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# MS ORTHOPEDICS CURRICULUM

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AIIMS KALYANI



JANUARY 8, 2024  
ACADEMIC SECTION  
AIIMS Kalyani

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## **Proposal to start MS Courses in Department of Orthopaedics at All India Institute of Medical Sciences, Kalyani, West Bengal, India**

**1) INTRODUCTION:** The first AIIMS was established in 1956 at New Delhi under the All India Institute of Medical Sciences Act, 1956. The act established AIIMS as an autonomous Institute of National Importance (INI) and defined its objectives and functions. By virtue of this Act, the Institute grants its own medical degrees and other academic distinctions, entitling the holders to the same privileges as those attached to the equivalent awards from the recognised Universities of India. Starting from 2006 under the PMSSY initiative till now 22 more AIIMS in 8 Phases across different cities of India have been announced and are in various stages of development and functionality. AIIMS Kalyani was established in 2019 under Phase IV of PMSSY scheme.

The Department of Orthopaedic Surgery came into existence in June 2021 and provides a comprehensive and integrated orthopaedic program for patients, students, residents, and fellows. There are two faculties and one senior resident in the department. Excellence in patient care, research, and education is the overall goal of the Department of Orthopaedics. In addition to general orthopaedics, the department has a faculty which specializes in the field of joint replacement, sports medicine, hand surgery, musculoskeletal oncology, paediatric orthopaedics, spine surgery and treatment of complex trauma. In addition the faculties also have experience in the recent innovations in orthopaedic surgery such as minimally invasive surgeries, surface replacement arthroplasty, revision hip and knee replacements, minimally invasive spine surgery, arthroscopic knee and shoulder surgery.

### **2) ACADEMIC ACTIVITIES:**

- I. Clinical Classes –daily
- II. UG lectures – 2 every alternate week
- III. PG Seminars – Weekly
- IV. Journal Club – Weekly
- V. Institutional activity - Common grand round, Bi-weekly
- VI. Mortality Meet – Once a month
- VII. Ortho-Radiodiagnosis meet – Once a month
- VIII. Ortho-Pathology Meet – Once a month
- IX. Bio statistics classes – As Per Institutional Schedule.

**3) RESEARCH ACTIVITIES:** There are three research project going on in our department of orthopaedics (one funded by ICMR and another two non-funded):

**4) NEED AND SCOPE OF THE COURSE:** At the end of the postgraduate course in Orthopaedics, the student should have acquired the following:

- I. **Cognitive knowledge:** Describe applied anatomy, embryology, physiology, pathology, clinical presentation, diagnostic procedures, possible management options (nonsurgical, surgical, rehabilitative, preventive) pertaining to musculo-skeletal system.
- II. **Clinical decision making ability and expertise for management:** Diagnose the musculo-skeletal disease process from history, clinical examinations, interpretation of diagnostic tests and formulate an individualized management path for the patient and follow the same.
- III. **Patient care Ability:** A postgraduate in orthopaedics surgery at the end of its 3 year course should develop proper clinical acumen to interpret diagnostic results and correlate them with symptoms from history taking and become capable to diagnose the common clinical conditions/ disease in the specialty and to manage them effectively with success without making any serious complications and sincerely to take such accurate decision, for the patient's best interest including making a referral to consultation with a more experienced colleague/professional friend while dealing with any patient with a difficult condition.
- IV. **Teaching Ability:** Acquire ability to teach an MBBS student in simple and straight forward language about the common orthopaedic disorders (etiopathology, clinical presentation, diagnosis, management).
- V. **Research Ability:** He/she should also acquire elementary knowledge about research methodology, including record-keeping methods, and be able to conduct a research inquiry including making a proper analysis. They should develop acumen to write paper for publication in scientific journals and writing a report on its findings.
- VI. **Patient Doctor Relation:** Develop ability to communicate with the patient and the relatives pertaining to the disease, available treatment options, risks and benefits of the treatment and prognosis.
- VII. **Preventive aspects:** Acquire knowledge and pursue the prevention of orthopaedic disorders like osteomalacia, osteoporosis, prevention of development and progression of deformities and the complications thereof following poliomyelitis, cerebral palsy, congenital defects, Pott's spine, tubercular arthritis, rheumatoid arthritis etc.
- VIII. **Follow guidelines:** Should follow hygiene and cleanliness to decrease infection, use proper hospital waste management guidelines, judicious use of available drugs, careful handling of instruments (surgical instruments, arthroscope, microscope, image intensifier etc).
- IX. **Presentation of seminar / paper:** Should develop public speaking ability and should be able to make presentation on orthopaedic disorders/ research topics to fellow colleagues using audio-visual aids in seminar/ conference.
- X. **Team work:** Team spirit should be developed both as a member or leader of the team to work and share responsibility both medical personnel and paramedics (nurses and other staff). He/she should develop general humane approach to patient care with communicating ability with the patient's relatives especially in emergency situation such as in casualty department while dealing with cancer patients and victims of accident. He/she should also maintain human values with ethical consideration.

