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**Monday 25 November 2019**

AN-NAJAH NATIONAL UNIVERSITY

DEPARTMENT OF MEDICINE

General Surgery - Senior ILOs

(7222601)

# Course Outline

* **Course Details**

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| Course Title | General Surgery Senior |
| Course Number | 7222601 |
| Prerequisite(s) | Finish 5th year |
| Course Type:  | Compulsory |
| Credit Hours | 8 |

* **Class Details**

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| --- | --- |
| Weeks | 8 weeks |
| Time | 4 days/ week 8:00 am- 2:00 pm and 6 (24 hours) on-calls |
| Location | An-Najah National University Hospital and Ministry of Health Hospitals affiliated to An-Najah National University in the northern of West Bank |

* **Course Description and Objectives**

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| An eight-week general surgery rotation is a clinical experience that introduces students to basic principles of surgery and related problems based on the knowledge that was taken during the fourth year. Its curriculum is defined by learning objectives and encompasses inpatient-hospital and outpatient-office experiences.During the clerkship, students evaluate and follow patients. The 8-week rotation is divided into seven weeks of general surgery and one week of surgical emergency. Functioning as members of the patient-care team, the students share pre- and post- operative evaluation and management, and visiting the operating theaters to observe surgical procedures. Daily rounds and faculty/preceptor interactions give students the opportunity to discuss patient problems in detail. Faculty members provide students with regular feedback, advice, and direction during this rotation. Throughout the course, students will be involved in the daily morning report, clinical rounds, outpatient clinics and interactive seminars. |

# Textbooks and References

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| Textbook(s) |
| 1. **Bailey & Love's Short Practice of Surgery,** 27th EditionNorman Williams, P Ronan O'Connell, Andrew McCaskie2. **Browse's Introduction to the Symptoms & Signs of Surgical Disease 4th Edition**by Norman L. Browse, John Black, Kevin G. Burnand, William E. G. Thomas.3. **Surgery: A Case Based Clinical Review 2015th Edition**by Christian de Virgilio , Paul N. Frank , Areg Grigorian 4. **First Aid for the Surgery Clerkship (First Aid Series) 2nd Edition**by Matthew S. Kaufman , Latha Ganti , S. Matthew Stead , Nitin Mishra  |
| References |
| * **Schwartz's Principles of Surgery,** 11th edition. F. Charles Brunicardi, Dana K. Andersen, Timothy R. Billiar, David L. Dunn, Lillian S. Kao, John G. Hunter, Jeffrey B. Matthews, Raphael E. Pollock
* [**Sabiston Textbook of Surgery**: The Biological Basis of Modern Practicsurgical Practice](http://www.amazon.com/Sabiston-Textbook-Surgery-Biological-Practicsurgical/dp/141605233X/ref%3Dsr_1_1?ie=UTF8&s=books&qid=1258983836&sr=1-1), by Courtney M. Townsend Jr. MD, R. Daniel Beauchamp MD, B. Mark Evers MD, and Kenneth L. Mattox MD
* **Published Scientific papers.**
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# Textbook Cover



