

Branch Name:	BACHELOR OF PHYSIOTHERAPY
Program Code:	PT101
Course Title:	ORTHOPEDECS (Traumatic & Non-Traumatic)
Course Code:	2PT1010305
Pre-requisite Course:	Human Anatomy, Human Physiology

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)			Credit	Evaluation Scheme (Marks)					
Lecture	Tutorial	Practical		Theory(T)		Practical(P)		Total Marks	
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	Theory	Practical
03	-	-	06	80	20	-	-	100	-

COURSE OUTCOMES:

At the end of the course, the student will be able to

1. Discuss the clinical manifestations and conservative/surgical management of various traumatic and cold cases of the musculo-skeletal conditions
2. Traumatic including both operative and non-operative
3. Gain the skill of clinical examination and interpretation of the preoperative cases and all the post-operative cases
4. Read and interpret salient features of the x-ray of the spine and extremities, and correlate the radiological findings with the clinical findings.

Subject Contents:

Sr. No.	Topic	Hours
1	Introduction: - Fracture, - Dislocation and injuries of the upper limb. - Briefly mention - General principles of Orthopedic surgery, - Definition and scope, - Brief history	02
2	Fracture & dislocations: - Causes, types, - Mechanisms, - Displacement, - General symptoms, - Healing, - Principles of treatment, - Complications, - Malunion, delayed union, - Non-union, - Myositis ossificans, - Volkman's ischemic contracture, - Fat embolism, - Sudeck's osteodystrophy	05
3	Injuries to the hand: - Types (open, closed), - Principles of treatment, - Injuries to the phalanges, - Sprains, dislocations of MP & IP joints, - Fractures of the phalanges, - Metacarpals, - Bennet's fracture, - Mallet finger, - Tendon injuries (flexor & extensor)	02
4	Wrist & Forearm injuries: - Wrist dislocation, - Colle's fracture, - Displaced epiphysis, - Smith's fracture, - Barton's fracture, - Injuries to carpal, - Scaphoid and sprains, - Fractures of - Forearm bones – greenstick fracture. - Infraction injury, - Both bone fracture, - Galleazi, - Monteggia - Fracture dislocation	02

5	Injuries to the elbow: - Traumatic synovitis, - Sprain, - Dislocation of elbow joint	02
6	Fractures involving elbow joint: - Supracondylar fracture, - Intercondylar fracture, - Fracture medial epicondyle, - Fracture of lateral condyle, - Myositis ossificans, - Volkman's ischaemic contracture, - Fracture of the head of the radius, - Fracture of olecranon	03
7	Injuries of shoulder and arm: - Fractures of the proximal end, - Neck and shaft of humerus, - Fractures of clavicle, - Acromioclavicular and sternoclavicular dislocations, - Fractures of the scapula	05
8	Injuries of the spine: - Injuries to the cervical spine (Both upper and lower), - Atlanto-axial injuries - Dorso Lumbar spine - classification - mechanism and types of injuries - stable fracture without paraplegia - fracture dislocation with paraplegia - Management of fracture - Management of paraplegia - Bedsore and bladder care	07
9	Injuries of the pelvis: - Fractures, its mechanism, classification, management, - Fractures of acetabulum, sacrum and coccyx	03
10	Injuries of the lower limb: - Dislocations of the hip joint - Intracapsular and trochantric fractures of femur - Fractures of the neck of femur - Fracture of the shaft of femur - Fracture femur in children - Fracture of femoral condyles - Tibial condyles and patella - Injuries to extensor mechanism - Contusion, haemarthrosis - Knee joint dislocation and traumatic dislocation of patella - Fracture and fracture dislocation of ankle - Epiphyseal injury lower end of tibia Foot- fracture of talus - Calcaneum - Metatarsals and phalanges	10

11	Soft tissue injuries: a) Ligamentous injuries of ankle, b) Knee and injury to Muscles. c) Orthopaedic splints and appliances for injuries to muscles and tendons	05
12	Tendon transfer: a) Principles, b) Indications, c) Common tendon transfer surgeries	02
13	Amputation : a) Types, site b) Ideal stump c) Complications d) General principles of treatment e) Upper extremity and lower extremity amputations – prosthesis and prosthetic service f) Principles of operative management, indications and contraindications for arthroplasty, osteotomy, arthrodesis, spinal stabilization, arthroscopy	03
14	Limb reattachment: a) Principles b) Indications c) Technique	02

Clinical: Operation Theater (O.T.) Visit

ORTHOPADICS (NON-TRAUMATIC)

COURSE OUTCOMES:

At the end of the course, the student will be able to

1. Discuss the Patho-physiology, clinical manifestations and conservative/surgical management of various non-traumatic cases of the musculo-skeletal conditions.
2. Non-traumatic including both operative and non-operative.
3. Gain the skill of clinical examination and interpretation of the preoperative cases.
4. Read and interpret pathological / biochemical studies pertaining to orthopedic conditions and correlate the radiological findings with the clinical findings.

