SRI BALAJI VIDYAPEETH

(Deemed - to be - University u/s 3 of UGC Act, 1956)

Pillaiyarkuppam, Puducherry – 607 402

Mahatma Gandhi Medical College & Research Institute
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COMPETENCY BASED POSTGRADUATE CURRICULUM

M.S. ORTHOPAEDICS

2021

Preface

The promulgation of the much-awaited Competency Based Medical Education (CBME) for post graduate programs by the National Medical Council is a welcome move. Sri Balaji Vidyapeeth (SBV), Puducherry, deemed to be University, declared u/s 3 of the UGC Act. and accredited by the NAAC with A grade, takes immense privilege in preparing such an unique document in a comprehensive manner and most importantly the onus is on the Indian setting for the first time, with regard to the competency based medical education for post graduate programs that are being offered in the broad specialty departments. SBV is committed to making cardinal contributions that would be realised by exploring newer vistas. Thus, post graduate medical education in the country could be made to scale greater heights and SBV is poised to show the way in this direction.

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Preface

The salient feature of this document is defining the program educational objectives (PEO) for its postgraduate program as a whole, defining program outcomes (PO) based on the competencies to be practiced by the specialist, course outcomes (CO) and program specific sub-competencies and their progression in the form of milestones. The compilation of the milestone description leads to the formation of the required syllabus. This allows the mentors to monitor the progress in sub-competency milestone levels. It also defines milestone in five levels, for each sub-competency. Although NMC has described three domains of competencies, the domain 'Attitude' is elaborated into 4 more competencies for ease of assessment. The six competency model (ACGME) for residency education: Medical Knowledge, Patient Care, Practice Based Learning and Improvement, Systems Based Practice, Professionalism, Inter personal and Communication Skills gives better clarity and in-depth explanation and is used in this document. The sub-competency and their milestone levels are mapped into the entrustable professional activities(EPA) that are specific to the individual postgraduate program. While doing all this, the syllabus prescribed by NMC is fully incorporated into the curriculum. To make the program more relevant, PEO, PO, CO and EPAs are mapped with each other. EPAs which are activity based are used for formative assessment and graded. EPA assessment is based on workplace based assessment (WPBA), multisource feedback (MSF) and eportfolio. A great emphasis is given on monitoring the progress in acquisition of knowledge, skill and attitude through various appraisal forms including e-portfolios during three years of residency period.

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Foreword

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This document named postgraduate curriculum for the **MS OB&GY** has been prepared in the accordance with the document notified by Board of Governors in suppression of MCI https://www.mciindia.org/CMS/information-desk/for-colleges/pg-curricula-2. This document has been prepared by the Department of **Orthopaedics** of MGMCRI, Puducherry and SSSMCRI, Chennai ratified by the Board of Studies on dd.mm.yyyy and approved by Academic Council of Sri Balaji Vidyapeeth, a deemed to be university, accredited 'A' Grade by NAAC on dd.mm.yyyy .

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List of Abbreviations and Acronyms

PEO - Programme Education Outcome

PO - Programme Outcome

CO - Course Outcome

MK - Medical Knowledge

PC/PS - Patient Care / Procedural skill

IPCS - Interpersonal Communication Skills

P - Professionalism

PBLI - Practice Based Learning and Implementation

SBPI - System Based Practice and Implementation

DCO - Damage Control Orthopaedics

ETC - Early Total Care

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Sri Balaji University
Department of Orthopaedics
Post- Graduate Program

1. Preamble

The competency based curriculum should take into account the needs of the society, both local and global. It needs to outline the demand for the present day as well as future. The curriculum needs to be reviewed at least every five years to address the trending needs, as new knowledge is evolving and communication of the same is seamless. Accordingly the competencies need to meet the societal needs detailing the cognitive, psychomotor and affective domain development for attaining these competencies.

The curriculum indicates to the candidate the knowledge, basic skills and attitudes required to become an Orthopaedic Surgeon. It disciplines the thinking habits for problem solving and discovery of new knowledge in the field of Orthopaedics. It defines the Teaching - Learning methods adopted for the resident to achieve and the methods of assessment performed throughout the training period and at the completion of training. The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment.

2. Program Educational Objectives (PEO)

Programme Educational Objectives are broad statements that describe what graduates are expected to attain within few years of completing their programme. These are based on the needs of the society as analysed and outlined by the regulatory body. So as defined by National Medical

Commission (NMC), the PEO for MS Orthopaedics are as follows:

PEO1: Specialist who can provide comprehensive care related to Orthopaedics over and above the physician of first contact.

PEO2: Leader and team member who understands health care system and acts to provide safe patient care with accountability and responsibility.

PEO3: Communicator possessing adequate communication skill to convey required information in an appropriate manner in various health care setting.

PEO4: Lifelong learner keen on updating oneself regarding the advancement in the health care field and able to perform the role of researcher and teacher

PEO5: Professional who understands and follows the principle of bio-ethics / ethics related to health care system.

3. Program Outcome (PO):

PO's represent broad statements that incorporate many areas of inter - related knowledge and skills developed over the duration of the programme through a wide range of courses and experiences. They represent the big picture and describe broad aspects of knowledge, skill and attitude development. They encompass multiple learning experiences. After a period of 3 years, the resident should be able to attain the following PO's:

PO1: Should have knowledge of basic Science in Orthopaedics, Traumatology, Orthopaedic Diseases, Orthopaedic related infections, Metallurgy and subspeciality in Orthopaedics.

PO2: Provide emergency care in Orthopaedic Trauma patients, triage, resuscitation and management of complications.

PO3: Perform basic Trauma surgeries and provide per and post operative care.

PO4: Identify and provide appropriate care for Orthopaedic diseases.

PO 5: Identify and provide appropriate care to all Sub speciality patients in Orthopaedics

PO6: Identify patient safety and system approach to medical errors.

PO7: Identify the needs of patients and society and provide cost effective care in the field of orthopaedics.

PO8: Communicate with stake holders of the health care system.

PO9: Perform literature search and critical appraisal of literature and involve in research related to orthopaedics.

PO10: The Resident should understand the importance of informed consent and shared responsibilities.

4. Course and Course Objectives (CO):

CO's describe the learning that will take place across the curriculum through concise statements, made in specific and measurable terms, of what students will know and /or be able to do after successful completion of each course.

There are four courses for MS Orthopaedics:

4.1 Course 1 (C1): Basic Sciences as applied to Orthopaedics

C1.1. Apply knowledge about pre and para clinical science related to orthopaedics.

C1.2. Should have knowledge about metallurgy in Orthopaedics

C1.3. Should have knowledge about orthopaedic radiology

4.2 Course 2 (C2): Orthopaedic Diseases

C2.1. Provide quality care to the community in the diagnosis and management of common Orthopaedic diseases including bone tumours and Bone & Joint infections and give appropriate care and make referrals if necessary

C2.2. Identify all Orthopaedic diseases of Bone & Joints including peripheral nerve lesions and give appropriate care and make referrals if necessary

C2.3. Identify orthopaedic related congenital abnormalities and paediatric Orthopaedic diseases and manage appropriate or make referrals accordingly

4.3 Course 3 (C3): Traumatology and Rehabilitation

C3.1. Provide quality care to the community in the diagnosis and management of soft tissue injuries, fractures and dislocations

C3.2. Identify all trauma complications and provide effective management

C3.3. Manage effectively all orthopaedic emergencies and if necessary, make appropriate referrals

C2.4. Provide appropriate rehabilitation related to orthopaedics.

C2.5. Provide vital statistics related to Orthopaedics

4.4 Course 4 (C4): Recent Advance and Subspecialty in Orthopaedics

C4.1. Evaluate and Manage common Spinal disorders and make appropriate referrals if necessary

C4.2. Identify and manage sports related injuries and make appropriate referrals if necessary

C4.3. Identify and manage arthritis of joints and disorders and assist in Arthroplasty

C4.4. Identify and initiates basic management and make referrals appropriately for other subspecialty cases as may be deemed fit.

C4.5. Perform critical appraisal of medical literature and do research in orthopaedics to improve the quality of care in community.

C4.6. Perform Critical appraisal of medical literature.

5. Mapping of PEO, PO and the CO

Programme mapping facilitates the alignment of course - level outcomes with programme outcomes. It allows faculty to create a visual map of a programme. It is also used to explore how students are meeting program - level outcomes at the course level. Outcomes mapping focuses on student learning also

Table1. Mapping of PEO, PO and CO

	PEO 1					**PEO2**		**PEO3**	**PO4**	**PEO 5**
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**
C1	Y	Y	Y	Y		Y	Y		Y	Y
C2	Y	Y	Y			Y	Y	Y	Y	Y
C3	Y			Y	Y	Y	Y	Y	Y	Y
C4	Y			Y		Y	Y	Y	Y	Y

All courses run concurrently for 3 years with a summative assessment at the end.

6. Competencies, Sub-Competencies and Milestones

The post graduate programme is competency based, consisting of six domains of competency. Sub - competencies under these domains, specific to the speciality, have been mentioned in general terms. The progression through the curriculum is detailed in sub - competency milestone levels, that directs the prescribed syllabus. These sub - competency milestones are mapped to the Entrustable Professional Activities (EPAs), identified as essential for a specialist. Formative assessment includes EPA assessment, and is carried out every quarter using appropriate tools, for identifying eligibility for transfer of trust, to the resident.

