Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)
				ORTHOPEI
Topic: Skeletal Trauma, Poly trauma			**Number of competencies : (06)**	
OR1.1	At the end of session phase III part II MBBS students must be able to **describe and discuss the Principles of pre-hospital care and Casuality management of a trauma victim including principles of triage-**	K/S/A/C	K/KH	Y
OR1.11	Describe the principles of triage and their importance in mass casuality and disaster.			
OR1.12	Discuss the prehospital and casuality management of trauma victim according to principles of triage.			
OR1.13	Identify the patient's condition and decide the treatment according to triage principles.			
OR1.14	Counsel the attendant and patient about the seriousness of injury and treatment option.			
OR1.2	At the end of session phase III part II MBBS students must be able to **describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of shock-**	K/S	K/KH	Y
OR1.21	Describe etiopathogenesis of shock and investigation.			
OR1.22	Describe type of shock and their clinical features.			
OR1.23	Discuss differentiating features of shock and its treatment or management.			
OR1.24	Document the clinical features and findings of investigations of a patient in shock.			
OR1.25	Able to classify /categorize the patient on given clinical parameters.			
OR1.3	At the end of session phase III part II MBBS students must be able to **describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of soft tissue injuries-**	K	KH/SH	Y
OR1.31	Describe etiopathogenesis of soft tissue injuries.			

OR1.32	Describe clinical features of soft tissue injury and investigation.			
OR1.33	Discuss different types of soft tissue injury.			
OR1.34	Interpret the vital condition of soft tissue (viable and non viable) and management of injury.			
OR1.4	At the end of session phase III part II MBBS students must be able to **describe and discuss the Principles of management of soft tissue injuries-**	K	K/KH	Y
OR1.41	Describe principles of management of soft tissue injury.			
OR1.42	Discuss debribement and need of it.			
OR1.43	Able to discribe the complications of soft tissue injury.			
OR1.5	At the end of session phase III part II MBBS students must be able to **describe and discuss the aetiopathogenesis, clinical features, investigations, and principles of management of dislocation of major joints, shoulder, knee, hip-**	K	K/KH	Y
OR1.51	Describe etiopathogenesis of shoulder, knee, hip dislocation and anatomy of these joints.			
OR1.52	Describe clinical features of hip,knee and shoulder dislocation			
OR1.53	Discuss differentiating clinical and radiological features of different types of hip, knee and shoulder dislocation.			
OR1.54	Describe complication of shoulder, knee and hip dislocation and prognosis of it.			
OR1.55	Discuss different management methods and their uses in shoulder, knee and hip dislocation.			

OR1.6	At the end of session phase III part II MBBS students must be able to **participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation-**	K/S/AC	SH	Y
OR1.61	Differentiate type of shoulder,knee and hip dislocation.			
OR1.62	Identify the complications of hip, knee and shoulder dislocation and interpret them.			
OR1.63	Counsel about the prognosis treatment and complication of hip, knee and shoulder dislocation.			
OR1.64	Demonstrate the methods of close reduction of shoulder knee and hip joint.			
OR1.65	Able to counsel the patient before doing the reduction procedure.			
Topic: Fractures		**Number of competencies : (16)**		
OR2.1	At the end of session phase III part II MBBS students must be able to **describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle-**	K/S	KH/SH	Y
OR2.11	Describe the mechanism of injury of fracture clavicle, clinical features and investigation.			
OR2.12	Discuss various management of fracture of clavicle.			
OR2.13	Demonstrate the method of application of figure of 8 bandage and cuff and collar sling application.			
Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core (Y/N)**
OR2.2	At the end of session phase III part II MBBS students must be able to **describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus.**	K	KH/ SH	Y
OR2.21	Describe the various mechanism of the injury of fracture of proximal humerus.			
OR2.22	Describe clinical features, complications and investigations of fracture of proximal humerus.			
OR2.23	Discuss various methods of management of fracture of proximal humerus.			

OR2.24	Demonstrate steps of close reduction of fracture proximal humerus and application of U slab.			
OR2.3	At the end of session phase III part II MBBS students must be able to **select, prescribe and communicate appropriate medications for relief of joint pain.**	K	KH/SH	Y
OR2.31	Describe various causes of joint pain traumatic and pathological and investigation			
OR2.32	Discuss clinical features of joint pain of various pathology			
OR2.33	Interpret the clinical, radiological features, lab investigations with history of joint pain to make the diagnosis of joint pain.			
OR2.34	Discuss various treatment methods and medications for joint pain.			
OR2.4	At the end of session phase III part II MBBS students must be able to **describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on**	K/S	K/KH	Y
OR2.41	Describe mechanism of injury, clinical features, complications and investigations of fracture shaft of humerus.			
OR2.42	Discuss various treatment methods of management of fracture of shaft of humerus.			
OR2.43	Describe mechanism of injury of distal humerus and classification of fracture distal humerus. Supracondylar, intercondylar and unicondylar.			
OR2.44	Describe the clinical features of various types of fracture distal humerus and their immediate, early and late complications and management of complications.			
OR2.45	Discuss the clinical tests, signs and symptoms of neurovascular deficit in fracture of shaft humerus and distal humerus.			
OR2.46	Interpret the clinical features, signs and symptoms of neurovascular deficit and investigations of neurovascular deficit.			
OR2.5	At the end of session phase III part II MBBS students must be able to **describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm, Galeazzi and Monteggia injury.**	K	K/KH	Y
OR2.51	Describe etiopathogenesis, mechanism of injury and various types of fracture of bones of forearm.			
OR2.52	Describe the clinical features, complications and investigations of fracture of forearm bones.			
OR2.53	Discuss various treatment method for fracture of forearm bones according to age, pathology and open/close fratures.			
OR2.54	Discuss differences between monteggia and galazzie fracture.			
OR2.6	At the end of session phase III part II MBBS students must be able to **describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius.**	K	KH	Y
OR2.61	Describe etiopathogenesis, mechanism of injury, clinical features and investigations of fracture distal end of radius.			
OR2.62	Enumerate various types of fracture of distal end radius and their specific clinical features.			
OR2.63	Discuss principle of management of fracture of distal end radius.			

