortex, and extraadrenal sites may be distinguished from a diagnostic standpoint. • Discuss medical and surgical and surgical management of Cushing's syndrome in patients with adrenal adenoma and with pituitary adenoma causing adrenal hyperplasia, with an ACTH-producing neoplasm. • Describe the likely pathology, clinical features, and laboratory findings of a patient with hyperaldosteronism. • Discuss the diagnostic workup of a patient with suspected hyperaldosteronism and the preferred operative treatment. • Discuss pheochromocytoma, including its associated signs and symptoms, an appropriate diagnostic workup, and its treatment. • Describe the features of the multiple endocrine adenopathy syndrome associated with pheochromocytoma. • Discuss the possible causes of virilization in a patient, including the clinical presentation and diagnostic workup.
32	Diseases of the salivary glands	<ul style="list-style-type: none"> • Review the anatomy of major salivary glands. • Discuss patterns of presentation, investigations, and treatment of siallectasis. • Describe common infections affecting the major salivary glands (including postoperative parotitis).

		<ul style="list-style-type: none"> • Understand the clinical presentation of benign and malignant salivary gland tumours. • Classify malignant salivary gland tumors.
33	Congenital anomalies of the genitourinary system	<ul style="list-style-type: none"> • Identify the different anomalies (Agenesis, horseshoe Kidney, PUJ, Reflux, hypospedias) • Appreciate that such anomalies may be related to other anomalies. • Formulate a list of relevant investigations • Suggest the treatment modalities
34	Urinary calculi	<ul style="list-style-type: none"> • Discuss epidemiology & etiology of renal stones. • List complications of renal stones • Discuss metabolic incidents associated with stones • Outline principles of management Factors that influence treatment
35	Urinary tract infections	<ul style="list-style-type: none"> • List lower and upper urinary tract parts. • Define urinary tract infection. • Explain the pathophysiology of urinary tract infection. • List the most risk factors for urinary tract infection. • Diagnose urinary tract infection. • Manage urinary tract infection in different sex and age category.
36	Diseases of the prostate	<ul style="list-style-type: none"> • Outline the main embryological, anatomical, and physiological and histopathological features of prostate gland.

		<ul style="list-style-type: none"> • Discuss in brief the natural history and etiology of both inflammatory and neoplastic prostate diseases • Analyze the main clinical points related to prostatitis (acute and chronic) with reference to chronic pelvic pain syndrome • Provide a general overview of prostate tumors with reference to benign hyperplasia and adenocarcinoma. • Discuss of the role of screening methods.
37	Renal and bladder tumors	<ul style="list-style-type: none"> • Appreciate the clinical presentation and the indirect signs of each tumor. • Understand the methods and importance of staging • Identify the relevant investigations and confirmative measures • Appreciate the role of surgery in the treatment • Appreciate the role of other treatment modalities.
38	Testicular tumors	<ul style="list-style-type: none"> • Discuss acute scrotum versus painless swelling of scrotum. <ul style="list-style-type: none"> • Staging and its clinical implication. • List the management methods
39	Surgical Aspects of ischemic heart disease	<ul style="list-style-type: none"> • Recognize the clinical presentation • List the predisposing factors • Identify relevant diagnostic investigation • Cardiac angiogram review • Discuss modalities of treatment
40	Primary and secondary lung neoplasms	<ul style="list-style-type: none"> • Understand the major trends in lung cancer epidemiology in the past 50 years

		<ul style="list-style-type: none"> • Know the role of smoking in lung cancer and other less common environmental exposures • Describe the pathogenesis of lung cancer based on several current models of oncogenesis • Know the essential differences between the two major classifications of broncogenic carcinoma • Develop an algorithm for management of the symptomatic versus asymptomatic thoracic patient • Know the features of the TNM staging for non-small cell lung cancer • Develop an outline for management of non-small cell lung cancer and small cell lung cancer • Describe the presentation, evaluation, and management of secondary lung neoplasms • Be familiar with the spectrum of benign lung tumors
41	Mediastinal disorders	<ul style="list-style-type: none"> • Describe the key organs in each mediastinal compartment and the potential pathology that can arise • Know the general incidence of the most common mediastinal masses. • Develop an understanding of the options to evaluate mediastinal masses and the advantages and disadvantages of both • Know the differential for lesions that can be confused for primary mediastinal masses • Name the three most common tumors in each compartment • Know the differential diagnosis for a germ cell tumor

