PACIFIC MEDICAL UNIVERSITY, UDAIPUR

Ph.D. Entrance Syllabus – Orthopedics

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Basic Sciences Related to Orthopaedics

- Anatomy and **biomechanics** of bones and joints
- Bone physiology, **mineralization**, and growth
- Fracture healing and **bone repair mechanisms**
- Fundamentals of **biomechanics in musculoskeletal system**

Trauma and Injury Management

- **Fractures** – classification, principles of management
- **Injuries** to bones, joints, ligaments, and soft tissue
- Trauma care protocols and **recent advances in trauma management**

Diseases & Disorders of the Musculoskeletal System

- **Bone Infections** – pyogenic, tubercular, fungal
- **Arthritis** (various types)
- **Metabolic Bone Diseases**
- Congenital deformities, skeletal dysplasias

Neuromusculoskeletal and Nerve Disorders

- **Orthopaedic neurology**
- Peripheral **nerve injuries** (traumatic & non-traumatic)
- Conditions like **poliomyelitis** and **cerebral palsy**

Tumours and Tumour-like Conditions

- **Primary bone tumours** and **secondary metastatic lesions**
- Tumours of haemopoetic tissues
- Tumours invading bone from adjacent structures

Regional Orthopaedics

Detailed understanding of anatomy, pathology, and surgical considerations for:

- **Spine**
- **Shoulder & Elbow**
- **Hip & Knee**
- **Foot & Ankle**
- **Hand & Wrist**
- **Pelvis**

Surgical & Clinical Topics

- **Operative Orthopaedics** principles
- **Orthotics & rehabilitation**
- **Skin grafting & flap techniques**
- Management of soft-tissue injuries
- Emerging and **recent advances in orthopaedic surgery**