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Orthopedics and Traumatology, Surgical Emergencies ILOs

(7225502)

**Monday 25 November 2019**

AN-NAJAH NATIONAL UNIVERSITY

DEPARTMENT OF MEDICINE

# Course Outline

* **Course Details**

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| Course Title | Orthopedics and traumatology, surgical emergencies & Emergency medicine |
| Course Number | 7225502 |
| Prerequisite(s) | Passing these 4th year subjects: Internal Medicine Jr., Surgery Jr., Obstetrics and Gynecology Jr.. |
| Course Type: | Compulsory |
| Credit Hours | 8 |

* **Class Details**

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| Weeks | 8 weeks |
| Time | 5 days/ week 8:00 am- 2:00 pm and 4 (2-hour) Lectures/ week. |
| Location | An-Najah National University Hospital and Ministry of Health Hospitals affiliated to An-Najah National University in the northern of West Bank |

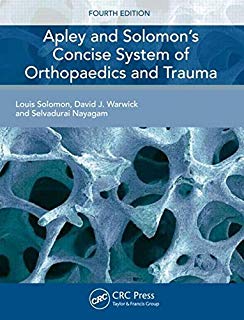
* **Course Description and Objectives**

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| This course is designed to give students of the fifth-year the basic clinical knowledge in Orthopedics and traumatology (4weeks), surgical emergencies (3weeks) and Neurosurgery (1week); and later on Emergency Medicine. This course aims to teach students how to take orthopedic history and perform physical examination of the muscular-skeletal system. Students are also expected to learn how to diagnose and treat common adult and pediatric traumatic and orthopedic problems as well as how to deal with emergencies and conditions that need neurosurgical intervention. |

# Textbook(s) and References

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| Textbook(s) |
| * 1. Apley's orthopedics concise 3ed edition   2. Toronto Notes for Neurosurgery   3. Toronto Notes for Emergency Medicine |
| References |
| * **Published scientific papers.** |

# Textbook Cover



# Topics and Teaching Methods:

**Orthopedics: ( 4 weeks, 4 credit hours, 200 working hours)**

This is a four week clinical rotation for fifth year medical students during which the students will be introduced to general orthopedic disorders. Students at the end of the course are expected to have covered all aspects regarding assessing fractures, general management and complications of fractures, evaluation and assessment of orthopedic disorders affecting bone and joints are also covered.

Students are trained to obtain relevant history and to perform physical examination of patients with common musculoskeletal disorders. General management of common orthopedic problems is also covered. Throughout the course, students will be involved in the daily morning report, clinical rounds, outpatient clinics and interactive

seminars.

Course contents and lecture’s topics:

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|  | Title |  |
| 1 | DIAGNOSIS IN ORTHOPAEDICS | ■ **History**  ■ **Examination**  ■ **Examining Infants and Children**  ■ **Common Clinical Problems**  ■ **Diagnostic Imaging**  ■ **Bone Biopsy**  ■ **Electrodiagnosis** |
| 2 | INFECTION | ■ **Acute Haematogenous Osteomyelitis**  ■ **Subacute Haematogenous Osteomyelitis**  ■ **Chronic Osteomyelitis**  ■ **Post-Traumatic and Postoperative**  **Osteomyelitis**  ■ **Acute Suppurative Arthritis**  ■ **Septic Bursitis**  ■ **Tuberculosis** |
| 3 | RHEUMATIC DISORDERS | ■ **Rheumatoid Arthritis**  ■ **Ankylosing Spondylitis**  ■ **Seronegative Spondarthritis**  ■ **Juvenile Chronic Arthritis (Still’s Disease)**  ■ **The Systemic Connective Tissue Diseases**  ■ **Fibromyalgia** |
| 4 | GOUT AND PSEUDOGOUT | ■ **Gout**  ■ **Calcium Pyrophosphate Dihydrate**  **Deposition Disease**  ■ **Calcium Hydroxyapatite Deposition Disorders** |
| 5 | OSTEOARTHRITIS AND RELATED  DISORDERS | ■ **Osteoarthritis**  ■ **Neuropathic Arthritis (Charcot’s Disease)**  ■ **Haemophilic Arthropathy** |
| 6 | OSTEONECROSIS AND  OSTEOCHONDRITIS | ■ **Osteonecrosis (Avascular Necrosis)**  ■ **Osteochondritis (Osteochondrosis)** |
| 7 | TUMOURS | ■ **Diagnosis**  ■ **Principles of Treatment**  ■ **Benign Bone Lesions**  ■ **Primary Malignant Bone Tumours**  ■ **Multiple Myeloma**  ■ **Metastatic Bone Disease** |
| 8 | PRINCIPLES OF OPERATIVE TREATMENT | ■ **Preoperative Preparation**  ■ **Operations on Bones**  ■ **Operations on Joints**  ■ **Microsurgery**  ■ **Amputations**  ■ **General Postoperative Complications**  ■ **Physical Therapy**  ■ **Functional Aids and Appliances**  ■ **Complementary and Alternative**  **Treatment** |
| 9 | THE SHOULDER | ■ **Clinical Assessment**  ■ **Disorders of the Rotator Cuff**  ■ **Chronic Instability of the Shoulder**  ■ **Disorders of the Glenohumeral Joint**  ■ **Disorders of the Scapula and Clavicle** |
| 10 | THE ELBOW | ■ **Elbow deformities**  ■ **Olecranon Bursitis**  ■ **‘Tennis Elbow’ and ‘Golfer’s Elbow’** |
| 11 | THE WRIST & HAND | ■ **Wrist Deformities**  ■ **Tenosynovitis and Tenovaginitis**  ■ **Ganglion**  ■ **Carpal Tunnel Syndrome**  ■ **Rheumatoid Arthritis**  ■ **Osteoarthritis**  ■ **Acute Infections of the Hand** |
| 12 | VERTEBRAL COLUMN | ■ **Acute Intervertebral Disc Prolapse**  ■ **Chronic Disc Degeneration (Cervical**  **Spondylosis)**  ■ **Deformities of vertebral column ( Scoliosis and kyphosis)**  ■ **Scheuermann’s Disease (Adolescent**  **Kyphosis)**  ■ **Ankylosing Spondylitis**  **(Spondyloarthropathy)**  ■ **Intervertebral Disc Lesions**  ■ **Spondylolisthesis**  ■ **Spinal Stenosis** |
| 13 | THE HIP | ■ **Clinical Assessment**  ■ **Development Dysplasia of the Hip**  ■ **Acetabular Dysplasia and Subluxation of the Hip**  ■ **Acquired Dislocation of the Hip**  ■ **Protrusio Acetabuli**  ■ **Coxa Vara**  ■ **Femoral Anteversion (In-Toe Gait)**  ■ **Perthes’ Disease (Coxa Plana)**  ■ **Slipped Upper Femoral Epiphysis**  ■ **Osteoarthritis** |
| 14 | THE KNEE | ■ **Clinical Assessment**  ■ **Bow-Legs (Genu Varum) and**  **Knock-Knees (Genu Valgum)**  ■ **Lesions of the Menisci**  ■ **Osteochondritis Dissecans**  ■ **Loose Bodies**  ■ **Osteoarthritis**  ■ **Patellofemoral Disorders**  ■ **Osgood–Schlatter’s Disease**  ■ Approach to **Swellings Around the Knee** |
| 15 | THE ANKLE AND FOOT | ■ **Clinical Assessment**  ■ **Deformities of the Foot**  ■ **Congenital Talipes Equinovarus**  **(Idiopathic Club-Foot)**  ■ **Flat Foot**  ■ **Pes Cavus**  ■ **Hallux Valgus**  ■ **Hallux Rigidus**  ■ **Osteoarthritis**  ■ **Gout**  ■ **Disorders of the Tendo Achillis**  ■ **The Diabetic Foot 250**  ■ **Approach to** **Painful Ankle**  ■ **Toenail Disorders** |
| 16 | FRACTURES AND JOINT INJURIES | ■ **Pathology of Fractures**  ■ **Clinical Features**  ■ **Fractures in Children**  ■ **Stress Fractures and Insufficiency Fractures**  ■ **Pathological Fractures**  ■ **Joint Injuries** |
| 17 | FRACTURES – PRINCIPLES OF  TREATMENT and COMPLICATIONS | ■ **Closed Fractures**  ■ **Open Fractures**  ■ **Early and late complications** |
| 18 | INJURIES OF UPPER LIMB and THEIR MANAGEMENT | ■ **Fractures of the Clavicle**  ■ **Sternoclavicular Dislocation**  ■ **Dislocation of the Shoulder**  ■ **Fractures of the Proximal Humerus**  ■ **Fractures of the Shaft of the Humerus**  ■ **Dislocation of the Elbow**  ■ **Isolated Dislocation of the Radial Head**  ■ **Fractures of the Olecranon Process**  ■ **Fractures of the Radius and Ulna**  ■ **Fracture of a Single Forearm Bone**  ■ **Monteggia Fracture–Dislocation of the Ulna**  ■ **Galeazzi Fracture–Dislocation of the Radius**  ■ **Colles’ Fracture**  ■ **Smith’s Fracture**  ■ **Fracture of the Radial Styloid Process**  ■ **Fracture–Subluxation of the Wrist (Barton’s Fracture)**  ■ **Hand Injuries** |
| 19 | INJURIES OF THE SPINE | ■ **Principles of Diagnosis and**  **Management**  ■ **Cervical Spine Injuries**  ■ **Thoracic Spine Injuries**  ■ **Thoracolumbar and Lumbar Injuries** |
| 20 | INJURIES OF LOWER LIMB and THEIR MANAGEMENT | ■ **Dislocation of the Hip**  ■ **Fracture of the Femoral Neck**  ■ **Intertrochanteric Fractures**  ■ **Subtrochanteric Fractures**  ■ **Femoral Shaft Fractures**  ■ **Supracondylar Fractures of the Femur**  ■ **Condylar Fractures**  ■ **Tibial Plateau Fractures**  ■ **Fractured Patella**  ■ **Dislocation of the Patella**  ■ **Acute Knee Ligament Injuries**  ■ **Dislocation of the Knee**  ■ **Fractures of the Tibia and Fibula**  ■ **Ankle Ligament Injuries**  ■ **Fracture of the Ankle**  ■ **Injuries of the Hindfoot**  ■ **Mid-Tarsal Injuries**  ■ **Metatarsal Fractures**  ■ **Fractures Toes** |

