The Draft CBME Curriculum for PG Clinical is being Circulated for Comments and Suggestions. The Suggestions are to be sent to RGUHS by mail to dcd.rguhs@gmail.com and copy to be mailed to Chairman BOS PG Clinical ravikdoc@gmail.com

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Competency based curriculum M. S. Orthopaedics

PREAMBLE

The purpose of PG education is to create specialists who would provide high quality health care and advance the cause of science through research & training. A postgraduate undergoing training MS in Orthopaedics should be trained to identify and recognize various congenital, developmental, inflammatory, infective, traumatic, metabolic, neuromuscular, degenerative and oncologic disorders of the musculoskeletal systems. She/he should be able to provide competent professional services to trauma and orthopaedic patients at a primary/ secondary/tertiary healthcare centers. The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment. This document was prepared by various subject-content specialists. The Reconciliation Board of Academic Committee has attempted to render uniformity without compromise to purpose and content of the document. Compromise in purity of syntax has been made in order to preserve the purpose and content. This has necessitated retention of "domains of learning" under the heading "competencies".

SUBJECT SPECIFIC LEARNING OBJECTIVES

This will be dealt with under the following headings:

- Theoretical knowledge (Cognitive domain)
- Practical and clinical skills (psychomotor domain)
- Attitudes including communication skills (Affective domain)
- Writing thesis / Reviewing Research activities (Scholarly activity)
- Training in Research Methodology (Practice based learning, Evidence based practice)
- Professionalism
- Teaching skills

SUBJECT SPECIFIC COMPETENCIES

A. COGNITIVE DOMAIN

At the end of the M.S. Orthopaedics programme, the post graduate student should be able to:

1. Demonstrate sufficient understanding of the basic sciences relevant to orthopaedic speciality through a problem-based approach.
2. Describe the Principles of injury, its mechanism and mode, its clinical presentation, plan and interpret the appropriate investigations, and institute the management of musculoskeletally injured patient.
3. Identify and describe the surface anatomy and relationships within of the various bones, joints, ligaments, major arteries, veins and nerves of the musculoskeletal system of the spine, upper limb, lower limb and the pelvis, chest, abdomen and head &neck.
4. Define and describe the pathophysiology of shock (circulatory failure).
5. Define and describe the pathophysiology of respiratory failure.
6. Describe the principles and stages of bone and soft tissue healing.
7. Understand and describe the metabolic, nutritional, endocrine, social impacts of trauma and critical illness.

8. Enumerate, classify and describe the various bony/soft tissue injuries affecting the axial and appendicular skeletal system in adults and children.

9. Describe the principles of internal and external fixation for stabilization of bone and joint injuries.

10. Describe the mechanism of homeostasis, fibrinolysis and methods to control hemorrhage

11. Describe the physiological coagulation cascade and its abnormalities

12. Describe the pharmacokinetics and dynamics of drug metabolism and excretion of analgesics, anti-inflammatory agents, antibiotics, disease modifying agents and chemotherapeutic agents.

13. Understanding of biostatistics and research methodology

14. Describe the clinical presentation, plan and interpret investigations, institute management and prevention of the following disease conditions

    a. Nutritional deficiency diseases affecting the bones and joints

    b. Deposition arthropathies

    c. Endocrine abnormalities of the musculoskeletal system

    d. Metabolic abnormalities of the musculoskeletal system

    e. Congenital anomalies of the musculoskeletal system

    f. Developmental skeletal disorder of the musculoskeletal system

15. Describe the pathogenesis, clinical features plan and interpret investigations and institute the management in adults and children in

    a. Tubercular infections of bone and joints (musculoskeletal system)

    b. Pyogenic infections of musculoskeletal system

    c. Mycotic infections of musculoskeletal system

    d. Autoimmune disorders of the musculoskeletal system

    e. Rheumatoid arthropathy, Ankylosing spondylitis, seronegative arthropathy

    f. Osteoarthrosis and spondylosis

16. Describe the pathogenesis, clinical presentation, plan and interpret investigations and institute appropriate treatment in the following conditions:

    a. Post polio residual paralysis

    b. Cerebral palsy

    c. Muscular dystrophies and myopathies

    d. Nerve Injuries

    e. Entrapment neuropathies

17. Identify the diagnosis and describe management of musculoskeletal manifestation of AIDS and HIV infection

18. Describe the a etiopathogenesis, identify, plan and interpret investigations and

institute the management of osteonecrosis of bones.