- XI. **Identification of special interest within the subject:** Identify special area(s) of interest e.g. arthroplasty, arthroscopy, hand surgery, oncology, spine, sports medicine, paediatric orthopaedics etc.

**5) EQUIPMENTS AVAILABLE OR PROPOSED FOR THE DEPARTMENT:**

SN.	Name of Item	Quantity
1	Plaster saw and Equipments	5
2	Orthopaedic Bed with Balkan Frame with traction Attachment	4
3	Orthopedic table with attachments Traction Unit	2
4	Cautery machine with vessel sealing	1
5	Cautery machine	2
6	Suction machine	4
7	C-arm	2
8	Tourniquet	2
9	Battery operated drills	2
10	General orthopedic instruments (Set 1 to 6)	2
11	Arthroscopy System	1
12	Orthopaedic instruments sets for Dressings	1
13	ACL/PCL/Shoulder Surgery Insta set	1
14	Miscellaneous	1

**6) FACILITIES AVAILABLE IN THE DEPARTMENT:**

- a. OPD Consultation services
- b. Indoor admission facilities
- c. Dedicated OTs for Arthroplasty (Joint replacement), Arthroscopy (key hole surgery for joints) and Spine Surgeries.
- d. Trauma care services
- e. Specialised clinics like
  - 1) CTEV Clinic
  - 2) Sports Injury Clinic
  - 3) Spine Clinic
  - 4) Arthritis Clinic

- f. Closed reduction of fractures and Plaster of Paris slab/ cast application
- g. Intra-articular Injections
- h. Minor procedures like suturing of wound, Dressing and others.
- i. Physiotherapy Services
- j. Advanced Research Facilities

## 7) TEACHING FACULTY:

1. **Core faculty:** Dr. Amit Kumar (Associate Professor) and Dr Samrat smrutiranjan sahu (Associate Professor)
2. **Adjunct faculty:** Faculties from major medical & surgical disciplines including super specialty ( General Surgery, Anaesthesiology, Radiology, Neurosurgery, Cardiothoracic & Vascular surgery, Physical Medicine and Rehabilitation, Pathology)

## 8) OTHER SUPPORTING STAFF:

1. Senior Residents – 3
2. Non-Academic Junior Resident – 3
3. Nursing staff – 11
4. Hospital attendant- 1
5. Office attendant- 1
6. Data entry operator-1

## 9) DETAILED CURRICULUM:

### I. PROPOSAL DETAILS:

The postgraduate candidate will work as full-time resident for the department. Individual and collective responsibilities will be assigned to the candidates in teaching and participating in all routine activities in the department. The year wise learning skill for the Postgraduate student will be as follows.

#### **Residency Year One**

The first year of residency includes acclimatization with the working culture of the hospital, interdepartmental procedures, understanding and learning the ward- work, management of emergencies in patients admitted in the ward like post-operative complications etc.