Subject Contents

Sr. No.	Topic	Hours
1	General Orthopedics - Clinical examination of an orthopedic patient, investigations, radiological and imaging techniques (salient features) - Deformities, acquired deformities, causes and principles of management, splinting - Traction: procedures, materials - Preventive orthopedics - Geriatric orthopedics	03
2	Congenital disorders - Torticollis, wry neck, kyphosis, lordosis, scoliosis, spina bifida, myelomeningocele, congenital dislocation of hip, congenital genu recurvatum, talipesequinovarus - Elevation of scapula, madelung's deformity, coxavara - Endocranialdystosis, superior radio-ulna dysostosis, sternocleido mastoid tumor	10
3	Infection of bones & joints - Osteomyelitis (acute and chronic), Brody's abscess as a complication of open fracture - Skeletal tuberculosis, principles of treatment, T.B. of shoulder, elbow and wrist T.B. of hip, knee ankle, and foot - Dactylitis, caries rib	05
4	Arthritis Acute pyogenic arthritis, septic arthritis of infancy, small pox arthritis, Syphilitic infection of joint, Rheumatoid arthritis, Osteoarthritis	05
5	Bone tumors - Classification, true bone tumors- osteosarcoma, giant cell tumor, Ewing's sarcoma, chondroblastoma, chondrosarcoma, fibrosarcoma, lymphoma of bone, plasmacytoma - Bone metastasis: synovial sarcoma, hemangioma of bone, adamanatinoma of long bones and chondroma - Tumor like lesions: osteoid osteoma, benign osteoblastoma, nonosteogenic fibroma, osteoma, osteochondroma and enchondroma	05
6	Neurological and Muscular disorders - Definition, causes, clinical feature, complications, management (Multidisciplinary approach) medical and surgical of the following conditions: Cerebral palsy, Poliomyelitis, Leprosy - Muscular dystrophy – types and treatment - Injuries to plexus and nerves: Radial, Ulnar, Median, Brachial plexus, Sciatic and Lateral Popliteal	05

7	Regional conditions of Spine and Lower limb - Back: Kyphosis, Scoliosis, Spondylolisthesis, Lumbosacral strain, intervertebral disc prolapse, fibrositis back, Lumbar canal stenosis, sacro iliac strain, spondylosis, spondylolysis - Hip: Slipped capital femoral epiphysis, idiopathic chondrolysis of hip - Knee: Genu valgum, genu varum, tibia varum, genu recurvatum, quadriceps fibrosis, recurrent dislocation of patella, bursa around the knee, loose bodies in the knee, chondromalacia patella - Foot: Painful heel, Plantar fascitis, Posterior heel pain, flat foot, foot strain, pain in forefoot, Hallux valgus, anterior metatarsalgia	12
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List of References:

Text Books:

1. Essentials of Orthopaedics and applied Physiotherapy. Joshi, Jayant-2nd Edition.
2. Orthopedic Physical Assessment. Magee, David.6th Edition.
3. Essentials of Orthopedics for Physiotherapists. Ebnezar, John.6th Edition.
4. Essentials Orthopaedics. Maheshwari & Mhaskar. 7th Edition.

Reference Book:

1. Apey's system of Orthopaedics and Fractures. Solomon, Louis-2nd Edition.
2. Traction and Orthopedic Appliances. Stewart, John D.M.2nd Edition.

List of Open Source Software/learning website:

- k-hub.in e library/A single platform for all e resources (K-hub, E Resource)
 - User Name- KB4605VNG
 - Password- BL@69BX!
- knowledgegainer.delnet.in (Delnet, E Resource)
 - User Name-gjspum
 - Password- spu10924

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Discuss the Patho-physiology, clinical manifestations and conservative/surgical management of various Traumatic & non-traumatic cases of the musculo-skeletal conditions.	1 Remembering 2 Understanding 3 Applying 4 Analyzing 5 Evaluating
CLO2	Clinical Evaluation and interpretation of the Preoperative and Post operative of the musculo-skeletal cases.	1 Remembering 2 Understanding 3 Applying 4 Analyzing 5 Evaluating
CLO3	Understand the clinical manifestations and apply conservative/surgical management of various traumatic and Non traumatic musculo-skeletal conditions.	1 Remembering 2 Understanding 3 Applying 4 Analyzing 5 Evaluating
CLO4	Understand and evaluate the salient features of the x-ray of the spine and extremities, and correlate the radiological findings with the clinical findings.	1 Remembering 2 Understanding 3 Applying 4 Analyzing 5 Evaluating
CLO5	Understand the types and General Principle of Management in Amputation.	1 Remembering 2 Understanding 3 Applying 4 Analyzing 5 Evaluating
CLO6	Acquire the knowledge of various Neurological & Muscular disorders.	1 Remembering 2 Understanding 3 Applying 4 Analyzing 5 Evaluating

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Outcomes (POs)								Program Specific Outcomes (PSOs)							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CLO1		H	H						M	H				H		
CLO2		H	H					M		H					M	
CLO3	M	H	H			M				H	M					
CLO4		H	H	M							M			M		
CLO5	M	M					L						M	M		M
CLO6		H	H				L		M	M	M					

H= High M=Medium L=Low