VEER NARMAD
SOUTH GUJARAT UNIVERSITY
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BACHELOR OF PHYSIOTHERAPY

(BPT)

Version 3.0

New Syllabus
(Effective from 2011-2012)

INDEX

#. BACHELOR OF PHYSIOTHERAPY [BPT]

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Clinical Observation Posting	***Supervised Clinical Practice***	***Clinical Training - I***	***Clinical Training -II***

Table – III: TY BPT

Paper No.	Papers	Weekly Class Hours	Total	Hours		Marks		Total Marks
	Exam Papers			Theory	Practical	Theory (External +Internal)	Practical (External +Internal)	
1.	General Medicine (Including Pediatrics)	2-3	90	90	***	80+20	*****	100
2.	General Surgery (Including O&G and Cardiothoracic Surgery)	2-3	100	100	***	80+20	*****	100
3.	Orthopedics & Traumatology	2-3	80	80	***	80+20	*****	100
4.	Musculoskeletal Physiotherapy*	4-6	140	80	60	80+20	80+20	200
5.	General Medical & Surgical Physiotherapy*	4-6	140	80	60	80+20	80+20	200
6.	Research Methodology	1-2	50	50	*****	40+10	*****	50
	Non-Exam Papers							
7.	Radiology	1-2	20	20	*****	*****	*****	*****
8.	Computer Application	1-2	30	10	20	*****	*****	*****
9.	Psychiatry	1-2	30	30	*****	*****	*****	*****
*.	Clinical Training -I	18	430	430		*****	*****	*****
**	Extra-curricular Activities [Conference, Tours, Seminar, Workshops, Sports and Cultural Activities]	--	150	150		****	****	****
	Total Hours in TY		1260 Hours					

E.

Third Year

Bachelor of Physiotherapy

Paper -I: GENERAL MEDICINE

[INCLUDING PAEDIATRICS]

Total hours: Theory:	90 90
Total Hours/ Week:	3 hours
Method of Assessment:	Written

Course Description:

This subject follows the basic science subjects to provide the knowledge about relevant aspects of medicine. The student will have a general understanding of the diseases the therapist would encounter in their practice. The objective of this course is that after 90 hrs of lectures and discussion the student will be able to list the etiology, pathology, clinical features and treatment methods for various medical conditions.

THEORY

SECTION – I : GENERAL MEDICINE [65 hours]

1. **Infections [5 hours]:** Effects of Infection on the body , Pathology – source and spread of infection , vaccinations , generalized infections , rashes and infection , food poisoning and gastroenteritis , sexually transmitted diseases – Syphilis, Gonorrhea, HIV infections and Aids.

2. **Endocrine diseases [6 hours]:** Common presenting symptoms of Endocrine disease – common classical disease presentations. Diabetes Mellitus: Etiology, pathogenesis, clinical features, Complications and its management. Hypothyroidism. Hyperthyroidism. Thyrotoxicosis.

3. **Diseases of the blood [6 hours]:** Examinations of blood disorders. Cause, Clinical manifestations, types and management of Anemia, Hemophilia, hemorrhages.

4. **Diseases of the digestive system[5 hours]:** Clinical manifestations of gastrointestinal disease – Aetiology, clinical features, diagnosis, complications and treatment of the following conditions : Reflux Oesophagitis, GI bleeding, Peptic Ulcer disease, Pancreatitis, Ulcerative Colitis, Peritonitis, Infections of Alimentary Tract ; Clinical manifestations of liver diseases - Aetiology, clinical features, diagnosis, complications and treatment of the following conditions : Viral Hepatitis, Wilson's Disease, Alpha1-antitrypsin deficiency, Cirrhosis of the Liver, Gall stones, Cholycystitis.

5. **Infectious Disease [3 hours]:** Tuberculosis, malaria, typhoid, infective hepatitis, tetanus.

6. **Nutritional disorder [6 Hours]:** Causes, Clinical features, Complications and treatment of: Vitamins and its deficiencies, disorders including rickets and osteomalacia, anemia.

7. **Cardiovascular Disease [14 hours]**: Anatomy & Physiology & Examination of the Cardiovascular System. Clinical manifestations of Cardiovascular disease ; Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases and disorders of the heart : Pericarditis, Myocarditis, Endocarditis, Rheumatic Fever, valve disorders, Myocardial infection , Angina , Congestive cardiac failure, Cardiomyopathy , Ischemic Heart Disease, Coronary Valve disease, Fetal circulation , Congenital disorders of the Heart, Cardiac Arrest, diseases of arteries and veins, Hypertension.

8. **Respiratory Disease [15 hours]:** Examination of the Respiratory System. Clinical manifestations of Lung disease. Chronic Obstructive Lung Disease and Restrictive Lung Disease ; Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following lung diseases : Chronic Bronchitis, Emphysema, Asthma, Bronchiectasis, Cystic Fibrosis, Lung abscess & Empyma , Upper Respiratory Tract Infections, Pneumonia, Tuberculosis, Diseases of the pleura, diaphragm and chest wall, Respiratory failure.

9. **Urogenital disease: [5 hours]**: Structure and functions of kidney, Physiology of micturation. Upper and lower urinary tract infection and acute renal failure.

SECTION – II: PEDIATRICS [25 hours]

1. **Growth and development [3 hours]** of a child from birth to 12 years, including physical, social, adaptive development.

2. **The maternal and neonatal factors [6 hours]** contributing to high risk pregnancy to the neonate, inherited diseases, maternal infections- viral and bacterial maternal diseases, pregnancy induced hypertension, chronic maternal diseases such as heart diseases, renal failure tuberculosis, diabetes, epilepsy, bleeding in the mother at any trimester.

3. **Normal diet of newborn and child [6 hours]:** List dietary calories, carbohydrate fat, protein, mineral and vitamin requirement in a normal child and in a child with malnutrition, Etiology, findings and treatment of rickets. Vitamin D deficiency and resistant rickets.