**Traumatology and surgical emergencies (3 weeks, 3 credit hours, 150 working hours)**

This three-week course introduces the knowledge and skills required to evaluate and stabilize the trauma patient. It addresses the critical time management of these patients. This is accomplished through instruction and hands-on sessions focusing on rapid assessment and emergency care interventions in the emergency department. This course also emphasize on the ability of the students for critical decision making for trauma patients, the importance of team working and the rapid assessment and evaluation of traumatic cases including the maintenance of life support and hemodynamic stability. Students are also introduced to the principles of Disaster Medicine.

**Neurosurgery (1 week, 1 credit hour, 50 working hours)**

This course aims to introduce the students to general neurosurgical disorders. Students have the opportunity to evaluate patients with conditions that require neurosurgical intervention and learn about the emergencies in this field; what they are, how to spot them and differentiate between them and how to manage them.

This course consists of experiences in patient care (history taking and physical examination), group discussions and reviewing common findings in images like CT and MRI that pertain to this field.

Objectives to achieve:

• The ability to obtain and report a basic neurologic patient history for common neurologic conditions and injuries.

• The ability to perform and report a basic neurologic physical examination.

• Demonstrate and understanding of the basic science, physiology, pathophysiology, pathology, and natural history of common neurologic conditions and injuries.

• The ability to develop a working differential diagnosis for common neurologic conditions and injuries and to demonstrate an understanding of the appropriate timing and use of common diagnostic testing modalities to assist with determining a definitive diagnosis.

• Knowledge of appropriate available treatment alternatives, focusing on operative measures for common neurologic conditions and injuries.

• Knowledge of possible preventative measures to avoid common neurologic conditions and injuries.