		<ul style="list-style-type: none"> • Know the potential diagnostic markers for paraneoplastic, endocrine and germ cell tumors
42	<p>Surgical pleural disorders</p>	<ul style="list-style-type: none"> • Understand the pathophysiology of pneumothorax and its management. • Know the differential diagnosis for fluid in the pleural space • Understand how patients develop a hemothorax and chylothorax and the appropriate treatment options • Outline the stages of development of an empyema • Describe the typical characteristics of pleural tumors
43	<p>Pediatric surgery</p> <p>Pediatric inguinoscrotal disorders</p> <p>Hirschsprung's disease</p> <p>Esophageal atresia and TE-fistula</p> <p>Congenital diaphragmatic hernia</p>	<ul style="list-style-type: none"> • Determine maintenance fluid requirements and normal urinary output for infants and children. • Determine the blood volume and describe methods of replacement of blood loss in infants and children. • Describe the typical presentation and findings on physical examination of hypertrophic pyloric stenosis. • Define gastroesophageal reflux disease and describe its typical presentation and methods of evaluation. • Describe the typical presentation of neonatal bowel obstruction and methods of evaluation. Be able to describe the differential diagnosis of neonatal bowel obstruction. • Explain the typical clinical presentation of intussusception, including the principles of resuscitation, use of barium enema, and indications for and principles of operative treatment.

	<p>Neonatal Intestinal Obstruction</p>	<ul style="list-style-type: none"> • Explain the anatomical defect in Hirschsprung's disease, and relate this to the functional bowel obstruction. • Describe the differential diagnosis for constipation and methods of treatment. • Describe the medical management of vomiting in infants and children. • Describe the differential diagnosis of vomiting and the importance of bilious vomiting in children. • Describe congenital diaphragmatic hernia and eventration of the diaphragm including diagnosis and treatment. • Define the most common types of esophageal atresia and describe the typical clinical presentation of an infant with esophageal atresia, the radiologic method of determining presence or absence of a distal tracheoesophageal fistula. • Describe the embryologic problem resulting in malrotation, the mechanism of duodenal obstruction, and small bowel volvulus. • State the principle of medical management of necrotizing enterocolitis and explain the indications for surgical intervention. • Describe a Meckel's diverticulum and list the four most common complications. • Define and distinguish gastroschisis and omphalocele and how the appearance of the herniated bowel differs from that of the omphalocele.
<p>44</p>	<p>Perioperative management</p>	<ul style="list-style-type: none"> • Define perioperative management. • Discuss preoperative cardiovascular assessment. • Discuss preoperative pulmonary evaluation.

		<ul style="list-style-type: none"> • The deep vein thrombosis and pulmonary embolism. • Evaluation of the risk of bleeding. • Describe the fluid resuscitation and nutritional support perioperatively. • Approach to febrile surgical patients.
45	Transplantation surgery	<ul style="list-style-type: none"> • Define the transplantation surgery. • History of organ transplantation development. • List the classification of organ transplantation. • Discuss the types of organ donor. • Describe the physiology of organ matching. • Discuss types of rejection. • Principles of immunosuppression therapy. • Mention the complications of transplantation. • Discuss kidney, pancreas, liver transplantation.
46	Nutrition of surgical patient	<ul style="list-style-type: none"> • Understand who is at risk of malnutrition and how to identify. • Discuss different feeding pathways of surgical patient. • Discuss key points of enteral and parental nutritional and the complications of each. • Describe how to estimate nutritional requirements. • Discuss refeeding syndrome.
47	Principles of plastic surgery	<ul style="list-style-type: none"> • Brief introduction about reconstructive surgery. • List the classification of grafts. • Discuss skin graft contracture: problem with grafts. • Mention the stages of split skin graft. • List the causes of failure of skin graft. • List the types and classification of flaps.