4. **Problems and management of [10 hours]** LBW infants, Perinatal problems and management, Congenital abnormalities and management, Respiratory conditions of childhood, Cerebral Palsy – causes classification, complications, clinical manifestations, treatment. Spin bifida, Mental Retardation. Orthopedic and Neuromuscular disorders in childhood. Sensory disorders – problems resulting from loss of vision and hearing. Learning and behavioural problems – Hyperactivity, Autism. Down's syndrome.

PAPER – I : GENERAL MEDICINE INCLUDING PAEDIATRICS: QUESTION PATTERN

Theory Paper having Maximum: 80 Marks. (Two Sections)		
Type of question	Number of Questions	Marks for Each Question
Section – I: 50 Marks		
Long Essay Type	(Any Two out of Four)	10x2=20
Short Essay Type	(Any Three out of Four)	5x3=15
Short Answer Type	(Any Five out of Six)	3x5=15
Section – II: 30 Marks		
Short Essay Type	(Any Three out of Four)	5x3=15
Short Answer Type	(Any Five out of Six)	3x5=15

Recommended Text Books:

1. Davidson's Essentials of Medicine by Stanley Davidson (2009)
2. Medicine for Students: Golwala

Reference books:

1. Harrison's Principles of Internal Medicine, 17th Edition by Anthony S. Fauci,
2. Braunwald Text of Cardiology
3. Text Book of Cardiology by Hurst
4. Davidson's Principles and Practice of Medicine by Nicki R. Colledge (Ed), Brian R. Walker (Ed), and Stuart H. Ralston MD (2010)

PAPER-II: GENERAL SURGERY

[INCLUDING O. & G. AND CARDIOTHORACIC SURGERY]

Total hours: Theory:	100 100
Total Hours/ Week:	3 hours
Method of Assessment:	Written

Course Description:

This subject follows the basic science subjects to provide the knowledge about relevant aspects of surgery. The student will have a general understanding of the surgical conditions the therapist would encounter in their practice. The objective of this course is that after 100 hrs of lectures and discussion the student will be able to list the indications for surgery, etiology, clinical features and surgical methods for various conditions.

THEORY

SECTION– I: GENERAL SURGERY & CARDIOTHORESIC SURGERY [60 Hours]

1. **Fluid, Electrolyte and Acid-Base disturbances – diagnosis and management; Nutrition in the surgical patient. [1 Hours].**

2. **Wound healing [2 Hours]:** Basic process involved in wound repair, basic phases in the healing process, clinical management of wounds, factors affecting wound healing, Scars – types and treatment.

3. **Hemostasis [1 Hours]:** Components, hemostatic disorders, factors affecting bleeding during surgery. Transfusion therapy in surgery – blood components, complications of transfusion; Surgical Infections **[2 Hours].**

4. **Acute infections [6 Hours]:** Inflammatory fever- bacteriemia, septicemia, pyemia, toxemia. Specific types: Cellulitis- sites, lymphadinitis, abscess with special reference to hand infection, carbuncle, Tetanus, gas gangrene, hospital infection, cross infection with modes of spread and prevention. General Post – Operative Complications and its management.

6. **Reasons for Surgery [4 Hours]:** Types of anaesthesia and Incisons ; Clips Ligatures and Sutures ; Overview of Drainage systems and tubes used in Surgery.

7. **Surgical Oncology [2 Hours]** Cancer – definition, types, clinical manifestations of cancer, Stages of Cancer, name of surgical procedures involved in the management of cancer

8. **Thoracic surgeries [12 hours]** Physiology and mechanics of breathing. Use of mechanical breathing Ventilators in brief. Pulmonary function tests. investigation of lung disease. Causes, clinical presentation, Diagnosis and treatment of Chest injury. Definition, Indications, Physiological changes, procedure and Complication of Lung surgeries: Thoracotomy, Pnumonectomy, Lobectomy, segmentectomy, Thoracoplasty, Pleurectomy, Pleurodesis and Decortication of the Lung.

9. **Cardiac surgeries [12 hours]** basic anatomy and physiology of heart and great vessels.Investigation of patient undergoing cardiac surgery. Indications, Physiological changes, procedure and Complications of heart surgeries: Extra cardiac Operations, Closed Heart surgery, Open Heart Surgery, great vessels surgery, surgery for congenital heart disease. Transplant Surgery: Heart, Lung. Cardiac arrest and its management. Introduction of Cardio-Pulmonary Bypass Machine in brief.

10. **Diseases of the Arteries and Veins [6 Hours]**: Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases : Arteriosclerosis, Atherosclerosis, Aneurysm, Buerger's disease, Raynaud's Disease, Thrombophlebitis, Deep Vein Thrombosis, Pulmonary Embolism, Varicose Veins.

11. Definition, Indication, Incision, Physiological changes and Complications following Common operations , Abdominal incision , Cholecystectomy, Colostomy, Ileostomy, Gastrectomy, Hernias, Appendicectomy, oesophegeal disorder, Neprectomy, Prostectomy. **[8 Hours]**

12. **Burns [4 Hours]:** Definition, Classification, Causes, Prevention, Pathological changes, Complications, Clinical Features and Management. Skin Grafts – Types, Grafting Procedures, Survival of Skin Graft ; Flaps – Types and uses of Flaps**.**

SECTION – II OBSTETRICS & GYNECOLOGY [40 Hours]

1. Anatomy and physiology of the female reproductive organs.

2. **Puberty:** Dynamics.

3. **Menstrual Cycle**: Physiology, Hormonal regulation, abnormalities, disorders and common problems of menstruation.

4. **Pregnancy**: Diagnosis, fertilization, development of the fetus,. Normal, abnormal and multiple gestation , Physiological changes , common complication- PIH, eclampcia, diabetes , hepatitis, german measles , TORCH infection , abortion, antenatal care.

5. **Labour:** Normal events of Ist ,IInd and IIrd stages of labour. Complication during labour & management. Assisted delivery: Episiotomy, Forceps delivery, caesarian section

6. **Postnatal phase:** Puerperium, Common complications & Management, Lactation, Complications of repeated child bearing with small gaps.