#### **Skills / Procedures – 1) Venous Access**

- 3) Indwelling Urinary bladder catheterization
- 5) Plaster slab/cast application
- 7) Skin traction application
- 9) Wound dressing
- 11) External fixator application
- 13) Bone graft harvesting
- 15) Tension band wiring
- 17) Malleolar fixation

#### **2) Nasogastric tube insertion**

- 4) Splinting
- 6) Fracture manipulation
- 8) Skeletal traction application
- 10) Debridements
- 12) Amputations
- 14) Closed/open K wire fixation
- 16) Forearm/ Humerus plating
- 18) Split thickness Skin Grafting.

#### **Residency Year Two**

The goal of the second year is for residents to gain experience in the outpatient and

In patients emphasizes acquiring basic psychomotor technical skills as well as teaching the fundamental principles of orthopaedic surgery, anatomy, and surgical dissection.

**Skills / Procedures –**

1) Closed K wire fixation	2) Tension band wiring	
3) Forearm plating	4) Humerus plating	5) Interlocking nail
6) Malleolar fixation	7) Arthrodesis	8) Tendon repair
9) Exposure to hip	10) Curettage and bone grafting	
11) Ilizarov fixator application	12) Dynamic Hip screw	
13) Fixation of Periarticular fractures	14) Hemireplacement Arthroplasty	
15) Spine exposure (Posterior and Anterior)	16) Local flaps	
17) Pedicle screw fixation (Lumbar spine)	18) Tendon transfer	
19) Approaches to Acetabulum		

### **Residency Year Three**

At this point in the program, the resident should have gained sufficient knowledge and experience to more actively direct the care of patients. On some rotations the resident will be directly responsible to a fellow or to the attending faculty. Extensive experience in both inpatient and outpatient care continues at this level, as well as increasing experience in the operating room. Cases increase in number and in complexity during this year, providing the resident with the background necessary to enter the senior resident years.

**Skills / Procedures –**

1) Dynamic Hip screw	2) Fixation of Periarticular fractures	
3) Hemireplacement Arthroplasty	4) Spine exposure (Posterior and Anterior)	
5) Approaches to the acetabulum	6) Local flaps	7) PMSTR
8) Pedicle screw fixation (Lumbar spine)	9) Tendon transfer	
10) Arthroscopic Meniscectomy	11) Discectomy	
12) Pedicle screw fixation (Thoracic spine)	13) Open reduction of DDH	

## **II. ELIGIBILITY CRITERIA FOR ADMISSION/ENTRANCE EXAM:**

Admission will be taken according to the admission/entrance procedure as applicable for all AIIMS/AIIMS-like institutions.

**III. NO. OF CANDIDATES PER BATCH:** 2 per batch

**IV. DURATION OF COURSE:** 3 Years

## **V. SYLLABUS:**

### **Paper 1: Basic Sciences and related Orthopaedics**

- Development of skeleton & mineralization of bone
- Soft tissue anatomy, histology, physiology, injury and repair: meniscus, articular cartilage, muscle, tendon, ligament, nerve
- Bone: histology & histopathology of bone, physiology of fracture healing, delayed and non-union of bones, biophysical properties of bone, bone grafting, bone graft extenders and substitutes
- Pathological tests for orthopaedic disorders, tissue diagnosis, synovial fluid analysis, molecular diagnostic methods

- Imaging: application of USG, CT scan, MRI, nuclear medicine in orthopaedics
- Ethics in orthopaedics, evidence based practice, outcome assessment, use of biostatistics
- Clinical examination: hip, spine, knee, shoulder, elbow, wrist and hand, ankle and foot, deformity, neurological examination
- Orthosis for orthopaedic disorders, Surgical approaches