19. Identify situations requiring rehabilitation services and prescribe suitable orthotic and prosthetic appliances and act as a member of the team providing rehabilitation care

20. Identify a problem, prepare a research protocol, conduct a study, record observations, analyse data, interpret the results, discuss and disseminate the findings.

21. Identify and manage emergency situation in disorders of musculoskeletal system

22. Understanding of the basics of diagnostic imaging in orthopaedics like:

a. Plain-ray

b. Ultrasonography

c. Computerized axial tomography

d. Magnetic resonance imaging

e. PET scan

f. Radio Isotope bones can

g. Digital Subtraction Angiography (DSA)

h. Dual energy x-ray Absorptiometry

i. Arthrography

23. Describe the aetiopathogenesis, clinical presentation, Identification, plan investigation and Institute treatment for oncologic problems of musculoskeletal system both benign and malignancies, primary and secondary.

24. Understand the basics, principles of biomaterials and orthopaedic metallurgy.

25. Describe social, economic, environmental, biological and emotional determinants of health in a given patient with a musculoskeletal problem.

26. Describe the principles of normal and abnormal gait and understand the biomedical principles of posture and replacement surgeries.

B. AFFECTIVE DOMAIN

1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

Attitudes including communication skills and professionalism

a. Communication skills

- Exhibits participation in honest, accurate health related information sharing in a sensitive and suitable manner
- Recognizes that being a good communicator is essential to practice effectively
- Exhibits effective and sensitive listening skills
- Recognize the importance and timing of breaking bad news and knows how to communicate
- Exhibits participation in discussion of emotional issues
- Exhibits leadership in handling complex and advanced communication
- Recognizes the importance of patient confidentiality and the conflict between confidentiality and disclosure
- Able to establish rapport in therapeutic bonding with patients, relatives and other stakeholders through appropriate communication

- Able to obtain comprehensive and relevant history from patients/relatives
- Able to counsel patients on their condition and needs

b. Teamwork

Seek cooperation. Coordination and communication among treating specialties and paramedical staff

c. Counseling of relatives

Regarding patients' condition, seriousness, bereavement and counseling for organ donation in case of brain stem death

d. Leadership

Trauma -prevention, education of the public, paramedical and medical persons.

e. Advocacy

With the government and other agencies towards cause of trauma care

f. Ethics

The Code of Medical Ethics as proposed by Medical Council of India will be learnt and observed.

C. PSYCHOMOTOR DOMAIN

1. At the end of the first year of M.S. Orthopaedics programme, the student should be able to:

1. Elicit a clinical history from a patient, do a physical examination, document in a case record, order appropriate investigations and make a clinical diagnosis
2. Impart wound care where applicable
3. Apply all types of POP casts/slabs, splints and tractions as preened
4. Identify shock and provide resuscitation
5. Perform aspiration of joints and local infiltration of appropriate drugs
6. Perform appropriate wound debridement
7. Perform arthrotomy of knee joint
8. Perform incision and drainage of abscess
9. Perform split thickness skin grafting
10. Performf asciotomies
11. Apply external fixators
12. Apply skeletal tractions including skull tongs
13. Triage a disaster situation and multiple trauma patients in an emergency room
14. Perform on bone models, the interfragmentary compression screws, external fixation, tension band wiring and plating
15. Perform closed reduction of common dislocations like shoulder and common fractures like clavicle fracture, supracondylar fracture.
16. Perform on a cadavers, the standard surgical approaches to the musculoskeletal system

2. At the end of the second year of M.S. Orthopaedics course, the student should be able to:

1. Take an informed consent for standard orthopaedic procedures
2. Perform closed/open biopsies for lesions of bone, joints and soft tissues