7. **Family planning** : Method of Contraception, Medical Termination of pregnancy (MTP)

8. **Dysfunctions & Disease:** Prolapse & displacement - Uterine prolapse, Cystocoele, Rectocoele, Enterocoele ,Incontinence -types, causes , assessment, management. Infections of female genital tract including sexually transmitted Diseases & PID.

9. **Gynaecological Surgeries :** Definition, Indications and Management of the following surgical

   a) procedures – Hysterectomy, Hysterosalpingography, Dilatation and Curettage, Laproscopy,

   b) Colposopy

10. **Pre, Peri & Post Menopause:** Physiology, Consequence, complications & management of Menopause. Neoplasm of Female reproductive organs & its management.

Clinical:

1. Examination of patients as regards chest & heart diseases, O& G conditions.

2. Demonstration – Acquaintances with C.T. Surgery, Equipments, I.C.C.U. O.T, O & G ward.

Recommended Text books:

1. Textbook of surgery- das
2. Bailey and Love's – Short Practice of Surgery
3. Obstetrics & Gynecology- Dutta

Reference books:

1. General Surgical Operations – by Kirk / Williamson
2. Surgery by Nan
3. Chest Disease by Crofton and Douglas.
4. Surgery – S. Basu

Paper – III: ORTHOPEDICS AND TRAUMATOLOGY

Subject Title: Total hours: Theory:	Orthopedics & Traumatology 80 80
Total Hours/ Week:	3 hours
Method of Assessment:	Written

Course Description:

This subject follows the basic science subjects to provide the knowledge about Orthopedic conditions the therapist would encounter in their practice. The objective of this course is that after 80 hrs of lectures and discussion the student will be able to demonstrate an understanding of orthopedic conditions causing disability, list the etiology, clinical features and methods of investigations and management.

THEORY

SECTION – I [43 Hours]

1. **Introduction [3 Hours]:** Introduction to orthopedics. Clinical examination in an orthopedic patient. Common investigative procedures. Radiological and Imaging techniques in Orthopedics.

2. **Traumatology [3 Hours]:** Fracture: definition, types, signs and symptoms. Fracture healing. Complications of fractures. Conservative and surgical approaches. Principles of management – reduction (open/closed, immobilization etc). Subluxation/ dislocations – definition, signs and symptoms, management (conservative and operative).

3. **Fractures and Dislocations of Upper Limb [10 Hours]:**

    a) Fractures of Upper Limb - Causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures: Fractures of clavicle and scapula. Fractures of greater tuberosity and neck of humerus. Fracture shaft of humerus. Supracondylar fracture of humerus. Fractures of capitulum, radial head, olecranon, coronoid, and epicondyles. Side swipe injury of elbow. Both bone fractures of ulna and radius. Fracture of forearm – monteggia, galaezzi fracture –dislocation. Chauffer's fracture.Colle's fracture. Smith's fracture. Scaphoid fracture. Fracture of the metacarpals. Bennett's fracture. Fracture of the phalanges. (Proximal and middle.)

    b) Dislocations of Upper Limb - Anterior and posterior dislocation of shoulder – mechanism of injury, clinical feature, complications, conservative management (Kocher's and Hippocrates maneuver), surgical management (putti plat, bankart's) etc. Recurrent dislocation of shoulder.

    c) Posterior dislocation of elbow – Mechanism of injury, clinical feature, complications & management.

4. Fracture of Spine [6 Hours]:

a) Fracture of Cervical Spine - Mechanism of injury, clinical feature, complications, Management- immobilization(brief introduction of collar, cast, brace, traction); Management for stabilization, management of complication (bladder and bowel, quadriplegia). Clay shoveller's fracture. Hangman's fracture. Fracture odontoid. Fracture of atlas.

b) Fracture of Thoracic and Lumbar Regions - Mechanism of injury, clinical features, management — conservative and surgical management of common fractures around thoracic and lumbar regions.

c) Fracture of coccyx.

d) Fracture of Rib Cage - Mechanism of injury, clinical features, complication and management for Fracture Ribs, Fracture of sternum.

5. Fractures and Dislocations of Lower Limb [10 Hours]:

a) Fracture of Pelvis and Lower Limb - causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures:

b) Fracture of pelvis. Fracture neck of femur ,Fractures of trochanters. Fracture shaft femur, Supracondylar fracture of femur, Fractures of the condyles of femur. Fracture patella. Fractures of tibial condyles. Both bones fracture of tibia and fibula. Dupuytren's fracture Maisonneuve's fracture. Pott's fracture. Bimalleolar fracture, Trimalleolar fracture, Fracture calcaneum. Fracture of talus. Fracture of metatarsals. stress fractures Jone's fracture. Fracture of phalanges.

c) Dislocations of Lower Limb - Mechanism of injury, clinical features, complications, management of the following dislocations of lower limb. Anterior dislocation of hip. Posterior dislocation of hip. Central dislocation of hip. Dislocation of patella. Recurrent dislocation of patella.

6. Soft Tissue Injuries [5 Hours]:

a) Define terms such as sprains, strains, contusion, tendinitis, rupture, tenosynovitis, tendinosis, bursitis.

b) Mechanism of injury of each, clinical features, managements- conservative and surgical of the following soft tissue injuries: Meniscal injuries of knee. Cruciate injuries of knee. Medial and lateral collateral injuries of knee. Lateral ligament of ankle. Wrist sprains.

c) Strains- quadriceps, hamstrings, calf, biceps, triceps etc.

d) Contusions- Quadriceps, gluteal, calf, deltoid etc. Tendon ruptures-Achilles, rotator cuff muscles, biceps, pectorals etc.

7. **Hand Injuries [2 Hours]:** Mechanism of injury, clinical features, and management of the following - Crush injuries. Flexor and extensor injuries. Burn injuries of hand.

8. **Amputations [4 Hours]:** Definition, levels of amputation of both lower and upper limbs, indications, complications.