## **Paper 2: Principles & Practice of Orthopaedic diseases & Operative Orthopaedics**

### **Infections:**

- Pyogenic – osteomyelitis- acute and chronic, septic arthritis, infection in presence of implant and prosthesis
- Tuberculosis – spine, hip, knee and other sites, medical, non-operative and operative treatment, paraplegia care with care of bladder, late onset paraplegia;
- Syphilis, mycotic infections, salmonella & brucella osteomyelitis,
- Transient Synovitis, conditions that mimic osteomyelitis

### **Metabolic bone disorders:**

- Calcium, phosphate and vitamin D metabolism
- Rickets, Osteomalacia, renal bone disease, hyperparathyroidism
- Osteoporosis, Osteopetrosis, Paget's disease

### **Musculoskeletal oncology:**

- Evaluation and staging, Benign and malignant bone and soft tissue tumors
- Principles of surgical treatment, options of limb salvage surgery, Chemotherapy and radiotherapy, Metastatic bone disease- diagnosis

### **Arthritis:**

- Osteoarthritis, Rheumatoid arthritis, Ankylosing spondylitis, Sero-negative spondyloarthropathy, Crystal arthropathy- gout and pseudogout, Neuropathic joints, Traumatic arthritis

### **Pediatric Orthopaedics:**

- Congenital and developmental disorders: Congenital talipes equino varus, congenital vertical talus, developmental dysplasia of hip, coxavara, sprenkel's shoulder, torticollis, Madelung deformity, Pseudoarthrosis of tibia & clavicle, congenital deficiency of limbs
- Connective tissue: osteogenesis imperfecta, Marfan syndrome, Ehler Danlos syndrome
- Genetic : Neurofibromatosis, skeletal dysplasias, Duchene's muscular dystrophy
- Neuromuscular disorders: Cerebral palsy, myelomeningocele, post-polio residual deformity, diagnosis and treatment especially deformity correction
- Perthes' disease, slipped capital femoral epiphysis, Osteochondritis at various sites
- Angular and rotational deformities of lower limb and deformity correction
- Juvenile rheumatoid arthritis. Hemophilic arthropathy

### **Nontraumatic disorders:**

- Muscle contractures: quadriceps, deltoid, gluteus maximus



- Snapping syndromes: hip, knee, scapula, shoulder
- Tendinitis and bursitis, Synovitis and synovectomy
- Avascular necrosis of femoral head: etiopathology, diagnosis, management
- Transient osteoporosis of hip, protrusion acetabuli

### **Spine:**

- Biomechanics of spine
- Fractures and dislocations of spine, non-operative and operative treatment
- Various spinal instrumentations
- Management of Pott's spine, Paraplegia care, bladder rehabilitation
- Congenital anomalies of upper cervical spine, Klippel- Feil syndrome
- Scoliosis: Congenital, Idiopathic (infantile, juvenile, adolescent), neuromuscular
- Scheuermann disease, Spondylolysis, Spondylolisthesis
- Low back pain, prolapsed intervertebral disc, Degenerative cervical and lumbar spine, lumbar canal stenosis
- Spine in ankylosing spondylitis and rheumatoid arthritis
- Tumors of the spine- primary and metastatic

### **Hand:**

- Flexor and extensor tendon injuries, Fracture and dislocation in hand
- Diagnosis and management of peripheral nerve injuries
- Reconstruction of upper limb in nerve injuries: brachial plexus, radial, ulnar and median nerves
- Injuries of wrist: scaphoid fracture and Nonunion, perilunar instability
- Disorders of wrist: Keinbock's disease, DRUJ reconstruction, arthritic wrist
- Volkmann Ischemic contracture, Carpal tunnel syndrome and other compression neuropathies, Dupuytren's disease
- Tenosynovitis, DeQuervian disease, trigger finger
- Hand infections
- Tumor and tumor like conditions of hand, Congenital hand anomalies