3. Perform split thickness skin grafting and local flaps
4. Perform on bone models, internal fixation with k-wires, screws, plates. Dynamic hip/condylar screws/proximal femoral nailing.
5. Perform sequestrectomy and saucerisation
6. Perform arthrotomy of joints like hip/shoulder, ankle, elbow
7. Perform repair of open hand injuries including tendon repair
8. Perform arthrodesis of small joints
9. Perform diagnostic arthroscopy on models and their patients
10. Perform carpal tunnel/tarsal tunnel release
11. Assist application of Illizarov external fixator
12. Assist soft tissue releases in contractures, tendon lengthening and correction of deformities
13. Assist amputations at different levels
14. Assist corrective surgeries for CTEV, DDH, Perthes/ skeletal dysplasia

3. At the end of the third year of M.S. Orthopaedics programme, the student should be able to:

1. Assist in the surgical management of polytrauma patient
2. Assist in arthroplasty surgeries of hip, knee, shoulder and the ankle
3. Assist in spinal decompressions and spinal stabilizations
4. Assist in operative arthroscopy of various joints
5. Assist /perform arthrodesis of major joints like hip, knee, shoulder, elbow
6. Assist in corrective osteotomies around the hip, pelvis, knee, elbow, finger and toes
7. Assist in surgical operations on benign and malignant musculoskeletal tumour including radical excision and custom prosthesis replacement.
8. Assist in open reduction and internal fixations of complex fractures of acetabular, pelvis, IPSI lateral floating knee/elbow injuries, shoulder girdle and hand
9. Assist in spinal deformity corrections
10. Independently perform closed/open reduction and internal fixation with DCP, LCP, intramedullary nailing, LRS
11. Assist in limb lengthening procedures
12. Assist in revision surgeries
13. Provide pre and postoperative care
14. Perform all clinical skills as related to the specialty.

SYLLABUS

Course contents

1. Basic Sciences

- Anatomy and function of joints
- Bone structure and function
- Growth factors and facture 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

2. Diagnostic Imaging in Orthopaedics

(Should know the interpretation and Clinical Correlation of the following): -

- Digital Subtraction Angiography (DSA)
- MRI and CT in Orthopaedics
- Musculoskeletal USG
- PET Scan
- Radio-isotope bone scan

3. Metabolic Bone Diseases

- Rickets and Osteomalacia
- Osteoporosis
- Scurvy
- Mucopolysaccharoidoses
- Fluorosis
- Osteopetrosis

4. Endocrine Disorders

- Hyperparathyroidism
- Gigantism,Acromegaly

5. Bone and Joint Infections

- Hematogenous Osteomyelitis - Acute and Chronic
- Septic arthritis
- Fungal infections

- Miscellaneous infections
- Gonococcal arthritis
- Bone and joint brucellosis
- AIDS and the Orthopaedic Surgeon (universal precautions)

6. Poliomyelitis

- General considerations
- Polio Lower limb and spine

7. Orthopaedic Neurology

- Cerebral Palsy

8. Peripheral Nerve Injuries

- Traumatic

9. Diseases of Joints

- Osteoarthrosis
- Calcium Pyrophosphate Dihydrate (CPPD),Gout

10. Systemic Complications in Orthopaedics

- Shock
- Crush syndrome
- Disseminated Intravascular Coagulation**(**DIC)
- Acute Respiratory Distress Syndrome(ARDS)
- Musculoskeletal Manifestations of AIDS
- Pott's spine
- Tubercular synovitis and arthritis of all major joints

- Management of Post Polio Residual Palsy(PPRP)

- Myopathies

- Entrapment Neuropathies

- Collagen diseases

11. Bone Tumors

- Benign bone tumors
- Malignant bone tumors

12. Miscellaneous Diseases

- Diseases of muscles
- Fibrous Dysplasia
- Unclassified diseases of bone
- Paget's disease
- Tumor like conditions
- Metastatic bone Tumors
- Peripheral vascular disease
- Orthopaedic manifestations of bleeding disorders

13. Regional Orthopaedic Conditions of Adults and Children

- The spine
- The shoulder
- The elbow
- The hand
- The wrist

14. Biomaterials

- Orthopaedic metallurgy
- Bio-degradable implants in Orthopaedics

15. Fracture and Fracture-Dislocations

General considerations

- The hip
- The knee
- The foot and ankle
- The pelvis

- Bone substitutes
- Bone Banking

- 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 Osteosynthesis
- (LISS)- Less Invasive stabilization System
- Illizarov technique
- Bone grafting and bone graft substitutes
- Open fractures and soft tissue coverage in the lower extremity
- Compartment syndrome
- Fractures of the upper extremity and shoulder girdle
- Fractures of the lower extremity
- Fractures of the hip and pelvis
- Malunited fractures
- Delayed union and nonunion of fractures
- Fractures/dislocations and fracture - dislocations of spine