SECTION– II [37 Hours]

1. **Deformities [6 Hours]:** Clinical features, complications, medical and surgical management of the following Congenital and Acquired deformities.

   a) Congenital Deformities -CTEV. CDH. Torticollis. Scoliosis. Flat foot. Vertical talus. Hand anomalies- syndactyly, polydactyly and ectrodactly. Arthrogryposis multiplex congenital (amyoplasia congenita). Limb deficiencies- Amelia and Phocomelia. Klippel feil syndrome. Osteogenesis imperfecta (fragile ossium). Cervical rib.

   b) Acquired Deformities - Acquired Torticollis. Scoliosis. Kyphosis. Lordosis. Genu varum. Genu valgum. Genu recurvatum Coxa vara. Pes cavus. Hallux rigidus. Hallux valgus. Hammer toe. Metatarsalgia.

2. **Disease of Bones and Joints [5 Hours]:** Causes, Clinical features, Complications, Management- medical and surgical of the following conditions:

   a) Infective conditions: Osteomyelitis (Acute / chronic). Brodie's abscess. TB spine and major joints like shoulder, hip, knee, ankle, elbow etc.

   b) Arthritic conditions: Pyogenic arthritis. Septic arthritis. Syphilytic infection of joints.

   c) Bone Tumors: classification, clinical features, management - medical and surgical of the following tumors : Osteoma. Osteosarcoma, Osteochondroma. Enchondroma. Ewing's sarcoma. Gaint cell tumor. Multiple myeloma. Metastatic tumors.

   d) Perthes disease, Slipped Capital Femoral Epiphysis and Avascular Necrosis.

   e) Metabolic Bone Diseases: Rickets. Osteomalacia, Osteopenia. Osteoporosis.

3. **Inflammatory and Degenerative Conditions [6 Hours]:** causes, clinical feature, complications, deformities, radiological features, management- conservative and surgical for the following conditions :

   a) Osteoarthritis. Rheumatoid arthritis. Ankylosing spondylitis Gouty arthritis. Psoriatic arthritis. Hemophilic arthritis. Still's disease (juvenile rheumatoid arthritis). Charcot's joints.

   b) Connective Tissue Disorders- Systemic Lupus Erythematosis, Scleroderma, Dermatomyositis, Poliomyelitis, Mixed connective tissue Disease (MCTD)

4. **Syndromes [3 Hours]:** Causes, Clinical features, complications, management- conservative and surgical of the following :

   Cervico brachial syndrome. Thoracic outlet syndrome. Vertebro- basilar syndrome. Scalenus syndrome. Costo clavicular syndrome. Levator scapulae syndrome. Piriformis syndrome.

5. **Neuromuscular Disorders [3 hours]:** Definition, causes, clinical feature, complications, management. (Multidisciplinary approach) medical and surgical of the following conditions : Cerebral palsy. Poliomyelitis. Spinal Dysraphism. Leprosy.

6. **Cervical and Lumbar Pathology [5 Hours]:** Causes, clinical feature, patho-physiology, investigations, management-Medical and surgical for the following :

   Prolapsed interverbral disc (PID), Spinal Canal Stenosis. Spondylosis (cervical and lumbar) Spondylolysis. Spondylolisthesis. Lumbago/ Lumbosacral strain. Sacralisation. Lumbarisation. Coccydynia. Hemivertebra.

7. **Orthopedic Surgeries [3 Hours]:** Indications, Classification, Types, Principles of management of the following Surgeries :

   Arthrodesis. Arthroplasty (partial and total replacement). Osteotomy , External fixators. Spinal stabilization surgeries(Harrington's, Luque's, Steffi plating) etc , Limb re-attachments.

8. **Regional Conditions [6 Hours]:** Definition, Clinical features and management of the following regional conditions

   a) Shoulder: Periarthritic shoulder (adhesive capsulitis). Rotator cuff tendinitis. Supraspinatus Tendinitis. Infraspinatus Tendinitis. Bicipital Tendinitis. Subacromial Bursitis.

   b) Elbow: Tennis Elbow. Golfer's Elbow. Olecranon Bursitis (student's elbow). Triceps Tendinitis.

   c) Wrist and Hand: De Quervain's Tenosynovitis. Ganglion. Trigger Finger/ Thumb. Mallet Finger, Carpal Tunnel Syndrome, Dupuytren's Contracture.

   d) Pelvis and Hip : IT Band Syndrome. Piriformis Syndrome. Trochanteric Bursitis.

   e) Knee: Osteochondritis Dissecans. Prepatellar and Suprapatellar Bursitis. Popliteal Tendinitis. Patellar Tendinitis. Chondromalacia Patella. Plica Syndrome. Fat Pad Syndrome (Hoffa's syndrome).

   f) Ankle and Foot: Ankle Sprains. Plantar Fasciitis / Calcaneal Spur. Tarsal Tunnel Syndrome. Achilles Tendinitis. Metatarsalgia. Morton's Neuroma.

Recommended Books:

1. Apley's System of Orthopaedics and Fractures by Louis Solomon, David Warwick, and Selvadurai Nayagam (2010)
2. Text book of Orthopedics.—Maheswari.
3. Orthopedic Principles - A Resident's Guide by David Ip (2005)
4. Campbell's Operative Orthopaedics by S. Terry Canale and James H. Beaty (2007)
5. Outline of Orthopedics. — John Crawford Adams.

Paper – IV: MUSCULOSKELETAL PHYSIOTHERAPY

Total hours: Theory: Practical:	140 80 60
Total Hours/ Week: Lecture: Practical: Seminars/ Tutorials:	6 hours 3 hours /week 2 hours/ week 1 Hour/ week
Method of Assessment:	Written, Oral, Practical

Course Description:

The subject serves to integrate the knowledge gained by the students in orthopedics and Traumatology with skills to apply these in clinical situations of dysfunction and musculoskeletal pathology. The objective of the course is that after the specified hours of lectures and demonstrations the student will be able to identify disabilities due to musculoskeletal dysfunction, plan and set treatment goals and apply the skills gained in exercise therapy and electrotherapy in these clinical situations to restore musculoskeletal function.