Domain of Competencies

1. **Medical Knowledge (MK)**–Acquiring Knowledge of established and evolving biomedical, clinical, epidemiological, and social - behavioural sciences, and the application of this knowledge to patient care.
2. **Patient Care/Procedural Skill(PC/PS)**–Demonstrate ability to provide patient - centred care/demonstrate skills required for teaching and conducting research.
3. **System Based Practise (SBP)** - Demonstrate the ability to follow the standard operating procedures relevant to practices of the organisations for patient care, inculcating quality and economical practices.
4. **Practice Based Learning and improvement (PBLI)** - Demonstrate the commitment to learn by literature search, feedback, practice and improve upon their ability.
5. **Interpersonal Communication skills (IPCS)** - Demonstrate behaviour and skills that result in the effective communication, exchange of information and cooperation with patients, their families, and health professionals.
6. **Professionalism (P)** - Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Sub - Competencies

Medical Knowledge (MK)

MK 1: Knowledge of musculoskeletal anatomy, normal and abnormal Orthopaedic Radiology and Normal and abnormal Orthopaedic related investigations

MK 2: Knowledge of Splints and tractions and their uses in Orthopaedics

MK 3: Knowledge of wound healing and related complications

MK 4: Knowledge of Orthopaedic Trauma and disease and comorbid conditions

MK 5: Knowledge of Orthopaedic trauma and metallurgy

MK 6: Knowledge of emergency trauma care

MK 7: Knowledge of all sub speciality in Orthopaedics

MK 8: Knowledge of Orthopaedic diseases and rehabilitation

MK 9: Knowledge of Pharmacology of drugs in general and specific for Orthopaedics

MK 10: Knowledge of Orthopaedic diseases and injury

MK 11: Knowledge of research and review of literature

Patient Care / Procedural Skills (PC/PS)

PC/PS1: Interpret laboratory data, imaging studies, and other tests required for the Orthopaedics

PC/PS 2 Provide appropriate Splints and tractions

PC/PS 3 Give essential wound care and identifies complications

PC/PS 4 Documents the progress and obtain appropriate consents

PC/PS 5 Perform and assist in Orthopaedic Trauma surgeries

PC/PS 6 Evaluate Orthopaedic trauma patients and initiates treatment plans

PC/PS 7 Assist in all sub speciality surgeries in Orthopaedics and able to perform basic surgeries

PC/PS 8 Evaluate Orthopaedic diseases and give emergency care for the same

PC/PS 9 Prescribes medication in general and related to Orthopaedics

PC/PS 10: Provide health care services aimed at preventing health problems

PC/PS 11: Procedural skill required for Teaching and Training

PC/PS 12: Procedural skill required for Research

System Based Practice (SBP)

SBP1: Patient Safety and Systems Approach to Medical Errors: Participate in identifying system errors and implementing potential systems solutions

Practice Based Learning and Improvement (PBLI)

PBLI 1: Systematically analyze practice using quality improvement methods and implement changes with the goal of practice improvement

PBLI 2: Critical Appraisal of Medical Literature

PBLI 3: Self-directed Learning

Interpersonal Communication Skills (IPCS)

IPCS1: Communication with patients and their care givers

IPCS2 Communication with peers/Faculty/other health care workers/paramedical and support staff – within speciality and with other specialties

IPCS3: Communication skills required for teaching and training

Professionalism (P)

P1 Punctuality, honesty and self-discipline

P2 Accountability and responsiveness to needs of patient's, society and speciality, with ethical conduct and professional etiquette

P3 Ability to receive feedback/reflect and respond and give feedback to others respectfully.

P4 Awareness of one's ownwellbeing – maintaining Work-life balance

Milestone Levels for Sub competencies

MEDICAL KNOWLEDGE

MK 1: Knowledge of musculoskeletal anatomy, normal and abnormal Orthopaedic Radiology and Normal and abnormal Orthopaedic related investigations				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Has limited knowledge of Orthopaedic Anatomy and basic investigation.	Demonstrates good knowledge of Ortho radiology.	Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., osteophyte formation, fracture dislocation, joint narrowing, subchondral cysts, sclerosis, tumour conditions) and basic blood investigations. Has knowledge of routine CT and MRI.	Demonstrate knowledge of advance imaging like CT angiography, specific MRI, DEXA and special test like TB PCR, MGIT, BIOPSY, etc.	Has the ability to teach normal and abnormal imaging and orthopaedic related investigations to Junior Residents.

MK 2: Knowledge of Splints and tractions and their uses in Orthopaedics				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Has limited knowledge of Splints and traction in Orthopaedics.	Demonstrate Knowledge of injury and the need of appropriate splints and tractions.	Demonstrate basic knowledge of mechanism of injury and appropriate splinting and traction based on that injury.Demonstrates knowledge of prosthetic and orthotic devices.	Demonstrate advanced knowledge of mechanism of injury and appropriate splinting and traction based on that injury. Eg. Skull tongs.	Has knowledge of complications associated with splints and tractions.

MK 3: Knowledge of wound healing and related complications				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Has knowledge of Anatomy and Physiology of wound healing.	Demonstrate knowledge of regional gross anatomy and phases of inflammation and healing.	Demonstrate knowledge of microanatomy and cellular anatomy.	Demonstrates knowledge of the phases of soft tissue healing and cellular mechanisms.	Demonstrates knowledge of the details of tissue healing and cellular Physiology of treatment modalities.

MK 4: Knowledge of Orthopaedic Trauma and disease and comorbid conditions				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Has limited knowledge of diagnosis of patients under treatment.	Demonstrates advance knowledge of diagnosis of patients.	Demonstrates advance knowledge of different patients and their comorbid conditions, drug history and ADR.	Demonstrates advanced knowledge of injuries and Orthopaedic diseases.	Demonstrates knowledge of complications associated with Orthopaedic injuries and diseases.

MK 5: Knowledge of Orthopaedic trauma and metallurgy				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Demonstrates knowledge of basic anatomy and pathophysiology of injured patients.	Knows fractures and soft tissue classifications.	Understands and interprets basic imaging studies. Understands sources of bleeding. List associated injury patterns. Has knowledge of metallurgy and principles of treatment of fractures. Has knowledge of surgical approaches.	Understands the spectrum of instability of the multiply injured patient. Understands the contribution of pelvic injury to hemodynamic status. Understands implications of soft tissue injury on fracture care. Has knowledge of advancement in metallurgy and new researches pertaining to this field.	Understands the mechanical requirements and implants choices to achieve stable constructs. Demonstrates knowledge of the literature regarding damage control and early total care. Understands treatment options for complications.

MK 6: Knowledge of emergency trauma care				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Understands the basic pathophysiology of the multiply injured patient.	Demonstrates knowledge of basic surgical approaches and interprets basic imaging studies.	Recognizes common complications and understand the spectrum of instability of the multiply injured patients.	Understands principles of damage control and early total care. Demonstrates understanding of complex pathophysiology of the multi-injured patients.	Understands the methods of long bone and pelvis stabilization. Demonstrates knowledge of complex and combined approaches.

MK 7: Knowledge of all sub speciality in Orthopaedics				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Demonstrates knowledge of pathophysiology related to Orthopaedic sports medicine, Spinal disorders, inflammatory diseases and degenerative joint diseases.	Correlates anatomic knowledge to imaging findings on basic imaging studies and has advance knowledge of pathophysiology and prognosis of orthopaedic related diseases.	Demonstrates knowledge of ligaments injury, Spinal diseases and natural history of arthritic condition of joints. Has knowledge of surgical approaches.	Demonstrates knowledge of nonoperative treatment options and surgical indications for sports related injuries, Spinal disorders and arthritis.	Understand pathophysiology of concomitant injuries and biomechanics of injury. Understands non-operative treatment options and surgical indications in spinal disorders, joint disorders and sports related injuries.

MK 8: Knowledge of Orthopaedic diseases and rehabilitation				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Demonstrates knowledge of pathophysiology related to Orthopaedic disease like bone and joint infection and tumours. Demonstrates knowledge of normal development of	Demonstrates basic knowledge of natural history of Orthopaedics diseases (e.gTumours, infections, arthritis, congenital anomalies, metabolic disorders and	Correlates anatomic knowledge to imaging findings on basic imaging studies (e.g., osteophyte formation, joint narrowing, subchondral cysts, sclerosis, tumour	Demonstrates knowledge of non-operative treatment options and surgical indications. Correlates anatomic knowledge to imaging findings on advanced imaging studies	Understands the effects of intervention on natural history of arthritis,tumours, bone & joint infections, congenital anomalies, metabolic and other miscellaneous

musculoskeletal system.	other miscellaneous conditions).Demonstrates knowledge of rehabilitation protocol.	conditions). Demonstrates knowledge of patho anatomy and basic surgical approaches..	(e. g. bone loss, articular deformity, subluxation).	conditions. Understands alternative surgical approaches for the specific disease condition. Understands basic presurgical planning and templating. Understands how to prevent / avoid potential complications.

MK 9: Knowledge of Pharmacology of drugs in general and specific for Orthopaedics				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Has knowledge in Pharmacology of drugs commonly used.	Has limited knowledge of specific drugs used in Orthopaedics.	Has good knowledge of specific drug used in Orthopaedics.	Demonstrates knowledge of drugs used in specific Orthopaedic diseases like inflammatory arthritis, Osteoporosis and Tumours.	Demonstrates knowledge of all the specific drugs used in Orthopaedics and their adverse effects.

MK 10: Knowledge of Orthopaedic diseases and injury				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Has limited knowledge of fractures and orthopaedic diseases and communicates with patients.	Has good knowledge of fractures and orthopaedic diseases and communicates with patients.	Has knowledge of comorbid conditions of patients and obtains specific consults for the same.	Has knowledge of metallurgy and orthopaedic related implants and their costs.	Demonstrates knowledge of Surgical procedures for the specific disease condition.

MK 11: Acquire knowledge for journal club and seminar presentations - Comprehension of the subject and its global relevance				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Understands the basic concepts relevant to the topic being presented. Understands the relevance of journal articles.	Knowledge of analysing Journals (Indexing, impact factor, TOC), articles, methodology and statistics Knowledge of gathering relevant information from various sources and cites the references.	Understands how to critically analyse and compare articles relevant to topic/practise Able to form concepts on the subject.	Understands the direction of growth of the speciality.	Updates the knowledge in recent advances of the speciality.

Patient Care/ Procedural Skills - PC/PS:

PC/PS1: Interpret laboratory data, imaging studies, and other tests required for the Orthopaedics				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Demonstrate basics skills for routine patient care and performance of examination of musculoskeletal system.	Orders appropriate radiographs and blood investigations.	Identifies abnormalities in radiographs, CT, MRI and blood investigations.	Able to interpret advance imaging in CT & MRI and orthopaedics related investigations.	Able to interpret and correlate clinically the advance imaging and other investigations.

PC/PS2: Provide appropriate Splints and tractions				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Demonstrates basic skills in assessing splints and tractions	Able to provide basic splints under supervision. Able to apply orthotic devices as essential.	Able to provide basic splints and tractions with limited supervision. Able to identify the need of prosthetic devices patient specific.	Able to provide all splints and tractions without supervision.	Able to teach Junior Resident and Interns basic splints and Tractions.

PC/PS 3: Give essential wound care and identifies complications				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Demonstrates basic skills of sterile dressings.	Able to do appropriate wound care under supervision.	Able to do appropriate wound care without supervision and able to identify complications.	Able to identify wound complications and able to give initial care for the same.	Able to identify major soft tissue related complications and communicates with team members and give referral appropriately if needed.

