

# UG CURRICULUM FOR ORTHOPAEDICS UNIVERSITY OF DELHI

## OBJECTIVES OF THE COURSE:

At the end of the program, student should acquire the following:

1. Diagnose the common musculo-skeletal disease process from history, clinical examinations, interpretation of diagnostic tests and formulate a management path
2. Basic care of the injured patients in the emergency, triage, resuscitation, application of common splints and immobilization of spine, wound care etc.

## CLINICAL POSTING:

**5<sup>th</sup> semester: 4 weeks**

**6<sup>th</sup> semester: 4 weeks**

**9<sup>th</sup> semester: 2 weeks**

The students posted for clinical postings in orthopaedics shall be divided into groups to attend the following:

1. **Ward round:** students should be present in the ward rounds taken by faculty members and participate in the discussion about the admitted patients. They are expected to learn use of various splints, tractions and other appliances used for patient care.
2. **OPD:** students are expected to see common orthopaedic cases coming to OPD and learn clinical examination to make provisional diagnosis and formulate a management plan. The faculty and senior residents are expected to teach the same to the students.
3. **Emergency:** Students are expected to attend and learn the basics of resuscitation, triage, management of polytrauma and multiple injured patients and splintage techniques for different fractures in emergency/casualty.
4. **Clinical case presentation:** Students are expected to present at least one clinical case every day to faculty or senior resident. The discussion should emphasize on history taking, clinical examination and planning out management.
5. **Class:** classes should be arranged to cover various parts of orthopaedics which is not covered in routine theory classes; for ex: instruments and implants, orthoses and prostheses, orthopaedic radiology, pathological specimens etc. Students are also expected to attend departmental academic activities (PG class, case conference etc).
6. **Rehabilitation and physiotherapy:** students should have basic exposure to methods of rehabilitation and physiotherapy

## LOG BOOK:

Students are required to make a log book and maintain the records of clinical postings on day to day basis. The log book should be submitted for verification to the faculty taking assessment.

### Proforma of log book:

PERSONAL DETAILS	
Name:	
Roll no:	
Posting details: 5 <sup>th</sup> semester: from: To: 6 <sup>th</sup> semester: from: To: 9 <sup>th</sup> semester: from: To:	
Score in internal assessments: 5 <sup>th</sup> semester: 6 <sup>th</sup> semester: 9 <sup>th</sup> semester:	
Attendance: 5 <sup>th</sup> semester: 6 <sup>th</sup> semester: 9 <sup>th</sup> semester:	
Signature of faculty at assessment: 5 <sup>th</sup> semester: 6 <sup>th</sup> semester: 9 <sup>th</sup> semester:	

CLINICAL CASE PRESENTATION					
Sl no	Date	Pts name, age, sex, OPD/CR no	Diagnosis	Remarks	Signature of faculty/SR

CLASS			
Sl no	Date	Topic	Signature of faculty / SR

OPD / EMERGENCY CASES SEEN					
Sl no	Date	Pts name, age, sex, OPD/CR no	Diagnosis	Remarks	Signature of faculty / SR

## ASSESSMENT:

### Internal assessment:

At the end of every clinical posting, students should undergo an assessment as per the following:

1. **Attendance:** at least 75% attendance is required in clinical postings
2. **OSCE based examination:** An OSCE based examination ( at least 10 spots with 3 questions on each, total of 30 marks) has to be conducted by the department at the end of the posting
3. **Viva:** A viva of 20 marks which should include ward round, instruments, X-rays, bones, specimens, orthoses and prostheses etc.

**Final assessment:**

**Theory:** In the 3<sup>rd</sup> professional (part II) examination, the General Surgery Paper I, section – 2 is dedicated to Orthopaedics (60 marks).

**Practical:** It should comprise of 1 short case and table viva.(25% of total marks)

**Internal assessment:** To be derived from previous scores in examination (25% of total marks)

**SYLLABUS:**

**A brief history of orthopaedics**

**Making diagnosis:**

- Clinical Examination
- Imaging: X-ray, computed tomography and magnetic resonance imaging related to orthopaedics.
- Hematology related to orthopaedics
- Tissue diagnosis: bone, synovial fluid
- Electrodiagnosis

**Principles of orthopaedic treatment:**

- Nonoperative treatment, common splints and traction
- Operative treatment, principles of external and internal fixation
- Arthroscopy, image guided surgery, computer assisted surgery

**Infections:**

- Acute, Subacute and Chronic pyogenic osteomyelitis
- Septic arthritis
- Osteoarticular tuberculosis with special emphasis on spine, hip and knee

**Non-infective joint disorders:**

- Osteoarthritis
- Rheumatoid arthritis
- Ankylosing spondylitis
- psoriatic arthritis, Reiter's arthritis
- Gout
- sero-negative spondyloarthropathy

**Bone metabolism:**

- Rickets, osteomalacia, and osteoporosis
- Paget's disease
- Osteogenesis imperfecta