### **Foot and ankle:**

- Fractures of calcaneus, talus, Lisfranc's and Chopart's fracture dislocations, metatarsal fractures
- Management of sciatic and peroneal nerve injury
- Flat foot, Pescaus, Tarsal coalition, Hallux valgus and other hallux disorders
- Claw toe, hammer toe, mallet toe, bunion, bunionette
- Diabetic foot and other neuropathic foot disorders
- Tarsal tunnel syndrome, Morton's metatarsalgia, Painful heel, plantar fasciitis
- Tendonitis: Tendoachilles, Tibialis anterior and posterior

### **Joint reconstruction:**

- Osteotomies around hip and knee

- Arthrodesis: shoulder, hip, knee, elbow, wrist, ankle, subtalar; indications and technique
- Arthroplasty: bearing surfaces, total hip & knee replacement, basics of replacement of other joints, partial joint replacement, surface replacement, basics to complications and treatment of arthroplasty
- Arthroscopic techniques for various joint conditions

### **Paper 3: Traumatology and its related aspects**

- Polytrauma and multiply injured patient care, ATLS principles
- Basic splintage and transportation techniques
- Complications of fracture: especially compartment syndrome, fat embolism, crush syndrome, neurovascular injury, myositis ossificans, reflex sympathetic dystrophy
- Principles of closed treatment of fractures
- Principles of fracture fixation – external and internal; implants, instruments and prosthesis, plating and nailing
- Open fracture management, common flaps in open tibial fractures
- Pathological fractures
- Amputations and prosthetics
- Fractures and dislocations in children: physeal injuries, operative principles in children, fractures around elbow: supracondylar, medial and lateral condyle capitellum; pulled elbow, forearm and distal radius fractures, fracture of neck, shaft and distal femur, proximal and distal tibial epiphyses
- Fractures in adults: scapulothoracic dissociation, fracture clavicle, fractures of proximal humerus, shaft and distal humerus, Monteggia and Galeazzi fractures, fractures of capitellum, coronoid, olecranon, radial head, forearm, distal radius, scaphoid, metacarpal and phalanges, fracture of neck, intertrochanteric, subtrochanteric, shaft and distal femur, fracture patella, fracture of tibial plateau, shaft and pilon.
- Pelvic, acetabular and sacral fractures
- Management of malunion (especially cubitus varus and valgus, neglected Monteggia injury, distal radius) and nonunion (especially infected nonunion)
- Management of acute dislocation and fracture dislocations: sternoclavicular and acromioclavicular joint, shoulder, elbow, terrible triad, radial head, perilunate, sacroiliac, hip, knee, floating knee injury, patella, ankle.
- Management of chronic unreduced dislocations: hip, shoulder, elbow

### **Paper 4: Recent Advances in Orthopaedics & Sports Medicine**

- Principles of arthroscopy
- Shoulder instability: acute, recurrent, surgical stabilization, Rotator cuff tear
- Lateral and medial epicondylitis, elbow injuries
- Ligament and meniscal injuries of knee, diagnosis and management of ACL and PCL deficient knee, Management of osteochondral defects, Recurrent patellar dislocation

- Ankle ligament injuries, Tendoachiles rupture, quadriceps tendon rupture, rupture of muscles, Stress fracture
- Basics of microsurgery
- Biomaterials in orthopaedics
- Advanced Prosthetics
- Minimal access surgery, computer assisted surgery
- Robotic Surgeries