PC/PS 4: Documents the progress and obtain appropriate consents				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Obtains an accurate history from the patient and documentation.	Performs relevant clinical examination and documentations.	Able to diagnose the Orthopaedic diseases and injury and documents. Capable of obtaining informed consent for procedures and surgeries.	Able to make appropriate treatment plans and documentations.	Able to identify complications and give appropriate referrals and documentations.

PC/PS 5: Perform and assisst in Orthopaedic Trauma surgeries				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Obtains an accurate history and physical examination.	Identifies an unstable patient. Orders appropriate imaging studies. Appropriately assesses soft tissue status. Provide appropriate splints and plaster for fractures. Reduces simple fractures.	Formulates basic plan for treatment of fractures. Identifies the need for multispecialty involvement. Recognizes soft tissue conditions that require urgent treatment. Performs simple wound debridement, K wire fixation and external fixator application of fractures. He can assist all	Performs standard surgical approaches. Executes simple fracture fixation like both bone forearm fractures, tibia and femur IMIL, trochanter fixation without supervision. He is skillful in assisting major trauma like pelvis-acetabular surgeries and spine stabilization.	Understands the nuances of trauma. Completes comprehensive pre-operative planning with alternatives. Modifies and adjusts post-operative treatment plan as needed and capable of treating simple complications.

		minor and major trauma. He can perform trauma surgeries under supervision. (ex., Both bone forearm ORIF, humerus ORIF, tibia and femur nailing).		

PC/PS 6: Evaluates Orthopaedic trauma patients and initiates treatment plans				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Assesses trauma patients.	Identifies unstable patient and the need for multispecialty involvement.	Implements strategies to optimize host status creates basic pre-operative plan.	Mobilizes the injured patient to operating room for emergent care.	Demonstrates basic psychomotor skills of emergency stabilization skeletally and hemodynamically in ER.

PC/PS 7: Assist in all sub speciality surgeries in Orthopaedics and able to perform basic surgeries				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Obtains history and performs basic physical examination of Spine and joints.	Appropriately orders basic imaging studies. Prescribes non-operative treatments.	Appropriately interprets basic imaging studies. Provides basic perioperative management. Able to perform diagnostic knee arthroscopy, hemi arthroplasty and spine surgical approaches.	Completes pre-operative planning with instrumentation, graft selection and implants Examines injury under anesthesia (e.g., complete ligament examination). Able to assist in arthroscopy ligament reconstructions, arthroplasty and spine surgeries.	Provides post- operative management and rehabilitation (e.g., WB status, brace, ROM, quads strengthening).

PC/PS 8: Evaluates Orthopaedic diseases and give emergency care for the same				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Obtains history and performs basic physical examination. Appropriately orders basic imaging studies.	Prescribes non-operative treatments. Provides basic perioperative management. Lists potential complications of the orthopaedic disease.	Obtains focused history and performs focused examination and gait analysis. Appropriately interprets basic imaging studies. Able to perform incision & drainage, debridement, arthrotomy of joints, biopsy and give intra-articular injections.	Completes pre-operative planning with instrumentation and implants. Performs basic surgical approaches. Provides post - operative management and rehabilitation.	Appropriately orders and interprets advanced imaging studies / lab studies. Completes comprehensive pre-operative planning with alternatives. Capable of performing straight forward surgeries.

PC/PS 9: Prescribes medication in general and related to Orthopaedics				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Prescribes general medication.	Prescribes analgesics like NSAID's and other drugs specific for Orthopaedic conditions.	Prescribes antibiotics and identifies complications related to the drugs.	Prescribes DMARDS, drugs for Osteoporosis and degenerative arthritis and identifies complications related to the drugs.	Capable of identifying adverse drug reactions and give treatment for the same.

PC/PS 10: Provide health care services aimed at preventing health problems				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Gives care and concern to the patients and listens to them.	Enquire for patient and family understanding of illness and management plans.	Communicates effectively in stressful emergent and complex situations to the patients and relatives. Communicates with the senior and juniors inter and intra departmental effectively.	Delivers bad news to the families about complications.	Capable of communication in most challenging situations.

PC/PS 11: Procedural skill required for Teaching and Training				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Collecting information and compiling to Prepare appropriate teaching material. Prepares and presents lectures/bedside teaching for paramedical students.	In addition to Milestone Level 1, prepares and presents lectures/bedside teaching for UG students (MBBS) and interns. Prepares and presents seminars and journal clubs.	In addition to Milestone Level 2, prepares and presents lectures/bedside teaching for junior colleagues. Prepares and presents in Case Discussion.	In addition to Milestone Level 3, able to participate in a team to conduct Simulation based training sessions.	Able to conduct Simulation based training sessions.

PC/PS 12: Procedural skill required for Research				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Review of Literature - Collecting information and compiling.	In addition to Milestone Level 1, Prepares study protocol for dissertation submission. Confidently presents study protocol to scientific committee.	In addition to Milestone Level 2, proactively participates in data collection and data compilation. Discusses study findings with the guide and co guides regularly and seeks help when warranted.	In addition to Milestone Level 3, able to present their study at scientific meetings. Compiles data collected and statistics, and formatting for dissertation.	Develop hypodissertation, designs and conducts research studies. Helps and guides juniors with research protocols.

System Based Practice

SBP1: Patient Safety and Systems Approach to Medical Errors: Participate in identifying system errors and implementing potential systems solutions				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Describes basic levels of systems of care for orthopaedic diseases and trauma.	Demonstrates an ability to give examples of cost containment and value implications of patient care.	Understand the economic challenges of patient care within the health system.	Orders and schedules tests in an appropriate way for individual patients, balancing quality and safety.	Navigates the economic differences between different health care systems for patients.

Practice Based Learning and Improvement

PBLI 1: Systematically analyze practice using quality improvement methods and implement changes with the goal of practice improvement				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Acknowledges gaps in personal knowledge and expertise, and frequently asks for feedback from teachers and colleagues.	Develops a learning plan based on feedback with some external assistance.	Continually assesses performance by evaluating feedback and assessments.	Uses patient care experiences to direct learning. Accurately assesses areas of competence and deficiencies and modifies learning plan.	Demonstrates the ability to select an appropriate evidence-based information tool to answer specific questions while providing care. Demonstrates use of published review articles or guidelines to review common topics in practice.

PBLI 2: Critical Appraisal of Medical Literature				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Demonstrates an understanding of critical appraisal of the literature Demonstrates	Identifies resources (e.g., texts, search engines) to answer questions while providing patient care	Applies patient-appropriate evidence-based information from review articles or guidelines on common	Interprets the strength of evidence in current literature and applies it to practice.	Contributes to peer-reviewed medical literature.

responsiveness to constructive feedback.	Recognizes limits of knowledge, expertise, and technical skills Describes commonly used study designs (e.g., randomized controlled trial [RCT], cohort; case-control, cross-sectional).	topics in practice Critically reviews and interprets the literature.	Analyses his or her own outcomes as compared to national standards.	

PBLI3: Self-directed Learning				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Analyse practice experience and perform practice-based improvement activities using a systematic methodology or preprocedural checklists Completes assigned readings and prescribed learning activities Uses clinical opportunities to direct self-learning.	Reviews the literature and information relevant to specific clinical assignments Periodically modifies learning plan based on feedback, and self-reflection.	Differentiates evidence-based information from non-evidence-based resources to address specific patient management needs Incorporates experiences from subspecialty rotations to modify learning plan Use information technology to manage information, access on-line medical information, and support their own education Understands the importance of audits to improve their practice.	Ability to participate in audits and understand the data to improve their practice and the system. Incorporates evidence-based medicine practices into patient management Takes responsibility for integrating past experience, multiple learning activities, and self-reflection to direct lifelong learning independently.	Facilitate the learning of students and other healthcare professionals Refines clinical practice based on evolving medical evidence Continually analyzes personal practice to focus self-directed lifelong learning.

Interpersonal Communication Skills

IPCS 1: Communication with patients and their care givers				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Understands the need for effective communication, maintaining a respectful and culturally - sensitive manner. Obtains informed consent for routine procedures using language appropriate to the patient's and family's level of understanding.	Ability to gather the needed information during History taking and physical examination in a respectful manner. Communicates effectively in routine situations and ensures that patient and family understand the situation and procedure and allows to ask questions. Maintains respectful communication throughout procedures where patient is awake. Willingness to solicit and answer all questions from patients and relatives.	Communicates effectively in stressful, emergent, and complex situations. Ability to give the necessary information regarding choice of management and guide the patient/attenders for informed decision making. Ability to communicate the risks involved for patient care, in an understandable language without making the patient/attenders apprehensive, allowing two way communication.	Capable of delivering bad news to patients and families regarding poor prognoses situations in a compassionate way. Ability to declare and explain the unexpected outcome to families about complications. Participates in education of patients and families.	Leads multidisciplinary family/patient/team member conferences. Capable of training UG's, PG's and junior colleagues in communication skills.

IPCS 2: Communication with peers/Faculty/other health care workers/paramedical and support staff – within speciality and with other specialties				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Understands the importance of relationship development, information gathering, sharing, and teamwork.	Demonstrates an understanding of the roles of health care team members and communicates effectively within the team. Demonstrates an understanding of transitions of care and team debriefing. Ability to maintain clear and meticulous documentation with legible handwriting.	Works effectively in interprofessional and interdisciplinary health care teams Ability to convey the required information clearly to the consultants, peers and other health care workers. Participates in effective transitions of care and team debriefing.	Responds to requests for consultation in a timely manner and communicates recommendations to the requesting team. Knows the etiquette of speaking / arguing respectfully in group meetings.	Educates other health care professionals regarding team building Leads effective transitions of care and team debriefing Has developed skills for public speaking.

IPCS 3: Communication skills required for teaching and training – Seminars, case presentations and Journal clubs				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Makes the effort to speak clearly with good clear enunciation. Maintains proper communication with the moderator/consults senior prior to presentation.	Confidently vocalises the topic clearly with good language articulation – both subject oriented and general grammar.	Communicates effectively with students, ensuring audience has understood and allows them to ask questions.	Confidently able to answer questions, raised during the presentation, withouta biased reproach.	Ability to take the role of Moderator to junior or other students.

Professionalism

P 1: Punctuality, honesty and self-discipline				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Does not maintain punctuality, is irregular in attendance. Gives excuses without accepting responsibility. Not able to depend on the versions of transferred information.	Ability to be regular and punctual. Submission of assignments within stipulated times. Is truthful in all forms of communication.	Maintenance of timings while taking teaching and training sessions – Arrives on time, conducts the class/journal club as per the stipulated time and format.	Ability to maintain emotional balance during triggering situations, people and environment.	Serves as a role model and mentor for juniors and students.