OR2.64	Describe the various complications of fracture of distal end radius.			
OR2.7	At the end of session phase III part II MBBS students must be able to **describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability-**	K	K/KH/ SH	Y
OR2.71	Describe etiopathogenesis, mechanism of injury, clinical features and investigation of pelvic injury.			
OR2.72	Describe various complications and associated injury of pelvic fracture, able to discuss about important blood vessels aroud pelvis.			
OR2.73	Discuss various type of management of pelvic injuries and how to assess and manage the heamodynamic instability.			
OR2.74	Demonstrate how to apply pelvic binder and examination of pelvic injury- pelvic compression distration test.			
OR2.8	At the end of session phase III part II MBBS students must be able to **describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient-**	K	K/KH	Y
OR2.81	Describe various etiopthogenesis and mechanism of spinal injury.			
OR2.82	Describe clinical feature(neurological examination) and investigation of spinal injury.			
OR2.83	Discuss various types of spinal injury and their management and principle of management.			
OR2.84	Discuss the precautions and method of mobilization of spinal injury patient.			
OR2.85	Discuss various complications of spinal injury and prevention of them.			
OR2.86	Able to discuss about spinal cord and their relation to vertebrae.			
OR2.9	At the end of session phase III part II MBBS students must be able to **describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture-**	K	K/KH	Y
OR2.91	Describe mechanism of injury of acetabular fracture and antomy of hip joint.			
OR2.92	Describe investigation and clinical feature of acetabular fracture.			
OR2.93	Discuss principle of management of acetabular fracture and various type of complications and their management.			

Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
)ICS				
	Number of procedures that require certification: (NIL)			
Lecture with video, Small group discussion	Written/ Viva voce/ OSCE/ Simulation			General Surgery, Anaesthesiology
Lecture	Written/ Viva voce/ OSCE/ Simulation			General Surgery
Lecture, Small group discussion	Written/ OSCE			General Surgery

Lecture, Small group discussion	Written/ Assesment/ Viva voce			General Surgery
Lecture, Small group discussion, Bed side clinic	Written/ Viva voce/ OSCE/ Simulation			

Simulation, DOAP session	OSCE/ Simulation			

Number of procedures that require certification:
(NIL)

Lecture, Small group discussion, Bed side clinic	Written/ Viva voce/ OSCE		Human Anatomy	
Suggested Teaching Learning method	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**	**Horizontal Integration**
Lecture, Small group discussion, Bed side clinic	Written/ Viva voce/ OSCE		Human Anatomy	

Lecture, Small group discussion, Bed side clinic	Written/ Viva voce/ OSCE		Human Anatomy	
Lecture, Small group discussion, Bed side clinic	Written/ Viva voce/ OSCE		Human Anatomy	
Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	

Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	

Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**
OR2.10	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur-**	K/S/A/C
OR2.101	Describe etiopathogenesis and mechanism of injury of fracture of proximal femur.	
OR2.102	Describe investigations and types of fracture of proximal femur	
OR2.103	Discuss various types of fracture of proximal femur and their clinical features	
OR2.104	Identify the types of fracture of proximal femur in a set of given clinical features, attitude of limb and deformity.	
OR2.105	Discuss various complications of fracture of proximal femur.	
OR2.106	Discuss principle of management of various types of fractures of proximal femur.	
OR2.107	Demonstrate the application of thomas knee splint or AK traction.	
OR2.108	Counsel the patient about prognosis of fracture neck of femur , its complications and available treatment methods.	
OR2.11	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of** **(a) Fracture patella (b) Fracture distal femur (c) Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome-**	K
OR2.111	Describe etiopathogenesis and mechanism of injury of fracture distal femur, fracture patella and fracture proximal tibia.	
OR2.112	Describe investigations, classification and principle of management of fracture of proximal tibia, distal femur and patella .	
OR2.113	Discuss complication of fracture distal femur, patella and proximal tibia .	
OR2.114	Discuss complications of fracture of proximal tibia, clinical feature of neurovascular deficit and treatment of compartment syndrome.	