# Topics and Teaching Methods:

**Objectives that will be covered during this course:**

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| **No.** | Title | **Objectives** |
| 1 | Fluids and electrolytes  | * Fluid compartments
* Recognize disturbances in water and electrolytes
* Outline methods of management
 |
| 2 | Blood transfusion | * 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 them (Infections, reactions).
* Identify the different components of blood and how to order each of them.
 |
| 3 | Shock | * Define shock; General Discuss pathophysiology of shock
* Recognize types of shock (hypovolemic, cardiogenic, septicemic, neurogenic).
* Identify the importance of physiologic monitoring of the surgical patient (urine output, cardiac output, central venous pressure, Swan-Ganz catheter)
* Discuss the management of different types.
 |
| 4 | Burns and skin coverage  | * Obtain relevant history for burns (flame, scold, closed space, exposure time, possible associated injuries)
* Determine percentage of burns
* List indications for admission
* Discuss pain management.
* Outline fluid replacement.
* Discuss wound management (open, closed, principles of anticeptic solutions).
* Know the value of skin grafting.
 |
| 5 | Surgical infections and prophylactic antibiotics | * Discuss pathophysiology of surgical infection.
* Identify of surgical infections
* Outline of principles of antibiotic usage in surgical patients.
 |
| 6 | Surgical disease of the spleen  | * Anatomy and physiology review
* Classification of the splenic diseases – no traumatic
* Clinical presentation
* Investigation
* Modality of treatment
 |
| 7 | Hernias | * Define "hernia" and differentiate direct inguinal hernia, indirect inguinal hernia, femoral hernia, lumbar hernia, obturator hernia, incisional hernia, and spigelian hernia.
* Describe the anatomy of the inguinal region including the layers within the spermatic cord.
* Identify and state the incidence, identification of, operative risks and complications of abdominal wall hernias, to include femoral, inguinal, and ventral hernias.
* Outline the fundamentals of surgical repair of various groin, umbilical, and ventral hernias.
 |
| 8 | Multiple injuries: first aid and triage. | * Classify types of trauma
* List types of injuries
* Recognize risk factors and trauma scores
* Identify the value of first aid measures and methods of rescuscitation
 |
| 9 | Head Injuries | * Glasgow coma scale
* Define differentiate between the pathology of primary & secondary head injury.
* Use the different diagnostic tools to evaluate head injury patient.
* Understand & apply the treatment modalities for the different condition of head injury.
* Discuss prognosis of head injury
* List the complication of head injury.
 |
| 10 | Spinal Injury  | * Differentiate between the pathology of primary & secondary spinal injury.
* List diagnostic modalities.
* Outline the treatment modalities for the different condition of spinal injury.
* Discuss of spinal injury
* List the complication of spinal injury.
 |
| 11 | Abdominal trauma | * Recognize the mechanism of injury (penetcating, Blunt).
* Recognize the wide spectrum of possible presentations.
* Discuss ABC (Airway, Breathing, Circulation) management.
* Identify the role of US ultrasound, CT scan computed tomography, lavage, and peritoneal manometry in the diagnosis.
* Discuss specific injury of difference intraabdominal organs (spleen, liver, kidney, pancreas intestine).
 |
| 12 | Chest trauma | * Understand mechanism of truama.
* Recognize the major life threatening injuries (tension pneumothorax, tamponad, major vascular injury, massive lung contusion, major tracheal or bronchial injuries).
* Recognize how and when to ask for relevant investigations).
* Know the principles of treating pneumothorax and hemothorax.
 |
| 13 | Infertility  | * Anatomy of genital organs
* Definition
* Etiology
* Investigation
* Modality of treatment
 |
| 14 | Parenteral and enteral feedings: | * Definition
* Indication
* Side effect of parental and enteral feeding
* Follow up investigation during feedings
 |
| 15 | Neck and vascular trauma | * Appreciate the symptoms that may indicate a hidden trauma to the neck.
* Discuss soft tissue trauma to the neck.
* Discuss briefly injuries to the carotid artery, laryax, trachea and esohagous.
* Recognize the common methods of stopping arterial bleeding.
* Review the basic anatomy of the neck.
 |
| 16 | Peripheral vascular diseases | * Identify pain due to peripheral ischemia (claudication, rest pain, critical limb).
* Suggest relevant investigations such as Doppler ultrasound and angiography.
* Define common vascular procedures.
 |
| 17 | Aneurysms and vascular anomalies | * Describe different types of aneurysms and the possible symptomatology for each one (subclavian, aortic, dissecting, popliteal)
* Appreciate the etiology of each
* Differentiate between false and true aneurysm.
* Suggest relevant investigations and treatments.
* List the common vascular anomalies.
 |
| 18 | Varicose veins and lymphatic diseases. | * Review venous and lymphatic anatomy
* Discuss principles of physical examination.
* Differentiate between primary varicose veins and a post phlebetic limb.
* Suggest modalities of treatment.
* Differentiate between different types of lymphedemes and their clinical implications.
 |
| 19 | Pneumothorax, empyema & lung cysts | * List the difference types of pnemothorax and empyema.
* List signs of pneumothorax and empyema.
* Discuss the etiology of pnemothorax.
* Outline the treatment for empyema and pnemothorax
* List the cystic lesions of the lung alert.
 |
| 20 | Pediatric Surgery  | * 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 gastroesophogeal 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.
* Explain the anatomical defect in Hirschprung'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.
 |
| 21 | Diseases of the salivary glands | * Review the anatomy of major salivary glands.
* Patterns of presentation, investigations, and treatment of sialectasis.