P 2: Accountability and responsiveness to needs of patient's, society and speciality, with ethical conduct and professional etiquette.				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Inappropriate work attire. Is not forthcoming in all communications.	Addresses ethical issues relevant to the needs of the patient/student, society and profession. Understands the importance of workplace hierarchy. Demonstrates respectfulness and spirit of cooperation to consultants, peers and other health care workers/support staff.	Addresses ethical issues in complex and challenging circumstance. Demonstrates sensitivity and responsiveness to diversity of patients/students, ages, cultures, races, religions, abilities, or sexual orientations Takes responsibility for the care provided and seeks help appropriately	Ability to be a functional member of a coordinated team and follow the protocol and chain of command appropriately.	Serves as a role model and mentors others about bioethical principles Ability to function as the team leader and coordinate overall team performance. Develops a systematic approach to managing ethical dilemmas.

		Able to follow the hierarchy in the working environment.		

P 3: Ability to receive feedback/reflect and respond and give feedback to others respectfully.				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Seeks constructive feedback from faculty members and colleagues.	Ability to accept and follow constructive feedback from consultants, peers and other health care workers, and integrate into their practise.	Correlates feedback with self - reflection and incorporates it into lifelong learning to enhance patient care.	Provides constructive feedback to juniors in a tactful and supportive way to enhance patient care.	Effectively seeks and provides constructive feedback in challenging situations.

P 4: Awareness of one's ownwellbeing – maintaining work-life balance				
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
Does not manage stress adequately - Maladaptive reactions to stress Reluctance in accepting tasks.	Understands the importance of work-life balance. Proactively accepts tasks with a pleasant demeanour.	Ability to recognise their own stress and seek help to manage it. Is proactive in task management and self reflects for improvement.	Maintains a well- balanced work etiquette and works well under pressure and coordinates tasks appropriately.	Maintains balance between work and life and serves as an example to all. Ability to guide others in management of stress and well being.

7. Syllabus

Course 1: Basic Sciences as applied to Orthopaedics:

Basic Sciences

- 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 inOrthopaedics
- Diagnostic Imaging in Orthopaedics

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

    - Digital Subtraction Angiography(DSA)
    - MRI and CT inOrthopaedics
    - Musculoskeletal USG
    - PETScan
    - Radio-isotope bone scan
- Shock
- Crush syndrome
- Disseminated Intravascular Coagulation(DIC)
- Acute Respiratory Distress Syndrome(ARDS)

Course 2: Orthopaedic Diseases

- Rickets and Osteomalacia
- Osteoporosis
- Scurvy
- Mucopolysaccharoidoses
- Fluorosis
- Osteopetrosis
- Hyperparathyroidism
- Gigantism, Acromegaly
- Pyogenic Haematogenous Osteomyelitis - Acute and Chronic

- Septic arthritis
- Fungal infections
- Miscellaneous infections
- Gonococcal arthritis
- 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
- General considerations
- Polio Lower limb and spine
- Management of Post Polio Residual Palsy(PPRP)
- Cerebral Palsy
- Myopathies
- Traumatic
- Entrapment Neuropathies
- Osteoarthrosis
- Calcium Pyrophosphate Dihydrate (CPPD),Gout
- Collagen diseases
- Benign bone tumours
- Malignant bone tumours
- Tumor like conditions
- Metastatic bone Tumors
- Diseases of muscles
- Fibrous Dysplasia
- Unclassified diseases of bone
- Paget's disease
- Peripheral vascular disease
- Orthopaedic manifestations of bleeding disorders

Regional Orthopaedic 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
- Arthrodesis of lower extremity and hip
- Arthrodesis of upper extremity
- Arthrodesis of spine
- Amputations and disarticulations in the lower limb
- Amputations and disarticulations in the upper limb
- Perthes' disease
- Slipped capital femoral epiphysis
- Congenital Dislocation of Hip(CDH)
- Neuromuscular disorders
- Prolapsed Inter Vertebral Disc(PIVD)
- Lumbar Canal Stenosis (LCS)
- Spondylolysis /Spondylolisthesis
- Lumbar Spondylosis
- Ankylosing Spondylitis
- Spinal fusion: various types and their indications

Course 3: Traumatology and Rehabilitation

- 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
- Less Invasive Stabilisation System(LISS)
- Ilizarov 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
- Mal- united fractures
- Delayed union and non union of fractures
- Fractures/dislocations and fracture - dislocations of spine
- Acute dislocations
- Old unreduced dislocations
- Recurrent dislocations
- Ankle injuries
- Knee injuries
- Shoulder and elbow injuries
- Wrist and hand injuries
- Prosthetics and Orthotics
- Fractures and dislocations in children
- Spinal trauma
    - Rehabilitation of paraplegics/quadriplegics
    - Management of a paralyzed bladder
    - Prevention of bed sores and management of established bedsores
    - Exercise programme and Activities of Daily Living(ADL)
    - Psychosexual counselling
- Triage, Disaster Management, BTLS and ATLS

Course 4: Recent advances and sub speciality in Orthopaedics

- Orthopaedic metallurgy
- Bio-degradable implants in Orthopaedics
- Bone substitutes
- Bone Banking
- 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
- Autologous chondrocyte implantation

- Mosaicplasty
- Video assisted Thoracoscopy(VATS)
- Endoscopic spinesurgery
- 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
- Prolapsed Inter Vertebral Disc(PIVD)
- Lumbar Canal Stenosis(LCS)
- Spondylolysis/Spondylolisthesis
- Lumbar Spondylosis
- Ankylosing Spondylitis
- Spinal fusion: various types and their indications

8. Teaching and Learning Methods

Postgraduate Training

Teaching methodology should be imparted to the students through:

Theory

Teaching Programme

- 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 and special clinics.
- Seminars / Symposia – Twice a month; Theme based student centred.
- 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:** Twice 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 student describes the morbid anatomy and histopathology of the samecase.
- **Clinical teaching** in the OPD, Emergency room, ICU, OR as per the situation.
- Mortality & Morbidity meetings with SURGICAL AUDIT: Once amonth
- By encouraging and allowing the students to attend and actively participate in CMEs, Conferences by presenting papers.

Structured graded Training

E-Portfolio

It is an electronic portfolio to be maintained by the resident to record their day to day academic and patient care activities under the following sections:

- Entrustable Professional Activity assessment
- Daily log
- Patient care
- Procedure
- Dissertation
- Academic activities(Seminar, symposium, case presentation, journal club)
- Co - curricular activities (Conference, CME, Workshop),
- Teaching Assignments,

- Awards and achievements
- Outreach activities.

E - portfolio will be monitored and endorsed periodically by the faculty supervisors. This will enable faculty to monitor residents progress, attainment of milestones and impart the training accordingly.

Other Skills

- Writing thesis following appropriate research methodology, ethical clearance and good clinical practice guidelines.
- The postgraduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.
- A postgraduate student of a postgraduate degree course in broad specialities/super specialities 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 postgraduate degree examination.
- Every year an exclusive teaching programme for Post Graduates has been conducted (MORE- MGMCRI Orthopaedic Revision Education)
- Department encourages e-learning activities.

Practical Skills training (Psychomotor domains)

- **SKILLS LAB SESSIONS:** Once a fortnight for all twoyears.
- **Cadaveric Dissection:** All first year and second year Post Graduates are exposed to various surgical approaches.
- Emphasis should be on self-directed learning, group discussions and case presentations.
- Student should be trained about proper History taking, Clinical examination, advising / ordering relevant investigations, their interpretation and instituting medical / surgical management by posting students in OPD, specialty clinics, wards and operation theatres.
- Rotations:
- Details of 3 years posting in the PG programme (6 terms of 6 months each)

	1st Mon	2nd Mon	3rd Mon	4th Mon	5th Mon	6th Mon	7th Mon	8th Mon	9th Mon	10th Mon	11th Mon	12th Mon
1st year	PU	PU	PU	PU	R1	R1	R2	R2	R3	R3	R4	R4
2nd year	PE1	PE2	PU	PU	R1	R1	R2	R2	R3	R3	R4	R4
3rd year	R1	R1	R2	R2	R3	R3	R4	R4	PU	PU	PU	PU

PU: Parent Unit, **R 1 - 4**: Rotations through all units, **PE1:**2 weeks of Neurosurgery and 2 weeks of Plastic Surgery, **PE2:** 4 weeksTrauma (EMS)

***Allied posts should be done during the course – for 8 weeks**

- Neurosurgery - 2 weeks
- Plastic Surgery - 2 weeks
- Trauma (EMS) - 4 weeks

Details of training in the subject during resident posting
The student should attend to the duties (Routine and emergency) and will be attending Out patient, Department and special clinics, Inpatients and Operation Theatre.

Also will be writing clinical notes regularly and maintains records.

9. Assessment

Formative Assessment

Cognitive assessment

Assessment in cognitive domain - theory test will be conducted after 6 months from the 1st year every month first Thursday consisting of 5 questions of 10 marks each

Schedule of test

- 1st year - Test will be conducted from Course 1 & 2.
- 2nd year - Test will be conducted from Course 2 & 3.
- 3rd year - Test will be conducted from Course 2,3&4.
- 3rd year - Mock exams every week spreaded over a period of 12 weeks consisting of all four papers.
- 3 rd year - A model exam theory & Practical will be conducted one month before final exams.

EPA Assessment

Assessment of EPA will be done during the unit rotations at the begining and at the end of postings.