OR2.12	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication-**	K
OR2.121	Describe etiopathogenesis and mechanism of injury of fracture shaft of femur.	
OR2.122	Describe clinical features and investigations of fracture shaft femur.	
OR2.123	Discuss various complications of fracture of shaft femur and their investigations , clinical and radiological features and management.	
OR2.124	Discuss the principle of management of fracture shaft femur in different age group.	
OR2.125	Enumerate age wise treatment method for fracture shaft femur.	
OR2.13	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of:** **(a) Fracture both bones leg** **(b) Calcaneus** **(c) Small bones of foot-**	K
OR2.131	Describe etiopathogenesis and mechanism of injury of 1. fracture both bones leg 2. fracture calcanium 3.fracture of small bones of foot	
OR2.132	Describe type, clinical feature and investigation of 1.fracture both bones leg 2.fracture calcanium 3.fracture of small bones of foot	
OR2.133	Discuss principle of management and complication of 1.fracture both bones leg 2.fracture calcanium 3.fracture of small bones of foot	
OR2.14	At the end of session phase III part II MBBS student must be able to describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures-	K/S/C

OR2.141	Describe etiopathogenesis and mechanism of injury and classification of ankle fracture.	
OR2.142	Describe clinical feature, types and investigation of ankle fracture.	
OR2.143	Discuss principle of management and complication of ankle fracture	
OR2.144	Demonstrate the application of well padded BK SLAB/ Crepe bandage.	
OR2.145	Inform patient about RICE therepy and complication of ankle injury and various treatment methods.	
OR2.15	At the end of session phase III part II MBBS student must be able to **plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome-**	K/S
OR2.151	Describe the causes and clinical features of complication of fracture (i) malunion, (ii)non union, (iii) infection and (iv) compartment syndrome	
OR2.152	Interpret the clinical, radiological and lab investigations to make the diagnosis of complications of fracture (i) malunion, (ii)non union, (iii) infection and (iv) compartment syndrome	
OR2.153	Identify the cause of complication of fracture in case of (i) malunion, (ii)non union, (iii) infection and (iv) compartment syndrome	
OR2.154	Discuss the prevention of various complication of fracture and their treatment.	
OR2.16	At the end of session phase III part II MBBS student must be able to **describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection prevention and management-**	K

OR2.161	Describe the mechanism of open fracture, its classification and clinical features	
OR2.162	Discuss the principle of management of open fractures and principle of debridement.	
OR2.163	Discuss prevention of infection in a case of open fracture and ,management of infected open fracture.	
Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**

Topic: Musculoskeletal Infection

Number of competencies : (03)

Number of Procedures that require certification: (NIL)

OR3.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections** **a) Acute Osteomyelitis** **b) Subacute osteomyelitis** **c) Acute Suppurative arthritis** **d) Septic arthritis & HIV infection** **e) Spirochaetal infection** **f) Skeletal Tuberculosis-**	K/S
OR3.11	Describe etiopathogenesis and clinical feature of acute osteomyelitis and subacute osteomyelitis	
OR3.12	describe investigation and radiological feature of acute osteomyelitis and subacute osteomyelitis	
OR3.13	Discuss principle of management and complication of acute osteomyelitis and subacute osteomyelitis	
OR3.14	Identify the acute osteomyelitis and subacute osteomyelitis from a given set of clinical and radiological feature.	

OR3.15	Describe etiopathogenesis and clinical feature of various joint infections (i) acute suppurative arthritis (ii) spirocheatal infection (iii) septic arthritis and hiv infetion (iv) skeletal TB	
OR3.16	Discuss various investigation and principle of management of joint infection.	
OR3.17	Interpret/identify the cause of joint infection from a given set of histopathological feature/ joint fluid analysis.	
OR3.2	At the end of session phase III part II MBBS student must be able to **participate as a member in team for aspiration of joints under supervision-**	K/S/A/C
OR3.21	Describe indicaton and steps of joint aspiration.	
OR3.22	Demonstrate steps of joint aspiration with all aseptic measures.	
OR3.23	Interpret the findings of joint fluid analysis to make the diagnosis	
OR3.24	Counsel the patient about joint aspiration procedure and its importance	
OR3.3	At the end of session phase III part II MBBS student must be able to **participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy-**	K/S/A/C
OR3.31	Enumerate the indication and steps of I & D, sequestrectomy, saucerization and arthrotomy.	
OR3.32	Demonstrate steps of I & D, sequestrectomy, saucerization and arthrotomy.	
OR3.33	Assist or observe the procedure of I & D, sequestrectomy, saucerization and arthrotomy.	
OR3.34	Identify the procedure in a set of steps of procedure or video demonstration.	

Topic: Skeletal Tuberculosis

Number of competencies : (01)

Number of procedures that require certification: (NIL)

OR4.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the clinical features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess and caries spine-**	K
OR4.11	Describe pathogenesis and clinical features of TB of hip and knee joint and spine.	
OR4.12	Describe various investigations and principles of management of TB of hip and knee joint and spine.	
OR4.13	Describe various complication of TB of hip, knee joint and spine and their management.	
OR4.14	Identify the clinical and radiological features of TB of hip and knee joint and spine from a given set of clinical and radiological finding.	

disorders

Number of competencies : (01)

Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**
OR5.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of various inflammatory disorder of joints-**	K
OR5.11	Describe etiopathogenesis and clinical featutres of various inflammatory disorders of joint.	
OR5.12	Discuss various investigation and principle of management of inflammatory joint disorder.	