THEORY

SECTION – I [40 Hours]

1. **PT assessment for Orthopedic conditions [6 Hours]:**

   a) SOAP , ICIDH2, ICF format. Subjective - history taking, informed consent, personal, past, medical and socioeconomic history, chief complaints, history of present illness. Pain assessment- intensity, character, aggravating and relieving factors, site and location.

   b) Objective- on observation - body built swelling, muscle atrophy, deformities, posture and gait. On palpation- tenderness-grades, muscle spasm, swelling-methods of swelling assessment, bony prominences, soft tissue texture and integrity, warmth and vasomotor disturbances.

   c) On examination – ROM – active and passive, resisted isometric tests, limb length-apparent, true and segmental , girth measurement, muscle length testing-tightness, contracture and flexibility, manual muscle testing, peripheral neurological examination- dermatomes, myotomes and reflexes, special tests and functional tests. Prescription of home program. Documentation of case records, and follow up

2. **Fractures [5 Hours]:**

   a) Physiotherapy assessment in fracture cases. Aims of PT management in fracture cases - short and long term goals.

   b) Principles of PT management in fractures - Guidelines for fracture treatment during period of immobilization and guidelines for treatment after immobilization period

3. **Specific fractures and dislocations [5 Hours]:** PT assessment and management of upper limb fractures and dislocations. PT assessment and management of lower limb fractures and dislocations including Pelvis. PT assessment and management spinal fractures.

4. **Principles & techniques of manual therapy [5 Hours]:** Briefly Maitland, McKenzie and Mulligan.

5. **Degenerative and Inflammatory conditions [3 Hours]:** Definition, signs and symptoms, clinical features, radiological features, deformities, medical, surgical management [Briefly]. Describe the PT assessment and management and home program for the following conditions – Osteoarthritis - emphasis mainly on knee, hip and hand, Rheumatoid Arthritis, Ankylosing spondylitis, Gout, Perthes disease, Periarthritic shoulder.

6. **Infective conditions[2 Hours**]: Definition, signs and symptoms, clinical features, radiological features, medical, surgical management **[Briefly].** Describe PT assessment and management for following conditions – Osteomyelitis – acute and chronic, Septic arthritis, pyogenic arthritis, TB spine and major joints - knee and hip.

7. **Postural abnormalities of spinal column [3 Hours]:** Definition, clinical features, and deformities, medical and surgical management. Describe PT assessment and management and home program**.**

8. **Deformities [3 Hours]:** Review the causes, signs and symptoms, radiological features, medical and surgical management. Describe the PT assessment and management of the following conditions:
   a) **Congenital**: CTEV, CDH, Torticollis, pes planus, pes cavus deformities.
   b) **Acquired:** scoliosis, kyphosis, coxa vara, genu varum, valgum and recurvatum.

9. **Cerebral palsy [2 Hours]:** Deformities and PT management after surgical corrections.

10. **Poliomyelitis [2 Hours]:** Deformities PT assessment and management after surgical corrections and reconstructive surgeries - emphasis on tendon transfer and home program

11. **Amputations [4 Hours]:** Definition, levels, indications, types, PT assessment, aims, management pre and post operatively. PT management with emphasis on stump care and bandaging. Pre and post prosthetic training, checking out prosthesis, complications of amputations and its management.

SECTION – II [40 Hours]

1. **Spinal conditions [5 Hours]: Review** briefly the causes, signs and symptoms, investigations, radiological features, neurological signs. PT assessment, aims, and management and home program of the following conditions: Cervical spondylosis, Lumbar spondylosis, Spondylolisthesis, Spinal canal stenosis, Spondylolysis, Sacroiliac joint dysfunction, Intervertebral disc prolapse, Coccydynia, Spina bifida occulta.

2. **Traction [2 Hours] :** Effects of spinal traction, types of traction, modes of application, indications for spinal traction, contraindications, precautions, limitations of traction.

3. **Osteoporosis [1 Hour]:** causes, predisposing factors, investigations and treatment.

4. **Orthopedic surgeries [5 Hours]:** Pre and post operative PT assessment, goals, precautions and PT management of following surgeries such as : Arthrodesis, Osteotomy, Arthroplasty-partial and total - Excision arthroplasty, excision arthroplasty with implant, interpositional arthroplasty and total replacement; Tendon transplant, Soft tissue release- tenotomy, myotomy, lengthening; Arthroscopy, Spinal stabilization, Re-attachment of limbs, External fixators, Synovectomy.

5. **Shoulder joint [4 Hours]:** Shoulder instabilities, TOS, RSD, Impingement syndrome - conservative and Post operative PT management. Total shoulder replacement and Hemi replacement. - Post operative PT management. AC joint injuries - rehabilitation. Rotator cuff tears- conservative and surgical repair. Subacromial decompression – Post-operative PT management.

6. **Elbow and forearm [2 Hours]:** Excision of radial head - Post operative PT management. Total elbow arthroplasty- Post operative PT management.

7. **Wrist and Hand [3 Hours]:** Total wrist arthroplasty. Repair of ruptured extensor tendons. Carpal tunnel syndrome. Flexor and extensor tendon lacerations - Post operative PT management.

8. **Hip Joint surgeries [3 Hours]:** Hemi and total hip replacement - Post operative PT management. Tendonitis and bursitis. - management.

9. **Knee joint [5 Hours]:** Lateral retinacular release, chondroplasty- Post operative management. Realignment of extensor mechanism. ACL and PCL reconstruction surgeries - Post operative rehabilitation. Meniscectomy and Meniscal repair - Post operative management. Plica syndrome, patellar dysfunction and Hoffa's syndrome- conservative management. TKR- rehabilitation protocol. Patellar tendon ruptures and Patellectomy- rehabilitation

10. **Ankle and foot [2 Hour]:** Ankle instability. Ligamentous tears- Post operative management.

11. **Sports Physiotherapy [5 Hours]:** Stages of soft tissue healing. Treatment guidelines for soft tissue injuries- Acute, Sub acute and chronic stages. Repair of soft tissues- rupture of muscle, tendon and Ligamentous tears. Soft tissue injuries- prevention and rehabilitation of, Lateral ligament sprain of ankle. Rotator cuff injuries. Collateral and Cruciate injuries of knee. Meniscal injuries of knee. Supraspinatus and Bicipital tendonitis . Pre patellar and Subacromial bursitis. Tennis and Golfer's elbow. Hamstring strains, Quadriceps contusion, TA rupture. Wrist sprains.