List of the EntrustableProfessional Activity

EPA No.	GENERAL
1	Gather a history and perform a physical examination
2	Prioritize a differential diagnosis following a clinical outcome
3	Recommend and interpret common diagnostic and screening tests
4	Enter and discuss orders and prescriptions
5	Document a clinical encounter in the patient record.
6	Provide an oral presentation of a clinical encounter
7	Recognize a patient requiring urgent or emergent care and initiate evaluation and management
8	Give or receive a patient handover to transition care responsibility
9	Obtain informed consent for test and/or procedures
10	Collaborate as member of an inter professional team
11	Form clinical questions and retrieve evidence to advance patient care.
	ORTHOPAEDICS
12	Orthopaedic Radiology and related investigations
13	Splints and tractions
14	Wound care

15	Medical documentation
16	Performing and assisting Trauma Procedures including metallurgy knowledge
17	Triaging and resuscitation in Orthopaedic emergencies and referrals (Inter & Intra Department)
18	Sub speciality surgeries
19	Orthopaedic diseases and Rehabilitation
20	Prescription and medications in Orthopaedics
21	Communication skills
22	Research and critical appraisal of literature

Description of Entrustable Professional Activity with relevant domains of competence

<table>
<tr><td colspan="4">EPA 1: Gathering a history and performing physical examination</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to perform an accurate complete or focused history and physical exam in a prioritized, organized manner without supervision and with respect for the patient. The history and physical examination should be tailored to the clinical situation and specific patient encounter. This data gathering and patient interaction activity serves as the basis for clinical work and as the building block for patient evaluation and management.</td></tr>
<tr><td rowspan="5">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>6,7,8</td><td>6-L3, 7-L3, 8-L3</td></tr>
<tr><td>PC/PS</td><td>6,7,8</td><td>6-L3,7-L3,8-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1 & 2</td><td>1-L2, 2-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Periodic written exam (Every month)
2. Mini clinical exams
3. Workplace assessment by Faculty
4. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 2: Prioritizing a differential diagnosis following a clinical encounter</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to integrate patient data to formulate an assessment, developing a list of potential diagnoses that can be prioritized and lead to selection of a working diagnosis</td></tr>
<tr><td rowspan="5">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>6,7,8</td><td>6-L3, 7-L3,8-L3</td></tr>
<tr><td>PC/PS</td><td>6,7,8</td><td>6-L3, 7-L3,8-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Mini clinical exams
3. Workplace assessment by Faculty
4. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 3: Recommending and interpreting common diagnostic and screening tests</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to select and interpret common diagnostic and screening tests using evidence-based and cost-effective principles as one approaches a patient in any setting.</td></tr>
<tr><td rowspan="5">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>1</td><td>1-L3</td></tr>
<tr><td>PC/PS</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every 6 months)
2. Workplace assessment by Faculty
3. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 4: Entering and discussing orders and prescriptions and giving the necessary instructions to the patients</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to prescribe therapies or interventions beneficial to patients. Entering residents will have a comprehensive understanding of some but not necessarily all of the patient’s clinical problems for which they must provide orders. They must also recognize their limitations and seek review for any orders and prescriptions they are expected to provide but for which they do not understand the rationale. The expectation is that learners will be able to enter safe orders and prescriptions in a variety of settings (e.g., inpatient, ambulatory, urgent, or emergent care).</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>9</td><td>9-L3</td></tr>
<tr><td>PC/PS</td><td>9</td><td>9-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L2</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L2</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Workplace assessment by Faculty
3. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 5: Documenting a clinical encounter in patient records</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to provide accurate, focused, and context-specific documentation of a clinical encounter in either written or electronic formats. Performance of this EPA is predicated on the ability to obtain information through history, using both primary and secondary sources, and physical exam in a variety of settings (e.g., office visit, admission, discharge summary, telephone call, email).</td></tr>
<tr><td rowspan="6">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>4</td><td>4-L3</td></tr>
<tr><td>PC/PS</td><td>4</td><td>4-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L2</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Workplace assessment by Faculty
3. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 6: Provide an oral presentation of a clinical encounter</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to concisely present a summary of a clinical encounter to one or more members of the health care team (including patients and families) in order to achieve a shared understanding of the patient’s current condition. A prerequisite for the ability to provide an oral presentation is synthesis of the information, gathered into an accurate assessment of the patient’s current condition.</td></tr>
<tr><td rowspan="6">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>6</td><td>6-L3</td></tr>
<tr><td>PC/PS</td><td>6</td><td>6-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L2</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Workplace assessment by Faculty
3. Mini clinical exams
4. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 7: Recognize a patient requiring urgent or emergency care and initiate evaluation and management</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to promptly recognize a patient who requires urgent or emergent care, initiate evaluation and management, and seek help is essential. New residents in particular are often among the first responders in an acute care setting, or the first to receive notification of an abnormal lab or deterioration in a patient’s status. Early recognition and intervention provides the greatest chance for optimal outcomes in patient care. This EPA often calls for simultaneously recognizing need and initiating a call for assistance.</td></tr>
<tr><td rowspan="5"></td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>6</td><td>6-L3</td></tr>
<tr><td>PC/PS</td><td>6</td><td>6-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>4.Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Workplace assessment by Faculty
3. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 8: Give or receive a patient handover to transition care responsibility</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Effective and efficient handover communication is critical for patient care. Handover communication ensures that patients continue to receive high-quality and safe care through transitions of responsibility from one health care team or practitioner to another. Handovers are also foundational to the success of many other types of interprofessional communication, including discharge from one provider to another and from one setting to another. Handovers may occur between settings (e.g., hospitalist to PCP; pediatric to adult caregiver; discharges to lower-acuity settings) or within settings (e.g., shift changes).</td></tr>
<tr><td rowspan="6">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>10</td><td>10-L3</td></tr>
<tr><td>PC/PS</td><td>10</td><td>10-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L2</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Workplace assessment by Faculty
2. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 9: Obtain informed consent for tests and/or procedures</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to perform patient care interventions that require informed consent for interventions, tests, or procedures they order or perform (e.g., immunizations, central lines, contrast and radiation exposures, blood transfusions) but should not be expected to obtain informed consent for procedures or tests for which they do not know the indications, contraindications, alternatives, risks, and benefits.</td></tr>
<tr><td rowspan="6">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>4</td><td>4-L3</td></tr>
<tr><td>PC/PS</td><td>4</td><td>4-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L2</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L2, 2-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Workplace assessment by Faculty
2. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 10: Collaborate as a member of an interprofessional team</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Effective teamwork is necessary to achieve the Institute of Medicine competencies for care that is safe, timely, effective, efficient, and equitable. Introduction to the roles, responsibilities, and contributions of individual team members early in professional development is critical to fully embracing the value that teamwork adds to patient care outcomes.</td></tr>
<tr><td rowspan="4">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2,3</td><td>1-L2,2-L2,3-L2</td></tr>
<tr><td>P</td><td>1,2,3</td><td>1-L2,2-L2,3-L2</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Workplace assessment by Faculty
2. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 11: Form clinical questions and retrieve evidence to advance patient care</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to identify key clinical questions in caring for patients, identify information resources, and retrieve information and evidence that will be used to address those questions. Residents should have basic skill in critiquing the quality of the evidence and assessing applicability to their patients and the clinical context. Underlying the skill set of practicing evidence-based medicine is the foundational knowledge an individual has and the self-awareness to identify gaps and fill them.</td></tr>
<tr><td rowspan="6">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>4</td><td>4-L3</td></tr>
<tr><td>PC/PS</td><td>11,12</td><td>11-L3,12-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L2</td></tr>
<tr><td>IPCS</td><td>3</td><td>3-L2</td></tr>
<tr><td>P</td><td>2</td><td>2-L2</td></tr>
<tr><td>4.Methods of assessment</td><td colspan="3">1. Workplace assessment by Faculty
2. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 12: Orthopaedic - Radiology and related investigations</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should demonstrate knowledge of Ortho Radiology, Orthopaedic Anatomy and Orthopaedics related investigations. He should able to order appropriate radiographs and blood investigations and able to interrupt routine Radiographs, CT, MRI and other investigations.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>1</td><td>1-L3</td></tr>
<tr><td>PC/PS</td><td>1</td><td>1-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3,2-L3</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L3,2-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Periodic written exam (Every month)
2. Mini clinical exams
3. Work place assessment
4. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 13: Splints and tractions</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to splint fractures and apply different tractions as appropriate for the Orthopaedic conditions. He should be capable of treating fractures non operatively as appropriate.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>2</td><td>2-L3</td></tr>
<tr><td>PC/PS</td><td>2</td><td>2-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Workplace assessment by Faculty
3. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 14: Wound care</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to give appropriate wound care for Trauma and Post operativepatients. He should be able to identify wound complications and initiate care for the same.</td></tr>
<tr><td rowspan="6">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>3</td><td>3-L3</td></tr>
<tr><td>PC/PS</td><td>3</td><td>3-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Workplace assessment by Faculty
2. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 15: Medical documentation</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to document proper history, clinical examination, obtain proper consent for procedure and surgeries.He also documents every day progress notes, compliance of the patients etc.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>4</td><td>4-L3</td></tr>
<tr><td>PC/PS</td><td>4</td><td>4-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Workplace assessment by Faculty
2. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 16: Performing and assisting Trauma Procedures including metallurgy knowledge</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to provide accurate, focused, and context-specific documentation of a clinical encounter in either written or electronic formats. Performance of this EPA is predicated on the ability to obtain information through history, using both primary and secondary sources, and physical exam in a variety of settings (e.g., office visit, admission, discharge summary, telephone call, email).</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>5</td><td>5-L3</td></tr>
<tr><td>PC/PS</td><td>5</td><td>5-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Mini Clinical exams
3. Workplace assessment by Faculty
4. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 17: Triaging and resuscitation in Orthopaedic emergencies and referrals (Inter & Intra Department)</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to triage a trauma patient and act appropriately. He should be able to resuscitate a multiple injured patient and make appropriate referrals. He should be able to do Damage control orthopaedic procedures.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>6</td><td>6-L3</td></tr>
<tr><td>PC/PS</td><td>6</td><td>6-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>P</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1.Written exam (Every month)
2. Workplace assessment by Faculty
3. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 18: Sub speciality surgeries</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to recognize and evaluate all Orthopaedic sub speciality patient including Spinal disorders, Sports related injuries and joint diseases and reconstruction.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>7</td><td>7-L3</td></tr>
<tr><td>PC/PS</td><td>7</td><td>7-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>P</td><td>1,2,3</td><td>1-L3, 2-L3,3-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Mini Clinical exams
3. Workplace assessment by Faculty
4. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 19: Orthopaedic diseases and Rehabilitation</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Resident should be able to diagnose common Orthopaedic diseases including bone and joint infections, Tumours, Congenital abnormalities and other diseases related to Orthopaedics. He can give rehabilitation appropriate to diseases.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>8</td><td>8-L3</td></tr>
<tr><td>PC/PS</td><td>8</td><td>8-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>P</td><td>1,2,3</td><td>1-L3, 2-L3,3-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every month)
2. Mini clinical exams
3. Workplace assessment by Faculty
4. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 20: Prescription and medications in Orthopaedics</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should have knowledge of all drugs used in general and specific for Orthopaedics.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>9</td><td>9-L3</td></tr>
<tr><td>PC/PS</td><td>9</td><td>9-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3, 2-L3</td></tr>
<tr><td>P</td><td>1,2,3</td><td>1-L3, 2-L3,3-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Workplace assessment by Faculty
2. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 21: Communication skills</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Resident has the capability to communicate within the department intra departmental and with stake holders of health system. He can communicate with the patient and relatives in a professional way.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>10</td><td>10-L3</td></tr>
<tr><td>PC/PS</td><td>10</td><td>10-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>1,2</td><td>1-L3,2-L3</td></tr>
<tr><td>P</td><td>1,2,3,4</td><td>1-L3, 2-L3,3-L3,4-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Workplace assessment by Faculty
2. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