Number of competencies : (01)		
Number		
OR6.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine (Cervical Spondylosis, Lumbar Spondylosis, PID)-**	K
OR6.11	Describe etiopathogenesis and clinical features of cervical spondylosis, lumber spondylosis and PIVD (Prolapse intervertibral disk).	
OR6.12	Enummerate various investigation to diagnose degenerative condition of spine.	
OR6.13	Discuss different treatment modalities and lifestyle modification in treatment of cervical spondylosis, lumber spondylosis and PIVD (Prolapse intervertibral disk).	
OR6.14	Discuss the principle of management of cervical spondylosis, lumber spondylosis and PIVD (Prolapse intervertibral disk).	
Number of competencies : (01)		
OR7.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets, Paget's disease-**	K
OR7.11	Describe etiopathogenesis and clinical features of osteoporosis, osteomalacia, rickets and pagets disease.	
OR7.12	Describe various investigation of metabolic bone disease.	
OR7.13	Discuss clinical, lab and radiological features of osteoporosis, osteomalacia, rickets and pagets disease.	
OR7.14	Discuss the principle of management of metabolic bone disease (osteoporosis, osteomalacia, rickets and pagets disease).	

Topic: Poliomyelitis

Number of competencies : (01)

Number of procedures that require certification: (NIL)

OR8.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post Polio Residual Paralysis-**	K
OR8.11	Describe etiopathogenesis and clinical features of poliomyelitis.	
OR8.12	Discuss assesment of post polio residual paralysis.	
OR8.13	Discuss principle of management of post polio residual paralysis.	

Topic: Cerebral Palsy

Number of competencies : (01)

Number of procedures that require certification: (NIL)

Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**
OR9.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient-**	K
OR9.11	Describe etiopathogenesis of cerebral palsy and its clinical features and types	
OR9.12	Discuss assesment and principle of management of cerebral palsy	

Topic:Bone Tumors

Number of competencies : (01)

Number of procedures that require certification: (NIL)

OR10.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of benign and malignant bone tumours and pathological fractures-**	K
OR10.11	Describe etiopathogenesis of beningn bone tumor, malignant bone tumor and pathological fracture.	
OR10.12	Discuss about various investigation to diagnose benign and malignant tumor.	
OR10.13	Discuss principle of management and complication of benign and malignant tumor.	
OR10.14	Discuss clinical and radiological feature of benign and malignant tumor.	

Topic: Peripheral nerve injuries

Number of competencies : (01)

Number of procedures that require certification: (NIL)

OR11.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves-**	K
OR11.11	Describe the etiopathogenesis of peripheral nerves injury (radial, ulnar, medial, lateral peronial and sciatic nerve)	
OR11.12	Describe the clinical features and varioud investigation of peripheral nerves injury.	
OR11.13	Discuss the principle of management of peripheral nerve injury and their sequalae like foot drop, wrist drop and claw hand.	

OR11.14	Discuss role of physiotherapy and various splint use to correct the deformity in peripheral nerve injuries.

Topic: Congenital lesions

Number of competencies : (01) **A101:C106**

Number of procedures that require certification: (NIL)

OR12.1	At the end of session phase III part II MBBS student must be able to **describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of:** **a. limbs and spine - Scoliosis and spinal bifida** **b. Congenital dislocation of Hip,Torticollis,** **c. congenital talipes equino varus-**	K
OR12.11	Describe clinical features and investigations of scoliosis, spina bifida and torticollis	
OR12.12	Describe clinical features and investigation and clinical tests of congenital dislocation of hip joint.	
OR12.13	Discuss principle of management of congenital dislocation of hip according to age.	
OR12.14	Describe Etiopathogenesis, clinical feature, investigation and clinical tests of CTEV.	
OR12.15	Discuss principle of management of CTEV according to age of patient.	
OR12.16	Discuss various surgical treatment of CTEV.	
OR12.17	Enumerate the structure released in PMSTR procedure.	

Topic: Procedural Skills

Number of competencies : (02)

Number of procedures that require certification: (NIL)

Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**

OR13.1	At the end of session phase III part II MBBS student must be able to **participate in a team for procedures in patients and demonstrating the ability to perform on mannequins / simulated patients in the following:** **i. Above elbow plaster** **ii. Below knee plaster** **iii. Above knee plaster** **iv. Thomas splint** **v. splinting for long bone fractures** **vi. Strapping for shoulder and clavicle trauma**	S/A
OR13.11	Discuss the indications, extent of POP slab and cast AE(above elbow),BE(below elbow), BK(below knee) AND AK(Above knee)	
OR13.12	Discuss commonly used splint in orthopedics and enumerate their indications.	
OR13.13	Demonstrate ability of applying AE(above elbow),BE(below elbow), BK (below knee)AND AK(Abovw knee) POP slab and cast to correct extent and correct functional position of joint in a mannequens or simmulated patient	
OR13.14	Demonstrate application of Thomas knee splint and plint for long bone fracture in a mannequins or simmulated patient.	
OR13.2	At the end of session phase III part II MBBS student must be able to **participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following :** **(a) I.V. access central - peripheral** **(b) Bladder catheterization** **(c) Endotracheal intubation** **(d) Splintage**	S/A
OR13.21	Discuss the various procedure used in resuscitation of a polytrauma patient.	
OR13.22	Discuss the correct method of I/v access - central and peripheral, bladder catheterization, endotracheal intubation and splintage.	
OR13.23	Demonstrate the correct method of I/v line, bladder catheterization, ET tube and splintage in a mannequins/ emergency department after observing assisting these procedure in emergency room.	
Topic: Counselling Skills		**Number of com**
OR14.1	At the end of session phase III part II MBBS student must be able to **demonstrate the ability to counsel patients regarding prognosis in patients with various orthopedic illnesses like** **a. fractures with disabilities** **b. fractures that require prolonged bed stay** **c. bone tumours** **d. congenital disabilities**	K/S/A/C
OR14.11	Discuss disabilities due to fractures and fracture require prolong bed rest and complications of prolong bed stay and prevention.	
OR14.12	Discuss prognosis and treatment of various bone tumors.	