16. Dislocations and Subluxations

- Acute dislocations
- Old unreduced dislocations

17. Traumatic Disorders of Joints (Sports Injuries)

- Ankle injuries
- Knee injuries

18. Arthrodesis

- Arthrodesis of lower extremity and hip

19. Arthroplasty

- Biomechanics of joints and replacement of the following joints.
- Knee

20. Minimally Invasive Surgery (MIS) Arthroscopy

- General principles of Arthroscopy
- Arthroscopy of knee and ankle

21. Amputations and Disarticulations

- Amputations and disarticulations in the lower limb

22. Rehabilitation - Prosthetics and Orthotics

23. Pediatric orthopaedics:

- Fractures and dislocations in children
- Perthes 'disease
- Slipped capital femoral epiphysis

24. Spine

Recurrent dislocations

- Shoulder and elbow injuries
- Wrist and hand injuries
- Arthrodesis of upper extremity
- Arthrodesis of spine
- Ankle
- Shoulder
- Elbow
- Arthroscopy of shoulder and elbow
- Amputations and disarticulations in the upper limb
- Congenital Dislocation of Hip (CDH)
- Neuromuscular disorders

a) **Spinal trauma**: diagnosis and management including various types of fixations

i. Rabilitation of paraplegics/quadriplegics

ii. Management of a paralyzed bladder

iii. Prevention of bed sores and management of established bedsores

iv. Exercise programme and Activities of Daily Living(ADL)

v. Psychosexual counseling

b) Degenerative disorders of the spine

i. Prolapsed Inter Vertebral Disc(PIVD)

ii. Lumbar Canal Stenosis(LCS)

iii. Spondylolysis/Spondylolisthesis

iv. Lumbar Spondylosis

v. Ankylosing Spondylitis

vi. Spinal fusion: various types and their indications.

25. Triage, Disaster Management, BTLS and ATLS

26. Recent advances in orthopaedics

- Autologous chondrocyte implantation
- Mosaic plasty
- 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
- Sterilization
- Theatre Discipline
- Laminar airflow
- Modular OTs

Teaching and learning methods

- Emphasis should be given to various small group teachings rather than didactic lectures.
- **Case presentation: once a week in the ward, in the outpatient department.**
- Seminars / Symposia – **Twice a month**; Theme based student centered
- Journal club/ Review :**Twice a month**
- Academic grand ward rounds: **Twice a month** presentation of cases by residents and clinically applicable discussions.
- **Ortho radiology meets: Once a month discussions** amongst Ortho &Radiology Residents under facilitation of faculty on various imaging modalities used and its interpretation
- **Ortho surgical pathological meet**: Special emphasis on the surgical pathology radiological aspect of the case in the pathology department. Clinician (Ortho resident) presenting the clinical details of the case, radiology PG student describes the radiological findings and its interpretation and pathology PG student describes the morbid anatomy and histopathology of the same case.
- **Skill lab sessions: Once a fortnight** for all three years.
- **Clinical teaching** in the OPD, Emergency room, ICU, OR as per the situation.
- **Mortality & Morbidity meetings with surgical audit: Once a month**
- **Maintenance of log book**: to be signed by the faculty in charge
- The post graduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.
- ***A post graduate student of a postgraduate degree course in broad specialties/super specialties would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the post graduate degree examination.***
- Should have attended two conferences/CMEs/Workshops during his tenure as a postgraduate
- Department should encourage e-learning activities.

ROTATIONS:

1. Clinical postings

A major portion of posting should be in Orthopaedics department. It should include inpatients, Out-patients, ICU, trauma, emergency room and specialty clinics like spine, hand and micro-surgery.

Institutions are required to have such sub speciality clinics with trained faculty.

2. Rotation postings

- o Inter-unit rotation in the department should be done for a period of up to one year.
- o Rotation in appropriate related subspecialties for a total period not exceeding 06months.