<table>
<tr><td colspan="4">EPA 22: Research and literature</td></tr>
<tr><td>Description of the activity</td><td colspan="3">Residents should be able to do appropriate research in the form of dissertation and should have sound knowledge of the same up to date. He should be capable of performing literature search and guide in the recent advances of treatment of Orthopaedic diseases and Trauma.</td></tr>
<tr><td rowspan="7">Resident will be entrustable when these subcompetency Milestone Levels are attained</td><td>Relevant domains of competency</td><td>Subcompetencies within each domain</td><td>Milestone level (L) in subcompetency</td></tr>
<tr><td>MK</td><td>11</td><td>11-L3</td></tr>
<tr><td>PC/PS</td><td>12</td><td>12-L3</td></tr>
<tr><td>SBP</td><td>1</td><td>1-L3</td></tr>
<tr><td>IPCS</td><td>2</td><td>2-L3</td></tr>
<tr><td>PBLI</td><td>1</td><td>1-L3</td></tr>
<tr><td>P</td><td>2</td><td>2-L3</td></tr>
<tr><td>Methods of assessment</td><td colspan="3">1. Written exam (Every 6 months)
2. Workplace assessment by Faculty
3. Multisource feedback
a. Patient
b. Nurses
c. Health care workers
d. Peers</td></tr>
</table>

Mapping of EPA to Programme Outcomes (PO)

	PO1.	PO2.	PO3.	PO4.	PO5.	PO6.	PO7.	PO8.	PO9.	PO10.
EPA1.	✓		✓	✓		✓	✓	✓		✓
EPA2.	✓		✓	✓		✓	✓	✓		
EPA3.	✓			✓						✓
EPA4.		✓	✓			✓	✓			
EPA5.					✓		✓			
EPA6.	✓					✓	✓			
EPA7.	✓					✓	✓			
EPA8.							✓			
EPA9.					✓		✓			✓
EPA10.							✓			
EPA11.					✓		✓		✓	
EPA12.	✓			✓						
EPA13.	✓			✓						✓
EPA14.	✓			✓						
EPA15.					✓		✓			✓
EPA16.	✓	✓			✓	✓			✓	
EPA17.	✓					✓	✓		✓	
EPA18.				✓		✓	✓	✓	✓	
EPA19.			✓				✓	✓	✓	
EPA20.		✓	✓			✓	✓			
EPA21.							✓			✓
EPA22.								✓	✓	

Summative Assessment

Dissertation

Objectives

1. The student should be able to demonstrate capability in research by planning and conducting systematic scientific inquiry & data analysis and deriving conclusion.
2. Communicate scientific information for health planning.

Guide for dissertation

1. Chief guide will be allocated from the Department of Orthopaedics.
2. Co - guides can be selected from within the department or from other disciplines related to the dissertation topic.

Submission of dissertation protocol

It should be submitted at the end of six months after admission in the course, in the format prescribed by the institute:

1. Protocol in essence should consist of:
    a) Introduction and objectives of the research project.
    b) Brief review of literature
    c) Suggested materials and methods, and (scheme of work)
    d) Statistician should be consulted at the time of selection of groups, number of cases and method of study. He should also be consulted during the study.
    e) Bibliography
2. The protocol must be presented with in the Department before being forwarded to the Institutional Research Committee (IRC) for review.
3. Protocol must be approved by the research committee, which is appointed by the Dean / Principal to scrutinize the dissertation protocol in references to its feasibility, statistical validity, ethical aspects, etc.
4. Once approved by the IRC, the protocol will be forwarded to the Institutional Human Ethics Committee (IHEC) for review.
5. After presentation and approval of the protocol by the IHEC, the dissertation must be registered in the Clinical Trial Registry of India - http://ctri.nic.in, following which data collection may be initiated.

Submission of dissertation

1. The dissertation shall relate to the candidates own work on a specific research problem or a series of clinical case studies in accordance with the approved plan.
2. The dissertation shall be written in English, printed or typed double line spacing, on white bond paper 22x28 cm with a margin of 3.5 cm, bearing the matter on one side of paper only and neatly bound with the title, the name of the College and University printed on the front cover.
3. The dissertation shall contain: Introduction, review of literature, material and methods, observations, discussion, conclusion and summary and reference as per index medicus.
4. Each candidate shall submit to the Dean four copies of dissertation, through their respective Heads of the Department not later than six months prior to the date of commencement of theory examination in the subject.

Evaluation of Dissertation:

1. The dissertation shall be referred by the University for Evaluation, to External Examiners appointed by the University. The examiners will evaluate and report independently to the Controller of Examinations using Proforma for Dissertation Evaluation Form and recommend whether the dissertation
    a. Accepted as submitted
    b. Accepted pending modification as suggested
    c. Not Accepted for reasons specified

2. The dissertation shall be deemed to be accepted when it has been approved by at least two external examiners, who will allocate marks from which an average will be taken.
3. If the dissertation is rejected by one of the external examiners it shall be referred to another external examiner (other than the one appointed for initial evaluation) whose judgment shall be final for purposes of acceptance or otherwise of the dissertation.
4. Where improvements have been suggested by the external examiners, the candidate shall be required to re - submit the dissertation, after making the required improvements for evaluation.
5. When a dissertation is rejected by the examiners, it shall be returned to the candidate who shall have to rewrite it. The second version of the dissertation, as and when submitted shall be treated as a fresh dissertation and processed.
6. Acceptance of dissertation submitted by the candidate is a pre - condition for his / her admission to the written, oral and practical / clinical part of the examination.
    a. Provided that under special circumstances if the report from one or more examiners is not received by the time the Post - Graduate examination is due, the candidate may be permitted provisionally to sit for the examination but the result be withheld till the receipt of the report, subject to the condition that if the dissertation is rejected then the candidate in addition to writing a fresh dissertation, shall have to reappear for the examination.
7. A candidate whose dissertation stands approved by the examiners but fails in the examination, shall not be required to submit a fresh one if he/she appears in the examination in the same branch on a subsequent occasion.

Eligibility for appearing in the final university exam

- Attendance: 80 % in each year.
- Submission of dissertation and acceptance by external examiner.
- One poster presentation in International/National/ State level conference.
- One oral presentation International/National/ State level conference.
- Submission of one scientific paper for publication to an indexed journal

Theory Examination:

There should be four theory papers, as given below:

PaperI: Basic Sciences as applied to Orthopaedics

PaperII: Orthopaedic diseases

PaperIII: Traumatology and Rehabilitation

PaperIV: Recent advances and subspecialty in Orthopaedic surgery

Each theory paper will be of 100 marks i.e. 4 papers – 100 marks each (Total 400). Each paper will have 10 short essay answer questions of 10 marks each.

Practical shall be as given below:

- The practical examination is structured and consists of 2 sessions- morning and afternoon.

Morning Session – one hour			
Clinical Cases	No	Duration	Marks
Long case	1	30 mins	80
Short cases	3	10 mins (Each)	120

Afternoon Session	Marks distribution
Surgical Anatomy including Osteology& Pathology	25
Instruments	25
Radiology	25
Orthotics and prosthetics	25

- Total Marks allotted:

Segment	Total Marks
Theory (Papers 1 - 4)	400
Practical	200
Viva Voce	100
Grand Total	700

- Recommendations for passing:

1. The candidate will be required to secure minimum 50% marks in theory and 50% marks in clinicals and viva - voce separately, which is mandatory for passing the whole examination.
2. There will be enough gap between theory and practical examination as recommended by NMC rules.
3. There university practical examination will be conducted by 2 external and 2 internal examiners.

10. Blue Print of Theory Exam Paper

Paper I: Applied Basics Science

Sl. No	Discipline	Topics	Weightage	Marks Allotted	No.of Question
1	Anatomy	Musculoskeletal Anatomy	**20%**	**20**	**2**
2	Biochemistry	Metabolic disorders	**10%**	**10**	**1**
3	Physiology	Muscle, bone, Neurovascular system	**10%**	**10**	**1**
4	Pharmacology	Drug usage in general comorbid conditions and Orthopaedic specific	**20%**	**20**	**2**
5	Microbiology	Culture and gram stain of pyogenicTuberculosis infection and sterilisation methods	**10%**	**10**	**1**
6	Pathology	Benign Premalignant and malignant Orthopaedic disorders	**20%**	**20**	**2**
7	Miscellaneous (radiology/ anaesthesia/ general principles).	Radiology related to Orthopaedics. Anaesthesia related to Orthopaedics	**10%**	**10**	**1**

Paper II: Orthopaedic Diseases

Sl. No	Discipline	Topics	Weightage	Marks Allotted	No.of Question
1	Infections	Pyogenic and Tuberculosis and non specific infections of musculoskeletal system	**20%**	**20**	**2**
2	Congenital and developmental disorders	Paediatric Orthopaedics related to Congenital and developmental disorders	**10%**	**10**	**1**
3	Metabolic disorders	Metabolic disorders related to musculoskeletal system	**10%**	**10**	**1**
4	Tumours	Tumours related to musculoskeletal system	**20%**	**20**	**2**
5	Degenerative and autoimmune disorders	Degenerative and autoimmune disorders related to musculoskeletal system	**10%**	**10**	**1**
6	Spine and Neurological disorders	Spine and Neurological disorders	**10%**	**10**	**1**
7	Prosthetics and orthotics	Prosthetics and orthotics	**10%**	**10**	**1**
8	Missellaneous	Missellaneous topics related to musculoskeletal system	**10%**	**10**	**1**

Paper III: Traumatology and Rehabilitation

Sl. No	Discipline	Topics	Weightage	Marks Allotted	No.of Question
1	General principles and miscellaneous	Triaging, Assessing Polytrauma, Multiple injured patients and splints	**20%**	**20**	**2**
2	Upper Limb	Fractures Clavicle, Shoulder, Humerus, Elbow, Forearm, Wrist, hand and dislocations	**20%**	**20**	**2**
3	Lower Limb	Fractures of Femur, Knee, Tibia, Ankle, Foot and dislocations	**20%**	**20**	**2**
4	Pelvis,acetabulum and hip	Fractures of Pelvis, acetabulum, hip and hip dislocations	**20%**	**20**	**2**
5	Spine	Fractures and dislocations of Spine	**20%**	**20**	**2**

Paper IV: Recent Advances & Subspecialty In Orthopaedics

Sl. No	Discipline	Topics	Weightage	Marks Allotted	No.of Question
1	Arthroplasty	Joints reconstruction shoulder, Elbow, Wrist, Hip, Knee & Ankle	**20%**	**20**	**2**
2	Arthroscopy	Shoulder, Elbow, Wrist, Hip, Knee & Ankle	**20%**	**20**	**2**
3	Spine	Recent advances like vertebroplasty, MISS and endoscopy	**10%**	**10**	**1**
4	Trauma	Recent advances in Trauma including metallurgy	**10%**	**10**	**1**
5	Tumours	Recent advances in tumour related to Chemotherapy and Endoprosthesis	**10%**	**10**	**1**
6	General principles and miscellaneous	Recent advances e.g. imaging, implants sterilisation, operating room etc.	**30%**	**30**	**3**

11. Model Question Paper

SRI BALAJI VIDYAPEETH
Paper 1 - M.S ORTHOPAEDICS
MODEL PAPER 1 – BASIC SCIENCES

Answer all questions.

