

**SYLLABUS FOR Ph.D IN ORTHOPAEDICS**

<b>1.</b>	Knowledge of historical aspect of Orthopaedics and basic Orthopaedics principles. Use of tractions, splints and plaster of Paris, outline of the common traumatic and orthopaedic conditions such as Colles fracture, etc.
<b>2.</b>	Knowledge of : 1)Plaster technique and traction application 2)Principles of the operating room, asepsis and sterilization 3) Preoperative evaluation and preparation of a patient for surgery, post-operative care and management of complications.
<b>3.</b>	Knowledge of wound healing and repair, fracture healing including bone grafting and skin grafts.
<b>4.</b>	Knowledge of common cardiovascular and respiratory involvement related to Orthopaedics including heart failure, hemorrhages and shock, respiratory normal function and failures.
<b>5.</b>	Understand normal gastrointestinal function and nutritional requirement and support.
<b>6.</b>	Knowledge of normal renal function, renal failure, hemodynamic and musculoskeletal effect of normal and chronic renal failure.
<b>7.</b>	Knowledge of abnormal respiratory function of blood, blood coagulation and blood transfusion.
<b>8.</b>	Knowledge of normal pharmacological action of drugs commonly used in Orthopaedics (antibiotics, tumor chemotherapy, analgesics, sedatives, neurotropic drugs and commonly used drugs in Anaesthesia, cardiovascular and respiratory diseases and head injuries.
<b>9.</b>	Initial knowledge of major and multisystem trauma(treatment priorities, systemic effects, pattern of injury, major bleeding) and assessment of management of major multiple extremity injuries and head injuries
<b>10.</b>	Application of the plaster casts and recognition of complications and Application of various tractions and their maintenance. Initiation to simple manipulative reductions.
<b>11.</b>	Knowledge of skigrams and interpretation. Study of common musculoskeletal exposures and their trials on cadavers
<b>12.</b>	Knowledge of microscopic and macroscopic pathology of common orthopaedic conditions and the microbiology related to bacterial slides, cultures etc. and use of antibiotics.

<b>13.</b>	Knowledge of various types and manifestations of shock and its correlation to diagnose shock and treat surgical conditions causing it
<b>14.</b>	Justify basics of nutrition and its role in critical care management
<b>15.</b>	Knowledge of various Consents and Pre-operative work up protocols
<b>16.</b>	Knowledge of Basic life support and ATLS
<b>17.</b>	Knowledge of Skin coverage and release of contracture
<b>18.</b>	Knowledge of nerve and tendon suturing
<b>19.</b>	Knowledge of endocrine especially parathyroid abnormal function.
<b>20.</b>	Knowledge of pathological mechanism in inflammation, infection, and neoplasia related to musculoskeletal system.
<b>21.</b>	Knowledge of normal pharmacological action of drugs commonly used in Orthopaedics (antibiotics, tumor chemotherapy, analgesics, sedatives, neurotropic drugs and commonly used drugs in anesthesia, cardiovascular and respiratory diseases and head injuries.
<b>22.</b>	Definition, classification, biomechanics of injury, principles of management, definite conservative and surgical management of fractures of upper extremities.
<b>23.</b>	Surgical management of complex fracture healing, radiological examination, factors affecting fracture healing and assessment of delayed union, nonunion including compound fractures.
<b>24.</b>	Knowledge of complications related to fractures. (Nerve injury, muscle tendon ligament injury, fat embolism syndrome, DVT and pathological fractures.
<b>25.</b>	Knowledge of Joint injuries, including traumatic, congenital and acquired dislocations of joints.

26.	Knowledge of Trauma to spine and pelvis(spine general, cervical spine, thoracic and lumbar, pelvic general and acetabulum)
27.	Knowledge of Regional involvement in fractures and dislocations- upper extremity(hand, wrist, forearm, arm, shoulder and clavicle) lower extremity(hip, femur ,knee, ankle and foot including pediatric trauma, epiphyseal injuries and pathological fractures)
28.	Knowledge of amputation, prosthetics and orthotics
29.	Knowledge of general involvement of tendon, ligaments, muscles and sports injuries and congenital anomalies.
30.	Knowledge of orthopaedic diseases and disorders region wise including central and peripheral nervous system(cerebral palsy, spinal dysraphism , poliomyelitis ,peripheral nerve injuries and neurofibromatosis),vascular affection, joint affection, Neoplastic conditions, infections etc.
31.	Knowledge of Immunological function and diseases of musculoskeletal system related to abnormal immune function, rejection and immunological factors related to bone and joint transplantation.
32.	Description of common inheritance musculoskeletal diseases.
33.	Knowledge of Embryology, gross and microscopic anatomy. (Normal and distorted anatomy in orthopaedic disorders.)
34.	Knowledge of biomechanics including material properties and materials used in Orthopaedics.
35.	Knowledge of sports injuries & examination.
36.	Knowledge of orthopaedic paediatric disorders including metabolic and endocrine disorders, circulatory (osteonecrosis, sickle cell disease, tumours, infections, arthritis, osteomyelitis), tumours and tumour like conditions.
37.	Knowledge of recent advances in musculoskeletal disorders with emphasis on implants, sports injuries, robotic surgery, Osteobiologics.
38.	Knowledge of minimally invasive surgeries, non-invasive techniques and other special techniques.

<b>39.</b>	Knowledge of Geriatric Orthopaedics.
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