**Bone tumors:**

- Establishing a diagnosis
- Principles of treatment of primary bone malignancy
- Common bone tumors: osteochondroma, aneurysmal bone cyst, fibrous dysplasia, giant cell tumor, osteosarcoma, Ewing's sarcoma, chondrosarcoma
- Metastatic bone tumors

**Non traumatic disorders****Upper limb:**

- Frozen shoulder
- Painful arc syndrome
- Tennis elbow, golfer's elbow
- Dorsal wrist ganglion
- DeQuervian tenosynovitis
- Dupuytren's contracture,
- Trigger finger

**Spine:**

- Torticollis
- Cervical spondylosis
- Spondylolysis, spondylolisthesis
- Prolapsed intervertebral disc, spinal canal stenosis

**Lower limb:**

- Perthes' disease
- Slipped upper femoral epiphysis
- Avascular necrosis of hip
- Briefly avascular necrosis at other sites
- Recurrent & habitual dislocation of patella
- Heel pain, plantar fasciitis
- Flat foot
- Osteochondritis

**Congenital anomalies:**

*Must know:*

Idiopathic clubfoot, Developmental dysplasia of hip

*Desirable to know:*

Coxa vara, Rocker bottom foot, Sprengel shoulder

## **Deformities:**

*Must know:*

Genu valgum, genu varum, cubitus valgus, cubitus varus, Post-poliomyelitis residual palsy.

*Desirable to know;*

Cerebral palsy, spina bifida, Arthrogyrosis multiplex congenita

## **Implants:**

- External fixation- AO type fixators, Ilizarov external fixator
- Internal fixation- plating, nailing, screws
- Replacement- Hip- Hemi and total joint prosthesis

## **Trauma**

### **Fractures:**

*Must know:*

- Definition, classification, principles of diagnosis and treatment
- Complication- early and late, compartment syndrome, fat embolism,
- Special features of fractures in children with physal injuries
- Classification of open fractures and its management
- Pathological fracture, stress fracture

### **Joint injuries:**

*Must know:*

- Salient features of normal joint anatomy, pathology of dislocation and subluxation, common dislocations and principles of treatment.
- Management of intra-articular fractures and ligament injuries

### **Healing of fractures**

*Must know:*

Mechanism and types of healing, factors affecting healing, causes of delayed union and non-union and principle of their management

### **Management of critically injured (polytrauma patient)**

## **Spine**

*Must know:*

Types of spinal injuries and their presentation, diagnosis and management in emergency, Various definitive treatment modalities of traumatic paraplegia and quadriplegia.

*Desirable to know:*

Pathoanatomy and rehabilitation of traumatic paraplegia and quadriplegia.

## **Shoulder and arm:**

*Must know:*

Management of simple fractures like fracture clavicle, greater, lesser tuberosities, surgical neck of humerus, shaft of humerus; diagnosis and management of dislocation shoulder: acute and recurrent

*Desirable to know:*  
Rotator cuff injuries

**Elbow:**

*Must know:*

Classification of various injuries around elbow, principles of management of various injuries like supracondylar fracture, fracture lateral condyle, medial condyle, dislocation elbow, fracture olecranon, fracture neck and head of radius

*Desirable to know:*

Intercondylar fracture of humerus, side sweep injury

**Forearm:**

*Must know:*

Principles of management, complication of Monteggia fracture dislocation, fracture of shafts of radius and ulna, Galeazzi fracture dislocation,

*Desirable to know:*

Management of complications of above fractures

**Wrist and hand:**

*Must know:*

Classification and principles of management of distal radius fractures, scaphoid fractures, principles of management of short tubular bones of hand.

*Desirable to know:*

Treatment of non-union of fracture scaphoid, methods of operative treatment of above fractures, treatment of complications of above fractures including malunion distal radius fracture,

**Pelvis, hip and thigh:**

*Must know:*

Classification and principles of management of fractures of pelvis, dislocations of hip, fracture neck of femur, trochanteric fractures, fractures of shaft of femur, supracondylar fractures

*Desirable to know:*

Complication of these fractures and their management

**Injuries around knee:**

*Must know:*

Classification and principles of management and complications of fracture patella, fractures of tibial condyle

*Desirable to know*

Cruciate ligament injuries, meniscal injuries

**Leg:**

*Must know:*

Classification and principles of management and complications of fractures of tibia and fibula including compound fractures

*Desirable to know:*

Operative management of above fractures

**Foot and ankle:**

*Must know:*

Classification, principles of management and complications of fractures of ankle, talus and calcaneum

*Desirable to know:*

Operative treatment of above fractures, principles of management of fractures of short tubular bones of foot, Lisfranc's injury

**Nerve injuries:**

*Must know:*

Clinical features and principles of management of nerve injuries, including radial, median and ulnar nerve.

*Desirable to know:*

Principles of management of brachial plexus injury, sciatic nerve injury and common peroneal nerve injury,

**Amputations:**

*Must know:*

Indications and principles of amputations, transtibial, transfemoral, transhumeral, below elbow amputations, Syme's amputation

*Desirable:* prosthetic management of amputations