3. Clinical meetings:

There should be intra- and inter- departmental meetings for discussing the uncommon

/interesting cases involving multiple departments.

Log book:

- Each student must be asked to present a specified number of cases for clinical discussion, perform procedures/tests/operations/present seminars/review articles from various journals in inter-unit/interdepartmental teaching sessions. They should be entered in a Logbook.
- The Log books shall be checked and assessed periodically by the faculty members imparting the training.

During the training programme, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently; for this purpose, provision of surgical skills laboratories in medical colleges is mandatory.

ASSESSMENT

Assessment should be comprehensive and objective assessing the competencies stated in the course. The assessment is both formative and summate. Formative is spread over the entire duration of the programme and the summative is as per university examination pattern. **Formative assessment:** During the training, Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning and ability to practice in the system.The formative assessment is continuous as well as end-of-term.

The formative assessment is continuous as well as end-of-term. The former is being based on the feedback from the senior residents and the consultants concerned. All the consultants of the unit in which resident is working will give marks based on performance. These marks will be summated over a period of tenure. **End-of-term assessment is held at the end of each semester (up to the 5th semester). Formative assessment will not count towards pass/fail at the end of the program, but will provide feedback to the candidate.**

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

Sr. No.	Items	Marks
1	Personal Attributes	20
2	Clinical Work	20
3	Academic activities	20
4	End of term theory examination	20
5	End of term practical examination	20

1. **Personal attributes**

a. **Behavior and Emotional Stability:** Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.

b. **Motivation and Initiative:** Takes on responsibility, innovative, enterprising, does not shirk duties or leave any work pending.

c. **Honesty and Integrity:** Truthful, admits mistakes, does not cook up information, has ethical conduct, exhibits good moral values, loyal to the institution.

d. **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communication skills.

Clinical work

a) **Availability:** Punctual, available continuously on duty, responds promptly on calls and takes proper permission for leave.

b) **Diligence:** Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical case work up and management

c) **Academic ability:** Intelligent, shows sound knowledge and skills, participates adequately in academic activities, and performs well in oral presentation and departmental tests.

d) **Clinical Performance:** Proficient in clinical presentations and case discussion during rounds and OPD work up. Preparing Documents of the case history/examination and progress notes in the file (daily notes, round discussion, investigations and management) Skill of performing bed side procedures and handling emergencies.

2. Academic Activity

Performance during presentation at journal club/ seminar/ case discussion/inter department meeting and other academic sessions. Proficiency in skills as mentioned in job responsibilities.

3. End of term theory examination conducted at end of 1st, 2nd year and after 2 years 9 months.(three months before the final examination)

4. End of term practical/oral examinations after 2 years 9months. .(three months before the final examination)

a. Marks for **personal attributes** and **clinical work** should be given annually by all the faculty under whom the resident was posted during the year. Average of the three years should be put as the final marks out of 20.

b. Marks for **academic activity** should be given by the all faculty who have attended the session presented by the resident.

c. The internal assessment should be presented to the board of examiners for due consideration at the time of final examinations.

General principles

Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills. The Internal Assessment should be conducted in theory and clinical examination.

Quarterly assessment during the M.S. training should be based on the following academic activities

1. Journal based / recent advances learning
2. Patient based /Laboratory or Skill based learning
3. Self-directed learning and teaching
4. Interdepartmental learning activity
5. External and Outreach Activities /CME

(The student should be assessed periodically as per the categories listed in the postgraduate student appraisal form –Annexure I)

Summative assessment: at the end of the course, Post Graduate Examination

The summative examination would be carried out as per the Rules given in POSTGRADUATEMEDICAL EDUCATION REGULATIONS, 2000.

The postgraduate examination shall be in the following parts: -

1. Thesis

Every post graduate student shall carry out work on an assigned research project under the guidance of a recognized Post Graduate Teacher, the result of which shall be written up and submitted in the form of a Thesis. Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the post graduate student to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature.

Thesis shall be submitted at least six months before the Theory and Clinical / Practical examination. The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination. A post graduate student shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners.