OR14.13	Discuss common congenital diabilities and their treatment option and prognosis.	
OR14.14	Counsel the patient (simulated) about the prognosis and treatment of (i) fractures and disabilities, (ii) complication and precaution of prolong bed rest, (iii) about the type of diagnosed bone tumor and treatment option and prognosis and (iv) congenital disability CTEV its treatment and prognosis.	
OR14.2	At the end of session phase III part II MBBS student must be able to **demonstrate the ability to counsel patients to obtain consent for various orthopedic procedures like limp amputation, permanent fixations etc..**	K/S/A/C
OR14.21	Discuss what is consent, why its compulsary and who can give it.	
OR14.22	Enumerate various point that must be in a consent form.	
OR14.23	Councel the simmulated/ role model patient about consent for amputation and permanent fixation; and take the consent in proper format.	
Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**
OR14.3	At the end of session phase III part II MBBS student must be able to **demonstrate the ability to convince the patient for referral to a higher centre in various orthopedic illnesses, based on the detection of warning signals and need for sophisticated management**	K/S/A/C
OR14.31	Discuss various orthopaedic illness/ trauma needs sophIsticated treatment.	
OR14.32	Counsel the patient/ attendent about condition/ disease of patient and available facility in your hospital and treatment of patient.	
OR14.33	counsel patient (role model) for need of referal and treatment.	

	Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently, Column F: DOAP session – Demonstrate, Observe, Assess, Perform. **Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**

Integration

Human Anatomy		
AN2.4	At the end of session phase III part II MBBS student must be able to **describe various types of cartilage with its structure & distribution in body.**	K
AN/OR2.41	Enumerate large cartilaginous joints of human body.	
AN/OR2.42	discuss developmental and degenerative disease of cartilage.	
AN2.5	At the end of session phase III part II MBBS student must be able to **describe various joints with subtypes and examples**	K
AN2.51OR1	Enumerate the type of joints with example	
OR2	Discuss the movements present in different type of joint	
AN8.4	At the end of session phase III part II MBBS student must be able to **demonstrate important muscle attachment on the given bone**	K/S
OR1	Describe muscle attachment of a given bone end.	
OR2	Demonstrate muscle attachment on cadaver/ specimen	
AN8.6	At the end of session phase III part II MBBS student must be able to **describe scaphoid fracture and explain the anatomical basis of avascular necrosis**	K
OR1	Describe blood supply of scaphoid	
OR2	Discuss location of scaphoid most prone for AVNand cause of it and treatment	
Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**

AN10.12	At the end of session phase III part II MBBS student must be able to **describe and demonstrate Shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy**	K/S
OR1	Describe anatomical feature of shoulder.	
OR2	Describe muscle of rotator cuff, there action and clinical features of rotator cuff tear	
OR3	Demonstrate- movement of shoulder joint	
OR4	Discuss etiopathogenesis, clinical features and method of reductionof shoulder joint dislocation	
OR5	Demonstrate how to examine axillary nerve injury.	
AN11.4	At the end of session phase III part II MBBS student must be able to **describe the anatomical basis of Saturday night paralysis**	K
OR1	Describe etiopathogenesis of Saturday night palsy	
OR2	Enumerate various muscvle supplied by radial nerve.	
AN17.2	At the end of session phase III part II MBBS student must be able to **describe anatomical basis of complications of fracture neck of femur.**	K
OR1	Enumerate various complications of fracture neck of femur	
OR2	At the end of session phase III part II MBBS student must be able todiscuss various treatment methods of fracture neck of femur age wise.	
AN17.3	At the end of session phase III part II MBBS student must be able to **describe dislocation of hip joint and surgical hip replacement**	K
OR1	Describe etiopathogenesis of hip dislocation.	
OR2	Discuss types of hip dislocation and attitude of limb and complication of hip dislocation	
OR3	Enumerate various method of reduction of hip dislocation.	
OR4	Discuss various types of hip replacement and their uses.	
AN18.6	At the end of session phase III part II MBBS student must be able to **describe knee joint injuries with its applied anatomy**	K
OR 1	Describe various structures which play important role in stability of knee	
OR2	Enumerate various clinical tests use to check the stability of knee	
OR3	Enumerate important neurovascular structure around knee joint	
OR4	Interpret the given clinical findiung to make diagnosis of injury around knee joint	
AN18.7	At the end of session phase III part II MBBS student must be able to **explain anatomical basis of Osteoarthritis**	K
OR1	Enumerate various degenrative disease of joint	
OR2	Diiscuss radiological and clinical feature of osteoarthritis.	