## **VI. RECOMMENDED BOOKS AND JOURNALS:**

### **BOOKS:-**

1. Outlines of Fractures by Crawford Adams
2. Closed Treatment of Fractures by H. John Charnley
3. Apley's system of orthopaedics and fractures by Louis Solomon
4. Rockwood & Green's Fractures In adults by Charles M Court-Brown
5. Williams Rockwood & Green's Fractures in Children by John M Flynn
6. Campbell's Operative Orthopaedics by A H Crenshaw
7. Tuberculosis of the Osteoarticular system by Dr S M Tuli
8. AO manual by AAOS
9. Turek's Orthopaedics Principles and Their Applications
10. Surgical exposures in orthopaedics by Stanley Hoppenfield
11. Traction and orthopaedic appliances by John D M Stewarts
12. Practical fracture treatment by Ronald McRae
13. Clinical orthopaedic examination by Ronald McRae
14. Clinical Orthopaedics by Sureshwar Pandey
15. Tachdjian's Pediatric Orthopaedics by John Herring
16. Orthopaedics Extensive Exposure by A K Henry
17. Insall and Scott surgery of the knee by W Norman Scott
18. Tumours and Tumourous Conditions of Bone and Joints by Jaffe
19. Green's Operative Hand Surgery by Wolfe , Hotchkiss

### **JOURNALS:-**

1. Journal Bone & Joint Surgery – American
2. Journal Bone & Joint Surgery – British
3. Journal of American academy of Orthopaedics
4. American Journal of Sports Medicine
5. British Journal of Sports Medicine
6. Journal of Orthopaedic Trauma
7. The Journal of Arthroplasty
8. Journal of the American Academy of Orthopaedic Surgeons
9. Orthopaedic Clinics of North America.
10. Clinical Orthopaedics & Related Research
11. Journal of Arthroscopy and Related Surgery
12. Indian Journal of Orthopaedics
13. International Orthopaedics

14. The Spine Journal
15. European Spine Journal
16. Hand Clinics
17. Rheumatology Clinics

## **VII. TEACHING AND LEARNING METHODOLOGY:**

- ❖ Tutorials
- ❖ Seminar
- ❖ Journal Club
- ❖ Case presentation
- ❖ Case Conference / Difficult case
- ❖ Surgical – Pathological – Radiological Conference
- ❖ Mortality and Complication Meet
- ❖ Combined Round/Grand Round
- ❖ Post Emergency Day Round
- ❖ Clinical teaching / Bedside Teaching
- ❖ Participation in different skill courses and workshops

## **VIII. THESIS:**

The candidate will have to compulsorily undertake dissertation/thesis during the course. The work will be done independently by the candidate under the guidance of a faculty who will act as his/her thesis guide. The postgraduate candidate will be assigned a thesis guide and will have to submit a research protocol within 6 months of joining the course. The guide will facilitate the orientation of the candidate with the curriculum and encourage his/her interest in the subject. The guide will be responsible for training and carrying out dissertation work to be done by the candidate. A 6 monthly evaluation of thesis progress will be presented by the candidate. The completed thesis should be submitted 6 months before the completion of the course and will be sent to external experts for evaluation.

## **IX. STUDENT LOGBOOKS:**

The student should maintain a log book during his/ her training indicating duration of postings, work done in wards, OPDs, operation theatres and emergencies. It should be maintained on daily basis and should be verified by the senior resident or faculty. At the end of tenure it should be signed by the Head of Department. It should indicate –

- ❖ Emergency and Routine Surgeries and procedures assisted and performed
- ❖ Closed treatment of fracture and dislocations
- ❖ Teaching programs (seminar, journal club etc) attended and presented.
- ❖ Clinical case presentation / case conference
- ❖ Meeting/conference/cme/ course attended
- ❖ Paper/poster presented/published

## **X. TRAINING SCHEDULE:**

S N.	Rotation to specialty / Name of service	Duration
1.	Orientation Programme (First Year)	6 months

2.	OPD	As per schedule
3.	Operation Theatre	As per schedule
4.	Emergency Duty (24 hrs)	As per schedule
5.	Ward duty	As per schedule

**First six months** in orientation programme including exposure to casualty. Learns bedside history taking in ward, OT exposures, care of indoor patients and learn techniques of traction, wound care and splintage.