Course content:

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| 1 | Neuroanatomy | Overview of the CNS and PNS anatomy |
| 2 | Head trauma | 1. Concussion 2. Contusion 3. Diffuse axonal injury 4. Hematomas |
| 3 | Intracranial bleeding and aneurysms | With focus on spontaneous subarachnoid hemorrhage |
| 4 | Hydrocephalus | 1. Types 2. Pathophysiology 3. Clinical manifestations 4. Management |
| 5 | Spine degenerative diseases and Cauda equina | 1. Herniated Discs 2. Spinal Stenosis 3. Degenerative Disc Disease 4. Cauda equina |
| 6 | Congenital anomalies of the CNS | 1. Spina bifida 2. Arnold-Chiari malformation |
| 7 | High intracranial pressure | With focus on pseudotumor cerebri |
| 8 | Benign Brain tumor | With focus on meningiomas and pituitary adenomas |

**Emergency medicine** **(4 weeks, 4 credit hours, 200 working hours)**

This four-week rotation introduces the students to the principles of acute care medicine. Students have the opportunity to evaluate patients as well as formulate effective testing and treatment strategies. Active participation in patient care and procedural skills are emphasized. The course consists of experiences in patient care, assigned readings from emergency medicine references, lectures and seminars. Students will learn to conduct thorough but directed histories and physicals as well as to formulate a plan for workup and care for each patient they see. Medical skills & Procedures (such as CPR, LP, Thoracentesis, Paracentesis etc.) are taught and supervised on a case-by-case base as needed, depending on the patient’s complaints and need for evaluation. All students are expected to introduce themselves as student physicians and to conduct themselves in a professional manner.

Objectives to achieve:

1. Introduction:

* Cardiopulmonary resuscitation
* ABCs: Securing the airway, breathing and circulation
* Resuscitation and emergency procedures
* Ultrasound and other diagnostic in emergency medicine

2. The patient with chest pain, dyspnea or hemoptysis

* + Acute Myocardial infarction
  + Respiratory emergencies, acute breathlessness
  + Acute pulmonary edema
  + Pulmonary embolism and venous thrombosis.
  + Clinical Electrocardiology and arrhythmia management

3. Shock

4. Trauma and poly-Trauma: How to act, what to do…

5. Aortic and vascular emergencies : Aortic aneurysm, Dissection and limb ischemia  
6. Urological emergencies: Kidney stones….

7. Burns

8. Pain control and analgesia  
9. Neurology: Stroke, epilepsy and loss of consciousness  
10. Approach to acute abdominal pain.   
11. Poisoning, overdosage and alcohol  
12. Electrical injuries  
13. Hypothermia, hyperthermia

**Assessment:**

**Orthopedics and traumatology, surgical emergencies:**

**The practical section’s assessment: (20% Orthopedics, 15% surgical emergencies, 5% neurosurgery)**

**The written section’s assessment: (65% Orthopedics, 20% surgical emergencies, 15% neurosurgery) with a total of 100 marks that is then converted to 60**

# Updates and Advances in Orthopedics and emergency medicine:

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 Orthopedics and trauma management 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.

# Integration with Health system and Community

There is a valued focus on the most common diseases in the Palestinian community which includes head trauma, DDH and fractures. This is more obvious in morning reports, journal clubs and mid-day activities. Students are also in courage to do volunteer in emergency departments across the west bank.

# Assessment

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| **Exam Format** | **Note** | **Weight (%)** |
| OSCE-exam  Evaluation | Oral exams carried out after the end of the clerkship to evaluate the medical knowledge of students and their ability to take psychiatric history. Also, students answer questions based on clinical scenarios to assess how they approach a case and evaluate their ability to read X-Rays, and other related basic imaging and tests.  Evaluation during rotation which depends on: daily attendance of morning report, educational rounds, clinical skills, basic procedures like PIP, group discussions, seminars, lectures attendance, student attitude and respect for patients and team. | 40% |
| Written exam | An exam, in the form of MCQs, done at the end of the academic year to evaluate the medical knowledge. The exam questions are provided by the instructors of the course. | 60% |
| Total |  | 100% |

# Student Evaluation Form During Clerkships

# Important Dates

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| * **At the end of the Clerkship: OSCE Exam** * **At the end of the Academic year: Written Exam** |

# 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. |

# Course **Policies**

* Students should attend all the activities mentioned above during this clerkship every day.
* 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.