		<ul style="list-style-type: none"> • List the causes of failure of flaps. • Discuss types of transplant. • Discuss methods of excision, suturing, and the factors determine the suture markers. • List types of wound, and the factors affect wound healing. • Describe the role of plastic surgery in craniofacial, burn, breast, hand, aesthetic surgeries. • Discuss surgical management of pressure sores.
48	Skills of physical examination head & neck	<ul style="list-style-type: none"> • Cervical lymph nodes • Thyroid examination • Cystic hygroma • Examination of other neck masses • Carotid artery pulsations and carotid body tumor • Position of trachea
49	Physical examination of the chest	<ul style="list-style-type: none"> • Chest deformity desertion • Chest expansion • Signs of phenol thorax • Signs of pleural effusion • Heart sounds and position of apex beat
50	Physical examination abdomen and genitalia	<ul style="list-style-type: none"> • Inspection for hernia orifices and cough impulse • Inspection of diversion of the recti • Palpate for hepatomegaly and how to measure liver span • Palpate for splenomegaly • Palpate for kidneys • How to differentiate between spleen and left kidney masses

		<ul style="list-style-type: none"> • Examine for ascites • Palpate for abdominal aorta • Signs of hernia • Inguinal masses • Examination of gentile for haematocele/ testicular masses, epidermal cyst
51	Physical examination lower limbs	<ul style="list-style-type: none"> • Describe shape and deformity • Signs of chronic ischemia • Peripheral pulses • Examination for foot ulcers • Examination for super facial and deep sensations • Examination for muscle power muscle tone , and reflexes • Examination for amputations (level , stump, joint deformity) • Signs of DVT • Signs of varicose veins
52	Physical examination general	<ul style="list-style-type: none"> • Pulse examination • Blood pressure examination • Signs of anemia • Signs of dehydration • Signs of cyanosis • Signs of jaundice • Level of consciousness

53	Physical examination for post operation patient	<ul style="list-style-type: none"> • Types of skin incisions • Describe colostomy • Describe drains • Describe I.V lines and canulae
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Course Assessment

Exam Format	Weight (%)
Clinical end rotation	12
Mini-OSCE	28
Evaluation	15
Final MCQs	45
Total	100

Daily teaching Activity

Time	Activity
8:00-9:30 am	Students take a full history and do physical examination
9:30-12:00 pm	Bedside teaching session, or outpatient clinics or visiting endoscopy units
12:00-13:00 pm	Lunch break
13:00-15:00 pm	Didactic teaching

Students Learning Outcomes

Student Learning Outcomes(SLOs) (4-8 Maximum) Upon successful completion of this course, students should be able to:			
SLOs	Related ILO(s)* (numbers only)	Evaluation Criteria (MCQ, OSCE, Homework...)	
		Type of Criteria (MCQ, OSCE, Homework...)	Weight (%)
Understand the clinical and pathological basis of various surgical diseases	1,2,4	MCQ	45
Able to explain symptoms, signs, investigations, and forms of	2,3,4,5,6,7,10	Mini-OSCE + end rotation viva	40

treatments of common surgical pathologies			
Professionalism, interpersonal and communication skills, and systems-based practice	1,9,11	Bedside teaching and mini clinical evaluation exercise (Mini-CEX)	15
			100

Intended Learning Outcomes (ILOs)

1. Demonstrate a sufficient understanding of the structural organization and functions of the following systems of the human body: circulatory, respiratory, gastrointestinal, endocrine, hematopoietic & lymphatic, musculoskeletal, nervous, and genitourinary systems.
2. Conceptualize the cellular, molecular, genetic, and biochemical mechanisms that maintain body's homeostasis and their derangements in disease states.
3. Apply their knowledge of human anatomy and function to solve questions regarding major clinical cases and diseases.
4. Attain appropriate and systematic clinical history of different medical conditions and settings.
5. Demonstrate proficiency in performing clinical skills and procedures.
6. Perform relevant physical examination on patients professionally and ethically.

- 7.** Identify the major signs and symptoms of disease states, recognizing risk factors and etiologies, in an interdisciplinary approach to differentially diagnose patients.
- 8.** Order and interpret results of relevant basic diagnostic procedures, such as laboratory investigations and conventional imaging procedures.
- 9.** Apply safe and accurate methods of pharmacotherapy of major disease states.
- 10.** Critically appraise research studies guided by evidence-based medicine.
- 11.** Demonstrate ability to work in diverse settings and communities.