AN19.4	At the end of session phase III part II MBBS student must be able to **explain the anatomical basis of rupture of calcaneal tendon**	K
OR1	Describe anatomical feature of calcaneal tendon (Tendoachilles)	
OR2	Discuss the etiopathogenesis of rupture of tendoachilles	
AN19.6	At the end of session phase III part II MBBS student must be able to **explain the anatomical basis of Flat foot & Club foot.**	K
OR-1	Enummerate various soft tissue and bony structure responsible for flat foot (pes planus)	
OR-2	Enumerate various soft tissue and bony structure responsible for club foot	
OR-3	Discuss clinical feature and treatment of -1 flat foot 2 club foot	
AN19.7	At the end of session phase III part II MBBS student must be able to **explain the anatomical basis of Metatarsalgia & Plantar fasciitis**	K
OR1	Enumerate various factor respnsible for metatarsalagia and plantar fascitis	
OR2	Discuss various clinical feature and treatment of metatarsalgia nad plantar fascitis	
AN50.4	At the end of session phase III part II MBBS student must be able to **explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida**	K
OR-1	Describe structural deformity of spine and enumerate - scoliosis, kyphosis,PIVD,spina bifida.	
OR-2	Discuss clinical/ radiological features of scoliosis,lordosis,PIVD, spondylolisthesis and spina bifida	K

Pathology

Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**
PA33.1	At the end of session phase III part II MBBS student must be able to **classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis**	K
OR-1	Describe clinical, radiological and lab findings of osteomyelitis.	
OR-2	Enumerate various complications of odteomyelitis.	
OR-3	Discuss various treatment modalities of osteomyelitis.	
PA33.2	At the end of session phase III part II MBBS student must be able to **classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors.**	K
OR-1	Enumerate most common benign and malignant tumors of bone.	
OR-2	Describe clinical,radiological features and lab findings of benign and malignant tumors of bones	
OR-3	Discuss difference between benign and malignant tumors of bone.	
OR-4	Discuss various treatment method and complication of common malignant bone tumors.	
PA33.3	At the end of session phase III part II MBBS student must be able to **classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors**	K
PA33.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	K

Microbiology

MI4.2	At the end of session phase III part II MBBS student must be able to **describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone & joint infections.**	K
OR-1	Enumerate common pathogenesis involve in bone and joint infection.	
OR-2	Discuss clinical, radiological and lab diagnosis of bone and joint infection and treatment.	

Forensic Medicine & Toxicology

Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**
FM3.7	At the end of session phase III part II MBBS student must be able to **describe factors influencing infliction of injuries and healing, examination and certification of wounds and wound as a cause of death: Primary and Secondary.**	K
OR-1	Enumerate the life threatening injury must be look in orthopedics emergency in a trauma patient.	
OR-2	Describe primary and secondary causes of death in a poly trauma patient.	
FM3.8	At the end of session phase III part II MBBS student must be able to **Mechanical injuries and wounds:** **Describe and discuss different types of weapons including dangerous weapons and their examination.**	K
Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**
FM3.9	**Firearm injuries:** At the end of session phase III part II MBBS student must be able to- **Describe different types of firearms including structure and components. Along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking.**	K
OR-1	Enumerate the various types of wound in firearm injury.	
OR-2	Discuss the documentation of firearm injury	

FM3.10	**Firearm injuries**:At the end of session phase III part II MBBS student must be able to **Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms**	K
FM3.11	**Regional Injuries:** At the end of session phase III part II MBBS student must be able to **Describe and discuss regional injuries to head (Scalp wounds, fracture skull, intracranial haemorrhages, coup and contrecoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and skeleton**	K
FM3.12	**Regional Injuries:** At the end of session phase III part II MBBS student must be able to **Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome, railway spine.**	K
OR-1	Describe the clinical examination of fall from height patient/RTA patient.	
OR-2	Enumerate common site of injuries in a patient with RTA and FFH.	
General Medicine		
Number	**COMPETENCY** **The student should be able to:**	**Domain K/S/A/C**
IM7.5	At the end of session phase III part II MBBS student must be able to-**Develop a systematic clinical approach to joint pain based on the pathophysiology.**	K
IM7.6	At the end of session phase III part II MBBS student must be able to-**Describe and discriminate acute, subacute and chronic causes of joint pain.**	K
OR-1	Enumerate causes of joint pain	
OR-2	Enumerate the investigation advised for a patient with joint pain.	
OR-3	Discuss difference between acute, subacute and chronic joint pain.	
OR-4	Interpret clinical,lab and radiological features from a given set to make the diagnosis of joint pain.	
IM7.7	At the end of session phase III part II MBBS student must be able to-**Discriminate, describe and discuss arthralgia from arthritis and mechanical from inflammatory causes of joint pain**	K
OR-1	Discuss/ differentiate arthalgia from arthritis , mechanical and inflammatory cause of	

Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration
KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy
K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy

K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy
K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy
K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy

SH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy
K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy

Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**
K/KH/ SH	Y	Lecture, Small group discussion, Video assisted lecture	Written/ Viva voce/ OSCE		Pathology, Microbiology

SH	Y	Small group Discussion. DOAP session	Viva voce/ OSCE/ Skills assessment		_
SH	Y	DOAP session, Video demonstration	Viva voce/ OSCE/ Skills assessment		

K/KH	Y	Lecture, Small group discussion, Case discussion	Written/ Viva voce/ OSCE		Pathology

Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify**	**Vertical Integration**
K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		

K/KH	Y	Lecture, Small group discussion, Case discussion	Written/ Viva voce/ OSCE		

K/KH	Y	Lecture, Small group discussion, Case discussion	Written/ Viva voce/ OSCE		

K/KH	Y	Lecture, Small group discussion, Case discussion	Written/ Viva voce/ OSCE		

Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**
K/KH	Y	Lecture, Small group discussion	Written/ Viva voce/ OSCE		