Draw diagrams wherever necessary.

Time – 3 hours **10 x 10 = 100 marks**

1. Discuss the blood supply of the femoral head and its importance in healing of fracture neck of femur.

2. Describe the anatomy of brachial plexus and discuss about Erb's palsy.

3. Write a note on Metabolism of vitamin D. Describe the causes and clinical features, of Hypervitaminosis D.

4. Write a note on Neurogenic bladder.

5. Discuss the various types of biopsies and their value in orthopaedic practice.

6. Write about the Classification of bone tumours.

7. Enumerate the Disease modifying drugs in rheumatic arthritis Elaborate on 4 drugs.

8. Write briefly about the Chemotherapy of bone and joint tuberculosis.

9. Write about ETO sterilization in Orthopaedics.

10. Describe Radioactive isotopes and its clinical application.

SRI BALAJI VIDYAPEETH
Paper 2 - M.S ORTHOPAEDICS
MODEL PAPER 2 – PRINCIPLES AND PRACTICE OF ORTHOPAEDICS (ORTHOPAEDIC DISEASES)

Answer all questions.

Draw diagram wherever necessary.

Time – 3 hours **10 x 10 = 100 marks**

1. Write briefly about Tom smith arthritis of the hip.

2. What are the Atypical manifestation of skeletal tuberculosis

3. Write about Patho anatomy and radiological features of Developmental Dysplasia of the Hip.

4. Write a note on Renal rickets.

5. Write a note on Synovial sarcoma.

6. Enumerate Giant Cell Tumour variants, Discuss the Clinical features and management of Giant Cell Tumour in distal femur.

7. Describe the types, clinical features and management of loose bodies of the knee joint.

8. Describe about Cauda eqina syndrome, its causes, clinical features and management.

9. SACH foot.

10. Describe the Surgical management of Perthes disease.

SRI BALAJI VIDYAPEETH
Paper 3 - M.S ORTHOPAEDICS
MODEL PAPER 3 - TRAUMATOLOGY & REHABILITATION

Answer all the questions.

Time – 3 hours

Draw diagram wherever necessary. **10 x 10 = 100 marks**

1. Describe about Diaphyseal Malunion of fracture of long bones and their management.

2. Classify epiphyseal injuries and their management.

3. Describe the classification, Clinical features, management and its complications of proximal humerus fracture in elderly.

4. Describe carpal instability types and its management.

5. Write a note Classifications, clinical features and management of tibialphilon Fracture.

6. Describe the Classification, Clinical features and management of Peri-prosthetic fracture following Total Hip Replacement.

7. Classify Femoral head fractures, describe the Clinical features and management of neglected fracture of femoral head.

8. Classify acetabular fractures and discuss the principles of management.

9. Classifydorsolumbar spinal injuries, their complications and management.

10. Describe Odontoid Fractures, its Mechanism of injury, radiological features and management.

SRI BALAJI VIDYAPEETH
Paper 4 - M.S ORTHOPAEDICS
MODEL PAPER 4 - RECENT ADVANCES IN ORTHOPAEDICS

Answer all the questions.

Draw diagram wherever necessary.

Time – 3 hours **10 x 10 = 100 marks**

1. Describe aseptic loosening following Total Hip Replacement and mention about its management.

2. Explain Patient specific prosthesis in Total Knee replacement.

3. Write about recent advances in cellular therapy. Add a note on its clinical application in tendinopathies.

4. Enumerate and explain the various fixation devices in ligament reconstruction.

5. Describe the uses of cage in spinal disease and trauma.

6. Write briefly about Damage control surgery in orthopaedics.

7. Write a note on Navigation surgery in Orthopaedics.

8. Explain Tumorembolisation.

9. Write briefly about the recent advances in the management of osteoporosis.

10. Describe Custom made prosthesis in limb salvage surgeries.

12. Recommended Reading (Books Recent Edition)

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 AndTaylor's
6. Arthroscopic Surgery Of The Knee –Johannes
7. Paediatric Orthopaedics – Tachidjian, Vol
8. Concise System of Orthopaedics And Fractures – GrahamApley
9. Orthopaedics And Traumatology –Natarajan
10. Outline Of Fractures Adams,Hamblen
11. Textbook Of Orthopaedics And Trauma – Kulkarni, Vol1
12. B.D. Chaurasia's Human Anatomy, Vol1,Vol 2, Vol3
13. Pharmacology And Pharmacotherapeutics –Satoskar
14. Orthopaedics Anatomy And Surgical Approaches FrederickWreckling
15. The Art Of Aesthetic Plastic Surgery – John R Levis, Vol1
16. Current Concepts In Orthopaedics Dr. D. K.Tareja
17. Custom Mega Prosthesis &Limb Salvage Surgery Dr.Mayilvahanan
18. Advances InOperativeOrthopaedics
19. Green's Operative Hand Surgery-Vol. 1&. 2, Green, David P; Hotchkiss, RobertN
20. Tachdjian'sPediatric Orthopaedics-Vol. 1, Vol 2, Vol 3, Herring, JohnAnthony
21. Surgical Exposures In Orthopedics:The Anatomic Approach, Hoppenfeld, Stanley; De Boer, Piet
22. Adams's Outline Of Orthopaedics, Hamblen, David L; Simpson, HamishR
23. Text Book Of Ilizarov Surgical Techniques Bone Correction And Lengthening, Golyakhovsky, Vladimir; Frankel, VictorH
24. Current Techniques In Total Knee Arthroplasty, Sawhney GS
25. Applied Orthopaedic Biomechanics, Dutta, Santosh;Datta,Debasis
26. Essential Orthopaedics And Trauma, Dandy, David J; Edwards, DennisJ
27. Adams's Outlines Of Fractures;Including Joint Injuries, Hamblen, David L; Simpson, A Hamish RW
28. Orthopedic Physical Assessment, Magee, DavidJ
29. Turek's Textbook Of Orthopaedics Vol 1 &2,Turek's
30. Orthoapedics Surgical Approach, Miller

Journals

1. Journal of Orthopaedic Surgery
2. Clinical Orthopaedics and Related Research
3. Journal of Orthopaedic Trauma
4. JBJS (British & American)
5. OCNA (Orthopaedic clinics of North America)
6. Journal of American Academy of Orthopaedic surgeons (JAAS)
7. Journal of Orthopaedic Surgery and Research
8. IJO (Indian Journal of Orthopaedics)
9. All Index journals related to Orthopaedics- pub med, scopus and Cochrane data base.

13 Annexures - Assessment & Feedback Forms

ANNEXURE 1 – MULTISOURCE EVALUATION SHEET

SRI BALAJI VIDYAPEETH

PILLAIYARKUPPAM, PUDUCHERRY – 607 402

Evaluation sheet for postgraduate clinical work

(To be completed by respective Unit Head/Peers/HCPs/Patient relatives)

Name of the Resident: ……. UIN No.: ……

Name of the Faculty/Peers/HCPs/Patient relatives: ……

Date: ……

Sl. No.	Criteria to be assessed	Score		
		Below par (0)	At par (1)	Above par (2)
	INTERPERSONAL COMMUNCATION SKILLS(IPCS)			
1.	Ability to gather the needed information during History taking and physical examination in a respectful manner.			
2.	Ability to give the necessary information regarding choice of management and guide the patient/attenders to make appropriate decisions.			
3.	Ability to communicate the risks involved for patient care, in an understandable language without making the patient/attenders apprehensive, allowing 2 way communication.			
4.	Ability to be caring and respectful with patients during any procedure.			
5.	Ability to convey the required information clearly to the consultants, peers and other health care workers.			
	PROFESSIONALISM(P)			
1.	Ability to be regular and punctual			
2.	Demonstrate respectfulness and obedience to consultants, peers and other health care workers.			
3.	Ability to accept and follow constructive feedback from consultants, peers and other health care workers.			
4.	Ability to maintain emotional balance during triggering situations, people and environment.			
5.	Makes their presence respectful, with their physical appearance and wearing appropriate attire.			
	IPCS Total score: IPCS Final score= IPCS Total score*10			
	Milestone Level: IPCS=1 0 - 20%, IPCS=2 20 - 40%,.IPCS=3 40 - 60%, IPCS=4 60 - 80%, IPCS=5 80 - 100%,			
	P Total score: P Final score= P Total score*10			
	Milestone Level: 0 - 20%, P=1. 20 - 40%, P=2. 40 - 60%, P=3. 60 - 80%, P=4. 80 - 100%, P=5			
	Signature:			

ANNEXURE 2–SEMINAR
SRI BALAJI VIDYAPEETH
PILLAIYARKUPPAM, PUDUCHERRY – 607 402
Evaluation sheet for postgraduate seminar
(To be marked individually by each faculty)

Name of the Resident: …….. UIN No ……
Name of the Faculty: …… Date: ……

S. No.	Criteria to be assessed	*Score (1 – 10)
1	Introduction of subject and its importance / Objectives	
2	Completeness of presentation	
3	Cogency of presentation	
4	Consulted all relevant literature	
5	Use of audio - visual aids	
6	Understanding of subject	
7	Summary and take home message	
8	Cites appropriate references / suggests further reading	
9	Time management	
10	Overall performance – relevant answers to questions, attitude during presentation and confidence	

***Score interpretation – 1-3->Needs improvement; 4-6->Meets expectations; 7-9->Exceeds expectation; 10->Outstanding.**

General Comments:
Highlights in performance (strengths)
Possible suggested areas for improvement (weakness)
Signature

ANNEXURE 3 – JOURNAL CLUB

SRI BALAJI VIDYAPEETH

PILLAIYARKUPPAM, PUDUCHERRY – 607 402

Evaluation sheet for postgraduate journal club

(To be marked individually by each faculty)

Name of the Resident: …….. UIN No: ……

Name of the Faculty: ……. Date: ……...