12. **Application of various taping and wrapping methods for support and relief of pain. [3 Hours]**

PRACTICAL: 60 Hours

Practical shall be conducted for all the relevant topics discussed in theory in the following forms:

1. Bedside case presentations and case discussions
2. Lab sessions consisting of evaluation and assessment methods on student models, treatment techniques and practice sessions.

Recommended books:

1. Tidy's physiotherapy – Porter
2. Physical Therapies in Sport and Exercise by Gregory Kolt and Lynn Snyder-Mackler, 2007.
3. Clinical orthopedic rehabilitation- Brotzman.
4. Orthopedic physiotherapy - Jayant Joshi.
5. Physical Rehabilitation Assessment and Treatment – O'Sullivan Schmitz
6. Sports Injuries: Diagnosis and Management for Physiotherapists by Christopher M. Norris (1992)
7. Orthopedic Physical Therapy – Donatelli & Wooden
8. Management of Common Musculoskeletal Disorders – Hertling & Kessler
9. Treatment and Rehabilitation of Fractures by Stanley Hoppenfeld and Vasantha L Murthy
10. Physiotherapy In Orthopaedics: A Problem-Solving Approach by Karen Atkinson, Fiona Coutts, and Anne-Marie Hassenkamp
11. Principles of Neuromusculoskeletal Treatment and Management by Nicola J. Petty (2004)
12. Therapy for Amputees by Barbara Engstrom and Catherine Van de Ven Z
13. Pocketbook of Taping Techniques by Rose Macdonald
14. Orthopedic Physical Assessment by David J. Magee (2007)
15. Orthopaedic Physiotherapy (Cash's Textbook) by Marian Tidswell
16. Rehabilitation for the Postsurgical Orthopedic Patient by Lisa Maxey MS PT and Jim Magnusson
17. Orthopedic and Sports Physical Therapy by Terry Malone, Thomas McPoil and Arthur J. Nitz
18. Differential Diagnosis for the Orthopedic Physical Therapist by James Meadows (1999)
19. In-Patient Physiotherapy: Management of Orthopaedic Surgergy by Lucy S. Chipchase, Scott A.
20. Pocket Guide to Musculoskeletal Assessment by Richard Baxter .
21. Sports physiotherapy- Maria Zuluaga

Paper V: GENERAL MEDICAL AND SURGICAL PHYSIOTHERAPY

Total hours: Theory: Practical:	140 80 60
Total Hours/ Week: Lecture: Practicals: Seminars/ Tutorials:	6 hours 2 hours /week 3 hours/ week 1 Hour/ week
Method of Assessment:	Written, Oral, Practical

Course Description:

At the end of the course the candidate will be able to:

1. Identify discuss and analyze various dysfunctions based on Pathophysiological principles and arrive at the appropriate functional diagnosis.
2. Acquire knowledge of rational of basic investigative approaches in medical system and surgical intervention, regimes in general surgeries (special emphasis on abdominal surgeries)
3. Execute effective physiotherapeutic measures (with appropriate clinical reasoning) and exercise, conditioning in general medical and surgical conditions.
4. Acquire knowledge of the overview of patient's care in the I.C.U. for bronchial hygiene and continuous monitoring of the patient in I.C.U.
5. Select strategies for cure, care and prevention; adopt restorative and rehabilitative measures for maximum possible functional independence of a patient at home, work and in community.
6. Acquire the knowledge of evaluation and physiotherapeutic treatment for obstetrics and gynecological conditions.
7. Acquire the knowledge of various conditions where physiotherapy plays a vital role in the rehabilitation (psychiatry, dermatology, geriatric and ENT conditions)

   Evaluate, grade and treat non-healing wounds.

THEORY

SECTION – I [40 Hours]

1. **Woman's Health: [20 Hours]**
   - **A. Adolescent phase –**
     a) Obesity
     b) Menstrual disorders like PCOD(poly cystic ovarian disorder), pre-menstrual syndrome and dysmenorhea with its PT management

B. Child-bearing phase –

a) Complications during pregnancy and its PT management according to specific conditions/complications.
b) Antenatal Phase– specific breathing exercise, relaxation, postural training, pelvic floor exercise and strengthening exercise.
c) Physiotherapy during labor.
d) Postnatal Phase – complication and its physiotherapy management. Postnatal exercise after normal labour and labour with invasive procedures like: Episiotomy, Forceps delivery, Caesarian section

C. Climacteric Phase -

a) Menopause, Osteoporosis & Physiotherapy management
b) Gynecological conditions like Incontinence & its types, Prolapse & displacement along with its PT management
c) Gynecological operations - hysterectomy, prostatectomy, Mastectomy- Simple and Radical, pelvic repair and other operations with PT management.

2. **Management of vascular disease [8 Hours]**: thrombosis, phlebitis and phlebothrombosis, burger's disease, varicose veins, DVT, venous ulcers, lymphoedema & its PT management

3. **Skin conditions & Venereal diseases [5 Hours]:** Acne, Psoriasis, Alopecia, Vitiligo, Hyperhidrosis, And STD's: AIDS, syphilis, and gonorrhea along with PT management. Wounds, local infection, ulcers, pressure sore-UVR and other electrotherapeutic modalities for healing of wounds, hypergranulated scars, relief of pain and modality.

4. **Role of Physiotherapy [7 Hours] :** in diabetes Mellitus, Hypertension, Vertigo, Leprosy, Myofascial Pain, Acute and Chronic Pain Syndromes, Obesity, and Hemophilia.

SECTION – II [40 Hours]

1. **Psychiatry - physiotherapy in psychiatric conditions. [6 Hours]**

a) Introduction to Psychiatry in Physiotherapy.
b) Substance related disorders-alcohol, opium, hallucinogens, etc.
c) Sleep disorders.
d) Anxiety disorders - GAD, phobias, panic disorder, ASD, PTSD, and OCD.