* Describe common infections affecting the major salivary glands (including postoperative parotitis).
* Understand the clinical presentation of benign and malignant salivary gland tumours.
* Classify malignant salivary gland tumours.
 |
| 22 | Gastric malignancy Esophagous  | * Recognize the clinical presentation
* Recognize the predisposing factors
* Identify relevant diagnostic and staging investigations.
* Outline modalities of treatment
* Identify features of gastric cancer among Jordanians.
 |
| 23 | Gall bladder diseases | * Outline the signs and symptoms of acute and chronic gallbladder disease including common duct stones as well as the diagnostic tests used in detection of biliary stone disease and rationale for treatment.
* Describe the usual gross anatomy of the biliary system and the physiologic function of each of its parts.
* Describe the pathophysiology of gallstone formation.
* Describe the complications of untreated gallstones.
* Outline the diagnostic procedures necessary to differentiate obstructive from non-obstructive jaundice and the proper treatment for common duct obstruction.
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| 24 | Ischemic heart disease | * Recognize the clinical presentation
* Predisposing factors
* identify relevant diagnostic investigation
* Cardiac angiogram review
* Modalities of treatment
 |
| 25 | Mediastinal disorder | * Anatomy
* Classification of diseases of mediastinum
* identify relevant diagnostic investigating
* Chest X-R.Y,MRI, CT-Scan review
* Treatment
 |
| 26 | Congenital heart disease | * Embryology of the heart.
* Identify the different anomalies
* Appreciate that such anomalies may be related to other anomalies
* Formulate a list of relevant investigations
* Treatment modality
 |
| 27 | Valvular heart disease  | * Definition
* Type of valvular heart disease
* Pathology
* Clinical presentation
* Modality of treatment
 |
| 28 | Thoracic aortic surgery  | * Anatomy of the aorta
* Type of aortic aneurysm and dissection
* Diagnostic modality
* CT – scan review
* Indication for surgery
 |
| 29 | Pancreatitis | * Define pancreatitis and describe its pathogenesis.
* List the common etiological factors (gallstones, alcohol).
* Understand the role of different investigations (lab, U/S, CT, ERCP) in diagnosis and treatment.
* List complications of pancreatitis.
* Understand the general lines of management.
 |
| 30 | Pancreatic tumors | * Classify pancreatic tumors.
* Discuss the clinical presentation
* Understand the role of ERCP, CT, MRI, U/S in diagnosis and treatment
* Describe staging of the disease
* Know the prognosis and principles of treatment
 |
| 31 | Hepatic tumors and cysts | * Discuss hepatocellular carcinoma in brief.
* Understand the importance of liver secondaries and how to prove the diagnosis.
* Discuss the lifecycle of hydatid cyst.
* List the relevant tests to diagnose hydatid cyst (plain X-Ray, U/S, CT, serology).
 |
| 32 | 1. Colonic tumors
2. Diverticulosis and mesenteric ischemia
3. Anorectal diseases
 | * Discuss neoplasms of the colon, rectum, and anus. This should include risk factors, etiology, signs, symptoms, and treatment.
* Describe signs and symptoms of diverticular disease.
* How can colon obstruction be differentiated from small bowel obstruction?
* Know the signs of obstruction due to volvulus and its treatment.
* Outline the differences between ulcerative colitis and Crohn's disease of the colon. Include the indications for surgical treatment for each.
* Differentiate between perirectal abscess, hemorrhoidal disease, anal fissures, and fistulas.
 |
| 33 | Congenital anomalies of the genito-urinary system | * 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 modality
 |
| 34 | Renal stones | * Discuss epidemiology & etiology of renal stones.
* List complications
* Discuss metabolic incidents associated with stones
* Outline principles of management
* Factors that influence treatment
 |
| 35 | Surgical abdominal incision  | * Abdominal wall anatomy review
* Type of incisions and indication
* Tecqnict of laparatomy and closure
* Complications
 |
| 36 | Erectile dysfunction  | * Anatomy of the male genitalia
* Etiology of days function
* Clinical presentation
* Investigation
* Surgical and conservative management
 |
| 37 | Diseases of the prostate | * Outline the main embryological, anatomical, and physiological and histopatholigical features of prostate gland.
* List the main congenital prostate anomalies
* 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.
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| 38 | Kidney and bladder tumors | * Appreciate the clinical presentation and the indirect signs
* 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 Laparoscopic surgery and other minimally invasive treatments
* Appreciate the role of other treatment modalities.
 |
| 39  | Testicular tumors and diseases | * + - * Acute scrotum Vs painless swelling of scrotum.
			* Staging and clinical implications management.
			* Epididymitis, causes and treatment
 |
| 40 | Surgical aspects of thyroid & parathyroid diseases. | * Formulate a differential diagnosis for a goiter
* list tumors of thyroid gland
* appreciate the role of surgery
* list possible post operative complications
* elecit signs and symptoms related to thyroid disease (thyrotoxicosis,hypothyroidism,eye manifestations, tremors, Reflexes)
* appreciate the relevance of performing TFT, hormone measurements, U/S, FNA, radioactive scans.
* Elecit sign and symptoms of hypercalcemia
* Briefly list etiologies of hypercalcemia and how to differentiate between them
* Differentiate between primary, secondary and tertiary hyperparathyroidism
 |
| 41 | Back pain, Mechanical | * Diagnose and understand the natural history and management principles of whiplash and soft tissue injury.
* Recognize the broad categories of spinal pain and radicolopathy.
* The signs and symptoms (including cauda equina syndrome).
* Their common causes, their diagnosis and their management (cervical and lumbar disc herniation, osteoarthritic disease,