S. No.	Criteria to be assessed	*Score(1-10)
1	Relevance of article chosen	
2	Identifies the problem addressed in the paper	
3	Completeness of presentation	
4	Analyses and gives comments on methodology and statistics	
5	Brief summary of results	
6	Comparison of work with other published work	
7	Merits and demerits of the paper	
8	Summary and take home message	
9	Time management	
10	Overall performance – relevant answers to questions, attitude during presentation and confidence	

***Score interpretation – 1-3->Needs improvement; 4-6->Meets expectations; 7-9->Exceeds expectation; 10->Outstanding.**

General Comments:
Highlights in performance (strengths)
Possible suggested areas for improvement (weakness)
Signature:

ANNEXURE 4 - CASE PRESENTATION
SRI BALAJI VIDYAPEETH
PILLAIYARKUPPAM, PUDUCHERRY – 607 402
Evaluation sheet for postgraduate case presentation

(To be marked individually by each faculty)

Name of the Resident: …….. UIN No: ……

Name of the Faculty: …… Date: …….

S. No.	Criteria to be assessed	*Score (1-10)
1	Logical order in presentation (History taking)	
2	Cogency of presentation	
3	Accuracy and completeness of general and local physical examination	
4	Other systemic examination	
5	Summarizes the case and analyses the appropriate differential diagnoses	
6	Whether the diagnosis follows logically from history and findings	
7	Investigations required : Completeness of list, relevant order, interpretation of investigations	
8	Management principles and details	
9	Time management	
10	Overall performance – relevant answers to questions, attitude during presentation and confidence	

***Score interpretation – 1-3->Needs improvement; 4-6->Meets expectations; 7-9->Exceeds expectation; 10->Outstanding.**

General Comments:
Highlights in performance (strengths)
Possible suggested areas for improvement (weakness)
Signature:

ANNEXURE 5 - EPA ASSESSMENT FORM

SRI BALAJI VIDYAPEETH

PILLAIYARKUPPAM, PUDUCHERRY-607402

DEPARTMENRT OF ORTHOPAEDICS

STUDENT NAME: **UIN No:**

PGY: **ASSESSMENT NO:**

FACULTY: **DATE:**

1. Gather a history and perform a physical examination	MK 6 L3	MK7 L3	MK8 L3	PC/PS6 L3	PC/PS7 L3	PC/PS8 L3	IPCS1 L2	IPCS2 L2	P1 L2	P2 L2
2. Prioritize a differential diagnosis following a clinical outcome	MK 6 L3	MK7 L3	MK8 L3	PC/PS6 L3	PC/PS7 L3	PC/PS8 L3	IPCS1 L2	IPCS2 L2	P1 L2	P2 L2
3. Recommend and interpret common diagnostic and screening tests	MK 1 L3	PC/PS1 L3	IPCS1 L2	IPCS2 L2	P1 L3	P2 L3				
4. Enter and discuss orders and prescriptions	MK 9 L3	PC/PS9 L3	SBP1 L2	PBLI1 L2	IPCS1 L2	IPCS2 L2	P1 L2			
5. Document a clinical encounter in the patient record.	MK 4 L3	PC/PS4 L3	SBP1 L2	IPCS1 L2	IPCS2 L2	P1 L2	P2 L2			
6. Provide an oral presentation of a clinical encounter	MK 6 L3	PC/PS6 L3	PBLI1 L2	IPCS1 L2	IPCS2 L2	P1 L2	P2 L2			
7. Recognize a patient requiring urgent or emergent care and initiate evaluation and management	MK 6 L3	PC/PS6 L3	IPCS1 L2	IPCS2 L2	P1 L2	P2 L2				
8. Give or receive a patient handover to transition care responsibility	MK 10 L3	PC/PS10 L3	PBLI1 L2	IPCS1 L2	IPCS2 L2	P1 L2				
9. Obtain informed consent for test and/or procedures	MK 4 L3	PC/PS4 L3	SBP1 L2	IPCS1 L2	IPCS2 L2	P1 L2	P2 L2			
10. Collaborate as member of an inter professional team	SBP1 L3	IPCS1 L2	IPCS2 L2	IPCS3 L2	P1 L2	P2 L2	P3 L3			
11. Form clinical questions and retrieve	MK 4	PC/PS11	PC/PS12	PBLI1 L2	IPCS3	P2 L2				

evidence to advance patient care.	L3	L3	L3		L2				
12. Orthopaedic & Radiology and related investigations	MK 1 L3	PC/P S1 L3	SBP1 L3	PBLI 1 L3	IPCS 1 L3	IPCS 2 L3	P1 L3	P2 L3	
13. Splints and tractions	MK 2 L3	PC/P S2 L3	SBP1 L3	PBLI 1 L3	PBLI 2 L3	P1 L3	P2 L3		
14. Wound care	MK 3 L3	PC/P S3 L3	SBP1 L3	IPCS 1 L3	IPCS 2 L3	P1 L3	P2 L3		
15. Medical documentation	MK 4 L3	PC/P S4 L3	SBP1 L3	PBLI 1 L3	IPCS 1 L3	IPCS 2 L3	P1 L3	P2 L3	
16. Performing and assisting Trauma Procedures including metallurgy knowledge	MK 5 L3	PC/P S5 L3	SBP1 L3	IPCS 1 L3	IPCS 2 L3	PBLI 1 L3	P1 L3	P2 L3	
17. Triaging and resuscitation in Orthopaedic emergencies and referrals (Inter & Intra)	MK 6 L3	PC/P S6 L3	SBP1 L3	PBLI 1 L3	IPCS 1 L3	IPCS 2 L3	P1 L3	P2 L3	
18. Sub speciality surgeries	MK 7 L3	PC/P S7 L3	SBP1 L3	PBLI 1 L3	IPCS 1 L3	IPCS 2 L3	P1 L3	P2 L3	P3 L3
19. Orthopaedic diseases and Rehabilitation	MK 8 L3	PC/P S8 L3	SBP1 L3	PBLI 1 L3	P1 L3	P2 L3	P3 L3		
20. Prescription and medications in Orthopaedics	MK 9 L3	PC/P S9 L3	SBP1 L3	PBLI 1 L3	IPCS 1 L3	IPCS 2 L3	P1 L3	P2 L3	P3 L3
21. Communication skills	MK 10 L3	PC/P S10 L3	SBP1 L3	PBLI 1 L3	IPCS 1 L3	IPCS 2 L3	P1 L3	P2 L3	P3 L3	P4 L3
22. Research and critical appraisal of literature	MK 11 L3	PC/P S12 L3	SPB1 L3	IPCS 2 L3	PBLI 1 L3	P2 L3			

FACULTY:
DATE:

Key for assigning Grade of entrustability

Grade	1	2	3	4	5
Entrustability	Can observe and assist	Can perform with strict supervision	Can perform with loose supervision	Can perform independently	Expert

EPA	Grade of Entrustability
EPA1.	
EPA2.	
EPA3.	
EPA4.	
EPA5.	
EPA6.	
EPA7.	
EPA8.	
EPA9.	
EPA10.	
EPA11.	
EPA12.	
EPA13.	
EPA14.	
EPA15.	
EPA16.	
EPA17.	
EPA18.	
EPA19.	
EPA20.	
EPA21.	
EPA22.	

Comments

Signatures	
Resident	
Faculty	
Head of the Department	

ANNEXURE 6 – EPA PROGRESS SHEET

EPA	GRADE OF ENTRUSTABILITY								
	PG Y1					PG Y2		PG Y3	
	0	3 Months	6 MONTHS	9 MONTHS	12 MONTHS	6 MONTHS	12 MONTHS	6 MONTHS	12 MONTHS
Date Assessed									
EPA1.									
EPA2.									
EPA3.									
EPA4.									
EPA5.									
EPA6.									
EPA7.									
EPA8.									
EPA9.									
EPA10.									
EPA11.									
EPA12.									
EPA13.									
EPA14.									
EPA15.									
EPA16.									
EPA17.									
EPA18.									
EPA19.									
EPA20.									
EPA 21.									
EPA22.									
Candidates sign									
HOD Sign									

ANNEXURE 7 – DISSERTATION EVALUATION FORM
SRI BALAJI VIDYAPEETH
PILLAIYARKUPPAM, PUDUCHERRY – 607 402
Proforma for evaluation of Dissertation

UIN: ……..

Topic of the Study:
_____
_____

DISSERTATION COMPONENTS	Grade		
TITLE			
Title appropriate and clear	A	B	C
INTRODUCTION			
Purpose of the Study	A	B	C
Hypothesis/Research Question	A	B	C
Aims & Objectives	A	B	C
REVIEW OF LITERATURE			
Appropriate	A	B	C
Complete and current	A	B	C
METHODS			
Study subjects, controls, Inclusion and Exclusion criteria	A	B	C
Materials/Apparatus/Cases	A	B	C
Methodology used	A	B	C
Procedure for data collection	A	B	C
Appropriate statistical methods employed	A	B	C
Handling of ethical issues	A	B	C
RESULTS			
Logical organization of data	A	B	C
Appropriate use of charts, tables, Graphs, figures, etc.	A	B	C
Statistical/Clinical interpretation	A	B	C
DISCUSSION			
Appropriate to data	A	B	C
Discussion and implication of results	A	B	C
Comparison with other studies	A	B	C
Satisfactory explanation of deviations if any	A	B	C
Limitations of the study	A	B	C
Recommendation for future studies	A	B	C
CONCLUSION			
Relevance, are they in line with aims	A	B	C
SUMMARY			
Clear and Concise	A	B	C
REFERENCES			
Vancouver Format and appropriately cited in text.	A	B	C

Key for grading – A – Exceeds expectation, B – Meets expectation, C – Needs Improvement

Overall Impression

(Please check the appropriate box)

- ☐ Accepted as submitted
- ☐ Accepted pending modification as suggested below
- ☐ Not Accepted for reasons specified below

Remarks:

Signature of the examiner with date