2. **Complication common to all operations. [2 Hours]**

3. **Abdominal incisions [2 Hours]**

4. **Physiotherapy in pre and post operative stages. [4 Hours]**

5. **Operations of upper G.I. Tract - esophagus, stomach, duodenum. [4 Hours]**

6. **Operations of large and small intestine [6 Hours]**: Appendicectomy, cholecystectomy, partial colectomy, colostomy, ileostomy, hernia and herniotomy, hernioraphy, hernioplasty.

7. **Burns and its treatment [5 Hours]:** physiotherapy in burns, skin graft, and reconstructive surgeries.

8. **ENT [3 Hours]**: sinusitis, non suppurative and chronic suppurative otitis media, otosclerosis, labrynthitis, mastoidectomy, chronic rhinitis, laryngectomy, pharyngeo-laryngectomy, facial palsy.

9. **Oncology [8 Hours]**: Etiology, stages and types of cancer developments; Clinical manifestations, Diagnosis of cancer; Physiotherapy examination and treatment of specific representative cancers: Breast and lung cancer.

PRACTICAL: [60 Hours]

Practical shall be conducted for all the relevant topics discussed in theory in the following forms:

1. Bedside case presentations and case discussions
2. Lab sessions consisting of evaluation and assessment methods on student models, treatment techniques and practice sessions.

Recommended books:

1. Tidy's Physiotherapy (Physiotherapy Essentials) by Stuart Porter (2008)
2. Physiotherapy in Obstetrics and Gynaecology by Jill Mantle; Jeanette Haslam and Sue Barton
3. Women's Health: A Textbook for Physiotherapists by Ruth Sapsford, Joanne Bullock-Saxton, and Sue Markwell.
4. Burn Care and Rehabilitation: Principles and Practice (Contemporary Perspectives in Rehabilitation) by Reginald L. Richard and Marlys J. Stanley (1994).
5. Cash's Textbook of Medical and Surgical conditions for Physiotherapists by Joan E. Cash and Patricia A. Downie (1993)

Reference Books:

1. Obstetric and Gynecologic Care in Physical Therapy, by Rebecca G. Stephenson and O'Connor
2. Rehabilitation and palliation of cancer patients by Herrmann Delbrück
3. Physiotherapy in Psychiatry by Mary Hare
4. Physiotherapy in Mental Health: A Practical Approach by Tina Everett, Dennis, and Eirian Ricketts.
5. Health Promotion Throughout the Life Span by Carole Lium Edelman and Carol Lynn Mandle
6. Geriatric Physical Therapy by Andrew A., Ph.D. Guccione.
7. Essentials of Geriatric Physical Therapy by Jennifer M., Bottomley
8. Saunders Manual of Physical Therapy Practice by Rose Sgarlat Myers; W. B. Saunders Company

Paper-VI: RESEARCH METHODOLOGY

Subject Title: Total hours: Theory:	Research Methodology 50 50
Lecture:	2-3 hours/ week
Method of assessment:	Written

Course Description:

This course will introduce to the student the basic research methodology to acquire skills to review literature selection of research strategy, formulate problems, research writing and publishing.

THEORY

1. **Introduction to Research methodology [2 hours]:** Meaning of research, objectives of research, Motivation in research, Types of research & research approaches, Research methods vs. methodology, Criteria for good research, Problems encountered by researchers in India.

2. **Research problem [4 hours]**: Statement of research problem., Statement of purpose and objectives of research problem, Necessity of defining the problem.

3. **Review of Literature. [4 hours]**

4. **Research Proposal & Ethics. [4 hours]**

5. **Research design [2 hours]:** Meaning of research design, Need for research design, Features for good design, Different research designs, Basic principles of research design.

6. **Sampling Design [2 hours]:** Criteria for selecting sampling procedure, Implications for sample design, steps in sampling design, characteristics of good sample design, Different types of sample design.

7. **Measurement & scaling techniques [2 hours]:** Measurement in research, Measurement scales, sources of error in measurement, Technique of developing measurement tools, Meaning of scaling, its classification., Important scaling techniques.

8. **Methods of data collection [2 hours]:** Collection of primary data, collection data through Questionnaires & schedules, Difference between questionnaires & schedules.

9. **Non- experimental and Experimental Research. [5 hours]**

10. **Sampling fundamentals [2 hours]**: Need for sampling & some fundamental definitions, Important sampling distributions

11. **Processing & analysis of data**. **[3 hours]**: Processing operations, problems in processing , Types of analysis, Statistics in research, Measures of central tendency, Dispersion, Asymmetry, relationship

12. **Testing of hypothesis [5 hours]:** What is hypothesis? Basic concepts concerning testing of hypothesis, Procedure of hypothesis testing, measuring the power of hypothesis test, Tests of hypothesis, limitations of the tests of hypothesis .

13. **Parametric and Nonparametric Tests. [5 hours]**

14. **Reporting Research. [4 hours]**

15. **How and what to read from journals? [4 hours]**

Recommended Textbooks:

1. Research Methods for Clinical Therapists -- Applied Project Design and Analysis by Carolyn M. Hicks.
2. Research Methodology By Kothari.
3. Elements of Research in Physical Therapy: Dean P. Currier
4. First Steps in Research: A Pocketbook for Healthcare Students by Stuart B. Porter.
5. Practical Research: A Guide for Therapists by Sally French, Frances Reynolds, and John Swain, 2001.
6. The Researching Therapist: A Practical Guide to Planning, Performing and Communicating Research by Sue Jenkins, Connie J. Price, and Leon Straker
7. Physical Therapy Research: Principles and Applications by Elizabeth Domholdt.
8. Evaluating Research: Methodology for People Who Need to Read Research by Francis C. Dare (2010)
9. How to Read a Paper: The Basics of Evidence-Based Medicine by Trisha Greenhalgh (2010).
10. How to Write a Great Research Paper, New Edition by Leland Graham and Isabelle McCoy (2007)
11. How to Write a Paper : George M. Hall (2008)

Paper – VII: RADIOLOGY

Subject Title: Total hours: Theory:	Radiology 20 20
Lecture:	1 hour/ week

Course Description:

This course will introduce to the student to acquire skills to read & interpret salient features of the x-ray of the spine & extremities and to co-relate the radiological findings with the clinical findings.