 spondylolisthesis). * Their differential diagnosis and management (including metastatic disease and primary spinal tumors).
* recognize the broad categories of myelopathy.
* the signs and symptoms (including comparison of acute and chronic spinal cord injury).
* the common causes, their diagnosis and their management (cervical and lumbar disc
* herniation and osteoarthritic disease).

Differential diagnosis and management (including transverse myelopathy, metastatic disease and primary spinal tumors).  |
| 42 | CNS Tumors | * Understand the differentiate types of primary CNS tumors & metastatic tumors.
* Be able to know the basic pathological factors of CNS tumors.
* To understand the clinical presentation (general & specific)
* To know & apply the diagnostic tools with specific features of each type.
* To be able to apply the management protocol & apply the different treatment modalities, surgery , radiotherapy & chemotherapy.
* The prognosis of brain tumor in front & with specific types.
 |
| 43 | Morbid obesity – surgery | * Definition of morbid obesity
* General complication
* Indication for surgery
* Type of surgery
* Post operative complication

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| 44 | Skin tumors  | * Anatomy of the skin
* Type of tumors
* Predispose factors
* Prophylactic measurement from skin tumors
* Clinical presentation
* Investigation
* Treatment

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| 45 | Hand injuries and infection  | * Surgical anatomy of the hand
* Type of injuries
* Clinical review of hand injuries
* Nerve's evaluation of affected nerve
* Modality pf surgical treatment

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| 46 | Breast disease  | * Anatomy of the breast
* Blood suyply to the breast
* Classification of the breast disease's depend on benign and malignant
* Course clinical presentation
* Modality of investigation
* Indication for surgery
* Type of surgery
* Postoperative follow up inpatient with breast cancers.
 |
| 47 | Chemotherapy  | * Definition
* Type of chemotherapy
* General consideration about the common used chemotherapy and mode action
* Follow of patients can chemotherapy
* Complication during and post chemotherapy course
 |
| 48 | Cleft lip and palate | * Embryology of the lips and palate
* Identify presentation and diagnostic methods
* Preoperative care
* Outline principles of management
 |
| 49 | Dysphagia  | * Definition
* Anatomy of the esophagus
* Physiology of the esophagus
* Clinical presentation
* Investigation
* Modality of treatment.
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# Updates and Advances in General Surgery:

Students are involved in all of the hospital’s teaching activities including attending morning reports, Journal Clubs, lectures, seminars and Rounds. Updates on guidelines, Case study discussions and other advances in Surgery and its subspecialties are usually a part of the Morning report, Journal Clubs and Mid-day activities. Students are involved in carrying out presentations in selected topics and cases nominated by their teaching physicians.