#### **Next two and half years**

- Assists ward rounds and visit other wards with senior colleagues to attend call/consultations from other department.
- Participates in the teaching sessions in ward for bedside clinical in the weekly afternoon seminar/ journal club.
- Attends orthopaedics OPD 3 day a week
- Attends operation room/theatre 3 days a week
- Attend 2 morning rounds/ week
- Care of the indoor patients on beds allotted to him/her.
- Attends the weekly Journal Club and seminar and presents the same by rotation
- Attends spine, CTEV, arthritis and, arthroscopy clinics and presents cases participates in discussions including therapy-planning etc.
- Does 24 hours-emergency duty once a week/ as per roster of the department.
- Attends/participate/present papers in state/zonal national conferences.
- Actively participate/help in organization of departmental workshop, courses in specialized areas like Arthroplasty, Arthroscopy, Spine, Hand surgery etc.
- Problem oriented record keeping including use of computer
- Use of medical literature search including through Internet use, in the library.
- Research Report – writing including preparation of Protocol for Research/Thesis.

**XI. COURSE ASSESSMENT PATTERN:** All the PG residents are assessed periodically for their academic and clinical activities. Regular monitoring would be done to assess medical knowledge, patient care, procedural & academic skills, interpersonal skills,

professionalism, self-directed learning and ability to practice in the system. The assessment is valid, objective, and reliable. It covers cognitive, psychomotor and affective domains. The Marks allotted are as follows: **Total 1000 Marks**

1. Theory paper – 4 papers (4x100) = 400 Marks)
2. Practical – 400 Marks
3. Internal Assessment – 100 Marks

### 1. THEORY EXAMINATION (Total = 400 Marks)

#### Four Papers of 100 Marks each

<b>Paper 1:</b> Basic Sciences and related Orthopaedics	100
<b>Paper 2:</b> Principles & Practice of Orthopaedic diseases & Operative Orthopaedics	100
<b>Paper 3:</b> Traumatology and its related aspects	100
<b>Paper 4:</b> Recent Advances in Orthopaedics	100

### 2. PRACTICAL & VIVA VOCE EXAMINATION (Total = 400 Marks)

#### a) Cases – 300 Marks:

Long case – One – 150×1	150 Marks
Short cases – Three – 50×3	150 Marks

#### b) Oral/ Viva – 100 Marks:

Pathology specimens & X-Rays	25 Marks
Bones	25 Marks
Implants & Instruments	25 Marks
Orthosis & Prosthesis	25 Marks

### 3. INTERNAL ASSESSMENT - 100 MARKS (to be added to Practical)

The performance of the Postgraduate student during the training period shall be monitored throughout the course and duly recorded in the log books as evidence of the ability and daily work of the student. Marks shall be allotted out of 100 as follows.

SN.	Assessment	Marks
<b>1</b>	<b>Personal Attributes</b> (Behavior and Emotional Stability, Motivation and Initiative, Honesty and Integrity, Interpersonal Skills and Leadership Quality)	20
<b>2</b>	<b>Clinical Work</b> (Availability, Diligence, Academic ability, Clinical Performance)	20
<b>3</b>	<b>Academic activities</b> (Performance during presentation at Journal club / Seminar / Case discussion / BioStatistics meeting and other academic sessions.)	20
<b>4</b>	<b>End of term theory examination</b> (Conducted at end of 1 <sup>st</sup> year, 2 <sup>nd</sup> year and after 2 years 9 months)	20
<b>5</b>	<b>End of term practical examination</b>	20

	(Conducted after 2 years 9 months)	
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The pass percentage will be 50%. Candidate will have to pass theory and practical examinations separately.

## 10) VOLUME AND SPECTRUM OF WORKLOAD

Facilities	Work load per year		
	2021	2022	2023 till 22 <sup>nd</sup> Feb
<b>OPD</b>	4833	32000	5206
<b>Telemedicine</b>	42	25	04
<b>Plaster Room</b>	03	213	61
<b>Injection Room (Arthrocentesis)</b>	00	37	07
<b>Procedure Room (Dressing and suture removal)</b>	00	44	64
<b>IPD</b>		25	25
<b>Elective OT</b>	—	12	19
<b>Emergency OT</b>	—	—	-