THEORY

1. **Basic outlines of X-rays, CT scan, MRI and Ultra sonography. [4 hours]**
2. **Basic radiology of:**
   a) Musculoskeletal System: [8 hours]
      - Upper extremities
      - Lower extremities
      - Spine

   b) Respiratory System [2 hours]

   c) Cardiac System [2 hours]

   d) Reproductive & Genitourinary System [1 hour]

   e) Nervous System [3 hour]

Recommended books:

1. James Swain & Kenneth W. Bush. Diagnostic Imaging for Physiotherapists.
2. Lynn N. McKinnis. Fundamentals of Musculoskeletal Imaging; F.A. Davis
3. L.C. Gupta & A. Gupta. X-ray Diagnosis and Imaging.

Paper – VIII: COMPUTER APPLICATION

Subject Title: Total hours: Theory: Practical:	Computer Application 30 10 20
Lecture: Practical:	1 hour/ week 1 Hour/Week

Course Description:

The scope of Computer Application has expanded enormously in the recent years. It can be offered as a course to undergraduate physiotherapy students due to easy availability of infrastructure and hardware. The usual lecture, Tutorial and Assignments will be supplemented with supervised reading and problem sessions, online lessons, websites, and computer software aided learning.

1. **Computer Hardware [2 hours] :** System Unit, Monitor, Keyboard, Mouse, USB Drive, Hard Disk, DVD & CD ROMs, Hardware Connections: Printer, Scanner, Web Cams etc.

2. **Computer Software [2 hours]:** Operating System – Win XP, Windows Vista , Internet Explorer and the World Wide Web, Applications Software- MS Office, SPSS, Graph Pad etc.

3. **Windows Explorer [2 hours]:** My Documents. My Computer. Recycle Bin, Open, Close, Resize, Minimize, Move and Customize Windows , The Start Menu, Searching for Files, Move, Copy, Save, Name, Delete and Backup files and folders, Windows Help: Search, Index. Help Online

4. **Internet Explorer and the WWW [2 hours]:** Connecting to the Internet Hardware, Software & ISPs Search Engines, Web Portals, Email: Compose and send a message. Reply to a message, Working with email attachments.

5. **Working with Applications [2 hours]:** Understanding Windows Accessories. Use MS Word, MS Excel, MS Power point etc. Principles in scientific research, work processing, medicine, libraries, education, information system.

Recommended Books:

1. V. Rajaraman: Fundamentals of Computers, Prentice Hall of India, 2002
2. R. Hunt, J. Shelley: Computers and Commonsense, Prentice Hall of India, 2002
3. A. Leon, M. Leon, Fundamentals of Information Technology, Leon Vikas, 2002
4. MS Office 2007.
5. Ajay Gaur : SPSS

Paper-IX: PSYCHIATRY

Subject Title: Total hours: Theory:	Psychiatry 30 30 Hours
Lecture :	1 hour / week

Course Description:

The course provides a basic understanding of the normal and abnormal human behavior and the principles of psychiatry and also helps the student to manage patients with behavioral changes and psychiatric disease condition in the hospital and the community.

THEORY

1. **Introduction: [3 hours]**: History and present trends of psychiatry.Scope and role of mental health care.Concepts and views on normal, abnormal human behavior

2. **Psychodynamics of Abnormal Human Behaviour [3 hours]:** Causes of abnormal behavior. Psychiatric disorders and their classification

3. **Psycho-neurotic disorders:[3 hours]:** Anxiety neurosis, phobic neurosis, hysterical neurosis, obsessive compulsive disorders, hyperchondriac neurosis, post traumatic disorder

4. **Psychotic disorders:[3 hours]:** Organic psychosis, Functional psychosis – Schizophrenia, Major affective disorders – depression, mania, maniac depressive psychosis

5. **Psycho physiological disorders: [3 hours]** Concepts of psychosomatic conditions and anorexia nervosa, bulimia, obesity

6. **Personality disorders[3 hours]:** Paranoid personality disorders, Antisocial personality disorders, Borderline personality disorders

7. **Substance abuse disorders[2 hours]:** Alcoholic abuse, dependence, Drug abuse, dependence

8. **Psychiatric emergencies: [2 hours]:** Suicidal & Aggressive behavior, Hallucinations, alcohol withdrawal

9. **Child Psychology: [4 hours]:** Habit disorders, Childhood schizophrenia ,Autism ,Bedwetting, encopresis, hyperkinetic disorder. Stammering / Stuttering, Juvenile delinquency, Psychiatric problems in mental retardation , Child guidance clinic

10. COMMUNITY MENTAL HEALTH: [4 hours]

a) Identification of psychological crisis situation and intervention
b) Promotion of mental health.
c) Prevention of potential problems of mental health in community.
d) Rehabilitation of mentally ill in the community.
e) Approaches to community mental health in India.
f) Psychological care of geriatric patients.

RECOMMENDED Text Books:

1. Clinical Psychiatry, Mayol – gloss; 3rd Edition, AITBS
2. Psychiatry, James Scully, 4th Edition, Lippincott Williams & Wilkins
3. A short textbook of Psychiatry, Ahuja; 5th Edition – Jaypee
4. Handbook of Psychiatry, Dr. L.P. Shah, 3rd Edition, Uni U.C.B. Pvt. Ltd.

CLINICAL TRAINING - I

Total Hours: **430**

Method of Assessment: Oral, Practical

Students will be posted in rotation in the following areas/wards. The students will be clinically trained to provide physiotherapy care for the patients. They will be trained on bed side approach, patient assessment, performing special tests, identifying indications for treatment, ruling out contraindications, decision on treatment parameters, dosage and use relevant outcome measures under supervision.

1. Physiotherapy OPD
2. General Medicine & MICU
3. General Surgery & CTS-ICU
4. Burns & Plastic Surgery
5. Orthopedics
6. Neurology
7. Pediatrics, PICU, NICU
8. O&G
9. Community –PHC
10. Prosthetic & Orthotic Unit (Artificial Limb Center)