K/KH	Y	Lecture, Small group discussion, Video assisted interactive lecture	Written/ Viva voce/ OSCE		Pathology

K/H	Y	Lecture, Small group discussion, case discussion	Written/ Viva voce/ OSCE		Human Anatomy

KH	Y	Lecture, Small group discussion	Written/ Viva voce/ OSCE		Human Anatomy

Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**

KH / SH	Y	Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skill lab sessions	OSCE with Simulation based assessment		
KH / SH	Y	Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skill lab sessions	OSCE with Simulation based assessment		

petencies : (03) **Number of procedures that require certification: (NIL)**

KH / SH	Y	Case discussion, Video assisted lecture, Small group discussion, Teaching, Skills lab sessions	OSCE with Simulation based assessment		

KH / SH	Y	Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skills lab sessions	OSCE with Simulation based assessment		
Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**
KH / SH	Y	Case discussion, Video assisted Lecture, Small group discussion, Teaching, Skills lab sessions	OSCE with Simulation based assessment		

KH	Y	Lecture	Written/ Viva voce		Orthopedics
KH	Y	Lecture	Written/ Viva voce		Orthopedics
SH	Y	Practical, DOAP session, Small group teaching	Viva voce/ Practicals		Orthopedics
KH	N	DOAP session	Viva voce		Orthopedics
Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**

SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ Skills assessment		Orthopedics
KH	Y	Practical, Lecture	Written/ Viva voce		Orthopedics
KH	N	Lecture	Written/ Viva voce		Orthopedics
KH	N	Lecture	Written/ Viva voce		Orthopedics
KH	N	Lecture	Written/ Viva voce		Orthopedics
KH	N	Lecture	Written/ Viva voce		Orthopedics

KH	N	Lecture	Written/ Viva voce		Orthopedics
KH	N	Lecture	Written/ Viva voce		Orthopedics
KH	N	Lecture	Written/ Viva voce		Orthopedics
KH	N	Lecture	Written		Orthopedics
KH	N	Lecture			

Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**
KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Orthopedics
KH	Y	Lecture, Small group discussion	Written/ Viva voce		Orthopedics
KH	Y	Lecture, Small group discussion	Written/ Viva voce		Orthopedics
KH	N	Lecture, Small group discussion	Written/ Viva voce		Orthopedics

KH	Y	Lecture	Written/ Viva voce		Orthopedics

Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**
K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic medicicne, Orthopaedics
K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery, Orthopaedics
Level K/KH/ SH/P	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**	**Vertical Integration**
K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery, Orthopaedics

K/KH	Y	Lecture,Small group discussion, Bed side clinic DOAP session	Written/ Viva voce / OSCE		General Surgery, Orthopaedics
K/KH	Y	Lecture, Small group discussion,Bed side clinic or autopsy, DOAP session	Written/ Viva voce / OSCE/ OSPE		General Surgery, Orthopaedics
K/KH	Y	Lecture, Small group discussion, Bed side clinic or autopsy, DOAP session	Written/ Viva voce / OSCE/ OSPE		General Surgery, Orthopaedics
Level K/KH/	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to**	**Vertical Integration**
KH	Y	Lecture, Small group discussion	Written/ Viva voce		
KH	Y	Lecture, Small group discussion	Written/ Viva voce		
KH	Y	Lecture, Small group discussion	Written/ Viva voce		

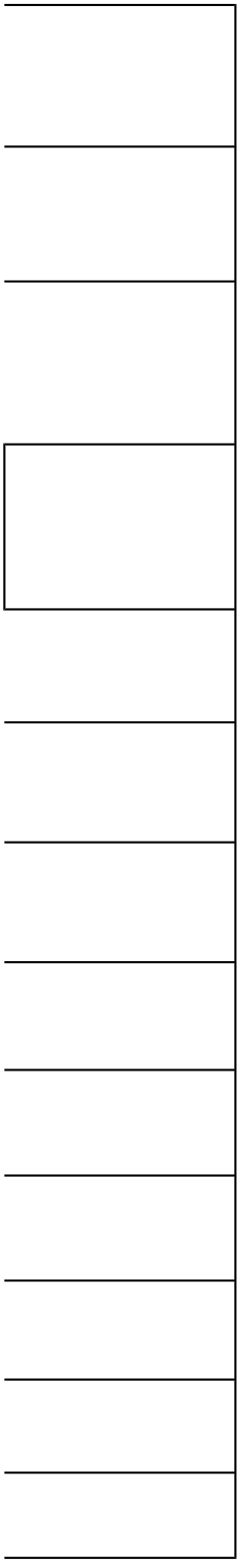
Horizontal Integration
Horizontal Integration
General surgery