2. Theory:

The examinations shall be organized on the basis of 'Grading 'or 'Marking system' to evaluate and to certify post graduate student's level of knowledge, skill and competence at the end of the training. **Obtaining a minimum of 50% marks in 'Theory' as well as 'Practical' separately shall be mandatory for passing examination as a whole**. The examination for M.D. / MS shall be held at the end of 3rd

academic year. An academic term shall mean six month's training period**.** There shall be four theory papers as follows:

Paper I: Basic Sciences as applied to Orthopaedics

Paper II: Traumatology and Rehabilitation

Paper III: Orthopaedic disease

Paper IV: Recent advances in Orthopaedic surgery + General Surgery as applied to Orthopaedics

3. Practical/clinical

The **practical examination should consist of the following and should be spread over two days**, if the number of post graduate students appearing is more than five.

1. **One long case**: History taking, physical examination, interpretation of clinical findings, differential diagnosis, investigations, prognosis and management.

2. **Short cases from various sections of the specialty (three)**

4. Oral/Viva-voce Examination

- Orthopaedic surgical approaches and orthopaedic pathology
- Orthopaedic instruments and implants
- Orthotics and prosthetics
- Orthopaedic radiology
- Log book

Theory examinations (Total= 400)

Paper	Title	Pattern of question	Marks
Paper 1	Basic Sciences as applied to Orthopaedics	**10 questions, each will carry equal 10 marks**	**100**
Paper 2	Traumatology and Rehabilitation	**10 questions, each will carry equal 10 marks**	**100**
Paper 3	Orthopaedic diseases	**10 questions, each will carry equal 10 marks**	**100**
Paper 4	Recent advances in Orthopaedic surgery + General Surgery as applied to Orthopaedics	**10 questions, each will carry equal 10 marks**	**100**

Practical examination and viva voce (Total=400)

S.NO	CASE		MARKS
1	**Long case**	**= ONE X 150**	**150**
2	**Short cases**	**=THREE X 50**	**150**
3	**Vivavoce**		**100**
	Surgical Anatomy including Osteology	20marks	
	- Instruments	20marks	
	- Radiology	20 marks	
	- Surgical Pathology	20marks	
	- Logbook	20 marks	

Job responsibilities

- Evaluation of patients in emergency, completing the file work and their management including resuscitation, wound cleaning and splintage, history taking and examination of patient admitted to ward, their diagnostic workup, follow up of investigations, making a diagnosis and a treatment plan
- Preparation of OT List
- Pre-operative planning
- Preparation of patients for surgery and post-operative care
- Assisting in operation theatre.
- Daily rounds for evaluation of patients, ordering relevant investigations and following them up, dressing of patients and completing daily progress notes.

  Preparation of discharge slip and advising the patient accordingly Work-up of patients in Out-patient department
- Emergency room duty, ICU duty, ward call duty.

RECOMMENDED READING:

1. Campbell's Operative Orthopaedics, Vols 1,2,3 &4
2. Mercer's Orthopaedic Surgery
3. Rockwood And Greens – Fractures In Adults, Vol 1&2
4. Fractures In Children – Rockwood &Wilkins
5. Physiological Basis Of Medical Practice – Best And Taylor's
6. Arthroscopic Surgery Of The Knee –Johannes
7. Concise System Of Orthopaedics And Fractures – Graham Apley
8. Outline Of Fractures Adams, Hamblen
9. Textbook Of Orthopaedics And Trauma – Kulkarni, Vol1to 4
10. B.D. Chaurasia's Human Anatomy, Vol1,Vol 2, Vol3
11. Pharmacology And Pharmacotherapeutics –Sathoskar
12. Orthopaedics Anatomy And Surgical Approaches FrederickWreckling
13. The Art Of Aesthetic Plastic Surgery – John R Levis, Vol1
14. Current Concepts In Orthopaedics - Dr. D. K.Tareja
15. Custom Mega Prosthesis & Limb Salvage Surgery Dr.Mayilvahanan
16. Advances In Operative Orthopaedics
17. Green's Operative Hand Surgery-Vol. 1&. 2, Green, David P; Hotchkiss, Robert N
18. Tachdjian's Pediatric Orthopaedics-Vol. 1, Vol 2, Vol 3, Herring, John Anthony
19. Surgical Exposures In Orthopedics: The Anatomic Approach, Hoppenfeld, Stanley; De Boer,Piet
20. Adams's Outline of Orthopaedics, Hamblen, David L; Simpson, HamishR
21. Text Book Of Illizarov Surgical Techniques Bone Correction And Lengthening, Golyakhovsky, Vladimir; Frankel, VictorH
22. Current Techniques In Total Knee Arthroplasty, Sawhney GS