* **Topics Covered in Clerkships:**

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| WEEK 1 | Good History taking |
| General Examination |
| Informed Consent  |
| Communication skills |
| WEEK 2 | Abdominal examination  |
| Approach to the management of patients with Acute abdominal pain |
| Approach to the management of patients with Jaundice |
| WEEK 3 | Abdominal examination with digital rectal examination  |
| Approach to the management of patients with perianal conditions |
| Approach to the management of patients with gastrointestinal bleeding/ melena/ hematemesis |
| WEEK 4 | Lumps examination |
| Approach to the management of patients with abdominal mass |
| Approach to the management of patients with GIT tumors |
| WEEK 5  | Ulcer examination  |
| Approach to the preoperative preparation for an elective major abdominal surgery |
| Surgical complications |
| WEEK 6 | Neck examination including thyroid |
| Approach to the management of Neck mass |
|  | Approach to solitary thyroid nodule |
| WEEK 7 | Breast, Chest and axilla examination |
| Approach to the management of patients with breast lump/ pain/ nipple discharge |
| Breast cancer |
| WEEK 8  | HERNIA EXAMINATION  |
|  | Approach to groin lumpApproach to dysphagia |
| WEEK 9 | Approach to the management of patients with Poly trauma (to focus on abdominal and thoracic injuries) |
| IV fluids  |
| Approach to the management of patients with sepsis |
| UROLOGY | Scrotum and genitalia examination |
| Approach to the management of patients with scrotal swelling |
| Approach to the management of patients with Hematuria |
| Urology trauma |
| VASCULAR  | Vascular examination and limbs |
| Approach to the management of patients with Limb pain /swelling (Focus on limb ischemia, DVT, edema and cellulitis) |
| Vascular surgery principles and aneurysms |

# Assessment

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| **Exam Format** | **Note** | **Weight (%)** |
| OSCE-exam | Practical exams done after the end of the clerkship on real patients to evaluate the medical knowledge of students, ability to take medical history, clinical skills and communication with patients. It includes 5-6 stations each of 7 minutes’ duration. 1-2 of these stations are dry in which students answer cases-questions based on their knowledge in X-Ray, photo sessions and other related basic imaging and tests. | 40% |
| Written exam | An exam done at the end of the academic year to evaluate the medical knowledge. Moreover, these exams are provided from the National Board of Medical Examiners (NBME) in USA which is an independent, not-for-profit organization that serves the public through its high- quality assessments of healthcare professionals. | 40% |
| Evaluation  | Evaluation during rotation which depends on: daily attendance of morning report, educational rounds, clinical skills, basic medical procedures, group discussions, seminars, lectures attendance, student attitude and respect for patients and team. | 20% |
| Written cases and Log book | Students are required to write 10 full cases that includes History, Vital sings, Physical examination, Labs, Imaging and Differential diagnosis. A Log book which is provided to students at the beginning of their clerkship which contains the basic and required skills and procedures for their level should be filled and handed by the end of the clerkship. |
| Total |  | 100% |

# Student Evaluation Form During Clerkships

# Important Dates

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| * **At the end of the Academic year: OSCE Exam**
* **At the end of the Academic year: Written Exam**
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# Teaching and Learning Methods

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| **Tools** |
| 1. Lectures.
2. Small-group teaching.
3. Problem-based or case-based learning.
4. Peer assisted learning.
5. Bed-side teaching.
6. Clinical demonstrations.
7. Field exercises in the community.
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# Course **Policies**

* Students should attend all the activities mentioned above during this clerkship every day, and do the required on-calls.
* The maximum allowed absence is 10% of the clerkship’s duration and this only in case of an accepted situation evaluated by the Department of Medicine.
* Students are not allowed to have even a single day off without an accepted reason evaluated by the department of medicine. In that case, 2 points of the clerkship total will be subtracted and this will be added to the student file record.