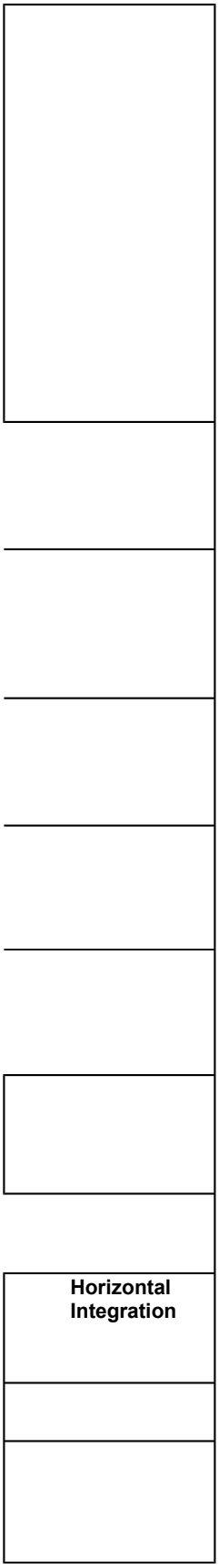
General Surgery

General surgery

Horizontal Integration

General Medicine

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Integration

General surgery, Radiotherapy

General Medicine,
General surgery

Horizontal Integration

Anaesthesiology

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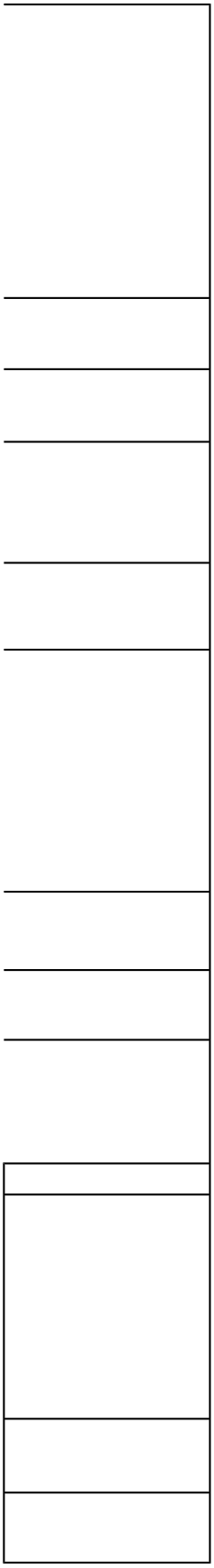

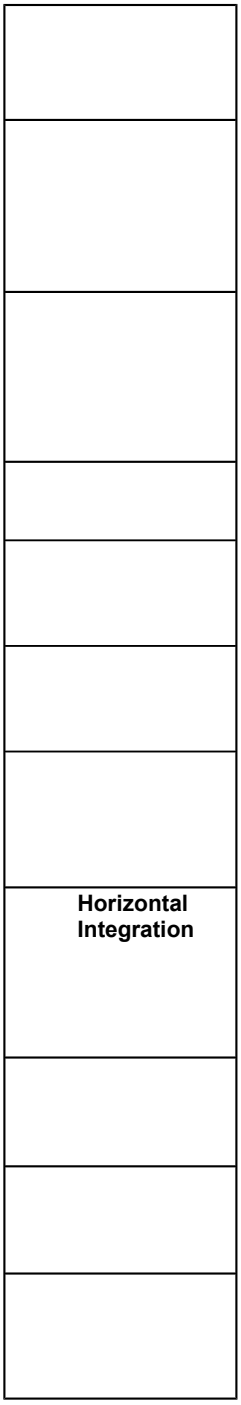
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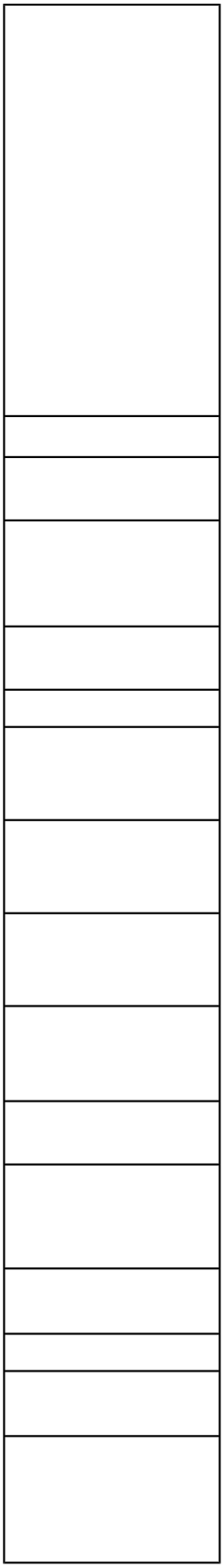
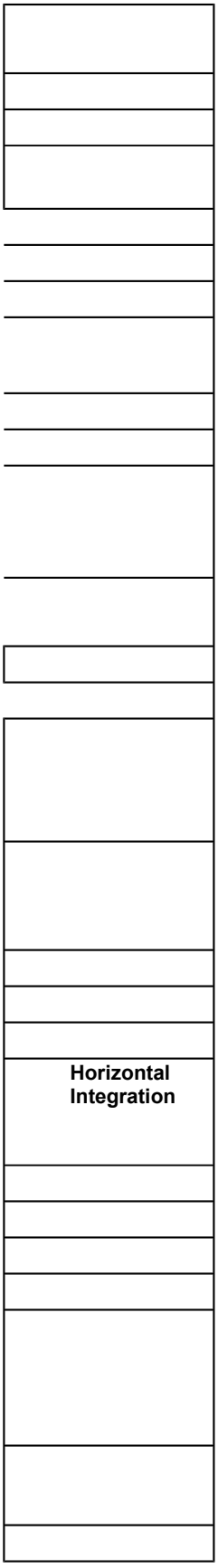


Horizontal Integration

Microbiology


Horizontal
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Horizontal Integration

Orthopedics

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