23. Applied Orthopaedic Biomechanics, Dutta, Santosh;Datta,Debasis
24. Essential Orthopaedics And Trauma, Dandy, David J; Edwards, DennisJ
25. Adams's Outlines Of Fractures; Including Joint Injuries, Hamblen, David L;Simpson, A Hamish RW
26. Orthopedic Physical Assessment, Magee, David J
27. Turek's Textbook Of Orthopaedics Vol 1 & 2,Turek's
28. Orthopedics Surgical Approach, Miller
29. AO Principles of Fracture Management, AO trauma
30. Clinical Orthopaedic Examination. Ronald McRae
31. Clinical Orthopaedic Diagnosis – Sureshwar Pandey
32. Chapman's Comprehensive Orthopaedic Surgery – Chapman and James 5 volumes
33. Instructional Course Lectures – AAOS
34. A Manual of Clinical Surgery – S Das

JOURNALS

03-05 international Journals and 02 national (all indexed) journals

2. Journal of Bone and Joint Surgery
3. Bone and joint Journal
4. Journal of Orthopaedic Trauma
5. Indian Journal of Orthopaedics
6. Orthopedic Clinics of North America
7. Clinical Orthopedics and Related Research
8. Spine Journal
9. Journal of Paediatric Orthopedics
10. Journal of Arthroplasty

11. Journal of Arthroscopy and Related Surgery

12. Injury – International Journal for the care of the injured

Teaching programs

General principles

Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training is skills oriented. Learning in postgraduate program is essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

Teaching sessions

- Bedside teaching rounds
- Journal club
- Seminar
- PG case discussion
- X – Ray discussion
- Ortho-radio meet
- Ortho-Pathology Meet
- Central session (held in hospital auditorium regarding various topics like CPC, guest lectures, student seminars, grand round, sessions on basic sciences, biostatistics, research methodology, teaching methodology, health economics, medical ethics and legal issues).

Teaching schedule

In addition to bedside teaching rounds, in the department there will be daily hourly sessions of formal teaching per week. The suggested time distribution of each session for department's teaching schedule as follows:

1. Journal club Once a week
2. Seminar Twice a week
3. PG case discussion Twice a week
4. Ortho-radio meet Once a month
5. Ortho-Pathology Meet Once a month
6. Central session As per hospital schedule

Note:

- All sessions are supervised by faculty members. It is mandatory for all residents to attend the sessions except those posted in emergency.
- All the teaching sessions are assessed by the faculty members at the end obsession and marks are given out of 10 and kept in the office for internal assessment.

Annexure I Postgraduate Students Appraisal Form

Pre / Para /Clinical Disciplines Name of the Department/Unit :

Name of the PG Student :

Period of Training : FROM……TO……

Sr. No.	PARTICULARS	Not Satisfactory E, D	Satisfactory C, B	More Than Satisfactory A, A+	Remarks
1	Journal based / recent advances learning				
2	Patient based /Laboratory or Skill based learning				
3	Self-directed learning and teaching				
4	Departmental and interdepartmental learning activity				
5	External and Outreach Activities / CMEs				
6	Thesis / Research work				
7	Log Book maintenance				

Publications: **Yes/ No**

REMARKS*_____

***REMARKS:**

- Any significant positive or negative attributes of a postgraduate student to be mentioned.
- For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.

…… …… ……

SIGNATURE OF ASSESSEE **SIGNATURE OF FACULTY** **SIGNATURE OF HOD**

SENT UP CRITERIA

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

Sr. No.	Items	Marks
1	Personal Attributes	20
2	Clinical Work	20
3	Academic activities	20
4	End of term theory examination	20
5	End of term practical examination	20

MINIMUM OF 75 MARKS WILL BE CUMPULSORY

Post graduate students **appraisal form (annexure-1)** duly signed by HOD Of Department