



Ref. Letter No. ELMC/Ortho/2025/

27/01/2025

To,
The HoD
Department of Medical Education
Era University,
Lucknow

Syllabus

Curriculum for M.S Orthopaedics

1st Semester

Course Contents:

- ✚ Anatomy and function of joints
- ✚ Bone structure and function
- ✚ Growth factors and fracture healing
- ✚ Cartilage structure and function
- ✚ Structure and function of muscles and tendons
- ✚ Tendon structure and function
- ✚ Metallurgy in Orthopaedics
- ✚ Stem Cells in Orthopaedic Surgery
- ✚ Gene Therapy in Orthopaedics
- ✚ Triage, Disaster Management, BTLS and ATLS
- ✚ Diagnostic Imaging in Orthopaedics
- ✚ Digital Subtraction Angiography (DSA)
- ✚ MRI and CT in Orthopaedics
- ✚ Musculoskeletal USG
- ✚ PET Scan
- ✚ Radio-isotope bone scans

2nd Semester

- ✚ Bone and joint brucellosis
- ✚ AIDS and the Orthopaedic Surgeon (universal precautions)
- ✚ Musculoskeletal Manifestations of AIDS
- ✚ Pott's spine
- ✚ Tubercular synovitis and arthritis of all major joints
- ✚ Shock
- ✚ Crush syndrome
- ✚ Disseminated Intravascular Coagulation (DIC)
- ✚ Acute Respiratory Distress Syndrome (ARDS)
- ✚ Bone grafting and bone graft substitutes
- ✚ Open fractures and soft tissue coverage in the lower extremity
- ✚ Compartment syndrome
- ✚ Sterilization
- ✚ Theatre Discipline
- ✚ Laminar air flow
- ✚ Modular OTs
- ✚

3rd Semester

- ✚ Metabolic Bone Diseases
- ✚ Rickets and Osteomalacia
- ✚ Osteoporosis
- ✚ Scurvy
- ✚ Mucopolysaccharoidoses
- ✚ Fluorosis
- ✚ Osteopetrosis
- ✚ Hyperparathyroidism
- ✚ Gigantism, Acromegaly
- ✚ Traumatic
- ✚ Entrapment Neuropathies
- ✚ Amputations and disarticulations in the lower limb
- ✚ Amputations and disarticulations in the elbow
- ✚ Conditions of Adults and Children
- ✚ The spine
- ✚ The shoulder
- ✚ The elbow
- ✚ The hand
- ✚ The wrist
- ✚ The hip
- ✚ The knee
- ✚ The foot and ankle
- ✚ The pelvis

4th Semester

- ✚ General considerations
- ✚ Polio Lower limb and spine
- ✚ Management of Post-Polio Residual Palsy (PPRP)
- ✚ Osteoarthritis
- ✚ Calcium Pyrophosphate Dihydrate (CPPD), Gout
- ✚ Collagen diseases
- ✚ Benign bone tumors
- ✚ Malignant bone tumors
- ✚ Tumor like conditions
- ✚ Metastatic bone Tumors
- ✚ Peripheral vascular disease
- ✚ Orthopaedic manifestations of bleeding disorders
- ✚ Definitions, types, grades, patterns and complications
- ✚ Pathology of fractures and fracture healing
- ✚ Clinical and Radiological features of fractures and dislocations
- ✚ General principles of fracture treatment
- ✚ Recent advances in internal fixation of fractures
- ✚ Locking plate osteosyntheses
- ✚ Less Invasive Stabilisation System (LISS)
- ✚ Ilizarov technique

5th Semester

- ✚ Cerebral Palsy
- ✚ Myopathies
- ✚ Fractures of the upper extremity and shoulder girdle
- ✚ Fractures of the lower extremity
- ✚ Fractures of the hip and pelvis
- ✚ Malunited fractures
- ✚ Delayed union and non-union of fractures
- ✚ Ankle injuries

- ✚ Shoulder and elbow injuries
- ✚ Wrist and hand injuries
- ✚ Fractures and dislocations in children
- ✚ Perthes' disease
- ✚ Slipped capital femoral epiphysis
- ✚ Congenital Dislocation of Hip
- ✚ Prolapsed Inter Vertebral Disc (PIVD)
- ✚ Lumbar Canal Stenosis (LCS)
- ✚ Spondylolysis/Spondylolisthesis
- ✚ Lumbar Spondylosis
- ✚ Ankylosing Spondylitis
- ✚ Spinal fusion: various types and their indications.
- ✚ Autologous chondrocyte implantation
- ✚ Mosaicplasty
- ✚ Video assisted Thoracoscopy (VATS)
- ✚ Endoscopic spine surgery
- ✚ Metal on metal arthroplasty of hip
- ✚ Surface replacements of joints
- ✚ Microsurgical techniques in Orthopaedics
- ✚ Designing a modern orthopaedic operation theatre

6th Semester

- ✚ Orthopaedic metallurgy
- ✚ Bio-degradable implants in Orthopaedics
- ✚ Bone substitutes
- ✚ Bone Banking
- ✚ Arthrodesis of lower extremity and hip
- ✚ Arthrodesis of upper extremity
- ✚ Arthrodesis of spine
- ✚ Biomechanics of joints and replacement of the following joints.
- ✚ Knee Ankle
- ✚ Shoulder
- ✚ Elbow
- ✚ General principles of Arthroscopy
- ✚ Arthroscopy of knee and ankle
- ✚ Arthroscopy of shoulder and elbow