

## **COURSES OFFERED BY THE DEPARTMENT OF PHYSIOTHERAPY**

### **SECOND YEAR FIRST SEMESTER**

#### **AH 2101 – English & Communication Skills III (Non-credit)**

Language Development and Writing: The four main types of sentences, Different kinds of clauses, Expansion of sentence structures, Cause-effect relationship, Comparisons, Listening: Developing listening skills through audio/video based learning, Exposure to native and non-native speakers of English (different accents), TOEFL practice tests, Reading: Practicing the reading skills (skimming, scanning, etc.) developed in AH 1101 and AH 1201 through activities such as, pre-reading (discussion through brain storming, puzzles, etc.), skimming and scanning, comprehension, vocabulary expansion related activities leading towards a final speech activity: presentation of a report, poster, etc., and Individual loud reading. Vocabulary: Vocabulary related to specific fields (law, business, politics, etc.), Fixed expressions: Everyday expressions, Idioms, Proverbs, etc., Speech: Mini-presentations based on Reading and Listening activities. Presenting reading reports.

Assignments – 40%      End semester -60%

#### **AH 2102 – Basic Research Methodology (Credit – 01)**

Philosophy of science and the notion of truth, principles of evidence based practice and clinical effectiveness/efficiency, traditions, preferences and positions in applied qualitative research, narrative methodologies and their use in clinical/professional practice, quantitative reasoning and its application in clinical/professional practice, data gathering tools/approaches – qualitative and quantitative methods and analysis, practice based inquiry/participative inquiry/generating evidence based practice, case studies, ethics in research, describe the foundations used for ethical decision-making, patients' rights, need of a code of ethics for practice.

Assignments -25%      End semester-75%

#### **PT 2101 – Biomechanics & Kinesiology II (Credits – 02)**

Mechanics of Peripheral joints (Temperomandibular Joint, Thorax and chest wall, Hip, Knee, Ankle, Vertebral column), Gait.

Mid semester 20%, End semester 80%.

#### **PT 2102 – Physiotherapy skills II (Credits – 02)**

Manual Muscle testing, Limb length and limb girth measurement, Chest Expansion measurement, Passive/Active assisted/Active movements, Stretching, Strengthening, Mobilization and manipulation, PNF, Massaging techniques, Relaxation, Neuromuscular coordination (Frenkel's Exercises), breathing exercises.

Mid semester 20%, End semester 80%.

#### **PT 2103 – Electro Physical Agents in Physiotherapy II (Credits – 03)**

Pain, Low frequency ( faradic current, galvanic current, Sinusoidal current &Diadynamic current, Ionization/Iontophoresis, Cathodal/Anodal galvanism, Micro current & Macro current,

Types of Electrical stimulators, Principles of Application, Nerve muscle Physiology, TENS), Electro-diagnosis (FG test, SD curve, NCV studies, EMG, Bio-feedback ), Medium Frequency ( IFT, Russian currents, Rebox type current), Thermo & Actinotherapy (Electro- magnetic Spectrum, Short Wave Diathermy, Pulsed Electro-magnetic Energy, Micro Wave Diathermy, Ultra Sound, Infra-Red Radiation, Ultra Violet Radiation, LASER), Superficial Heating Modalities (Wax Therapy, Contrast Bath, Moist Heat, Whirl Pool bath, Cryotherapy).

Mid semester 20%, End semester 80%.

### **PT 2104 – Musculoskeletal Physiotherapy Theory & Practice I (Credits – 03)**

Introduction, Traumatology, Fractures and Dislocations of Upper Limb, Fracture of Spine, Fractures and Dislocations of Lower Limb, Soft Tissue Injuries, Hand Injuries, Amputations, Traumatic Spinal Cord Injuries, Deformities, Congenital Deformities, Acquired Deformities, Disease of Bones and Joints, Inflammatory and Degenerative Conditions, Syndromes, Neuromuscular Disorders, Cervical and Lumbar Pathology, Orthopaedic Surgeries, Regional Conditions.

Mid semester 20%, End semester 80%.

### **PT 2105 – Neurological Physiotherapy Theory & Practice I (Credits – 03)**

Basic Neurophysiology, Neurological Assessment, Deafness, vertigo, and imbalance, Lower cranial nerve paralysis – Aetiology, clinical features, investigations, and management of following disorders, Dysphagia, Cerebrovascular diseases, Head injury, Higher cortical, neuro psychological and neurobehavioral disorders, Movement disorders, Cerebellar and coordination disorders, Spinal cord disorders, Brain tumours and spinal tumours, Infections of brain and spinal cord, Motor neuron diseases, Multiple sclerosis, Disorders of neuromuscular junction, Muscle diseases, Polyneuropathy,

Focal peripheral neuropathy, Paediatric neurology, Toxic, metabolic and environmental disorders, Introduction, Indications and Complications of following Neurosurgeries.

Mid semester 20%, End semester 80%.

### **PT 2140 – Systemic Pathology (Credits – 02)**

Special pathology of major organ systems in Unit I as given below.

Unit – I : Systemic

Special pathology of major organ systems

- Respiratory tract – tuberculosis bronchitis, lobar pneumonia, bronchopneumonia, lung abscess, emphysema, pneumoconiosis, bronchiectasis, tumours.
- Cardiovascular system - Rheumatic heart disease and its complications, infective endocarditis, atherosclerosis and its complications, ischemic infraction, aneurysm
- Gastrointestinal tract – oesophageal varices, structures, peptic ulcers, bacillary dysentery, amoebic dysentery, typhoid, tuberculosis, acute pancreatitis, carcinoma of GI tract-buccal, oesophageal, gastric, intestinal

- Liver, gall bladder, pancreas – Pancreatitis, pancreatic carcinoma, hepatic A, B, non – A, non – B, fulminant, chronic liver abscess tumours, primary and secondary, cholecystitis
- Kidneys and urinary tract – acute and chronic glomerulo nephritis and pyelonephritis, calculi, acute renal failure, chronic renal failure, renal carcinoma, cystitis
- Male genital system – prostatic hyperplasia and carcinoma, cryptorchidism, testicular atrophy, infection and tumours, carcinoma penis
- Female genital system – carcinoma cervix, fibroid, carcinoma endometrium, ovarian cysts and tumours, tuberculosis of fallopian tube, tube block, ectopic gestation, vesicular mole, choriocarcinoma, expoliative cytology
- Central nervous system – Hydrocephalus, meningitis, encephalitis, vascular disorders- thrombosis, embolism, haemorrhage, strokes, paraplegia, quadriplegia, tumours- meningiomas, gliomas, metastatic tumours.
- Bone – Fractures, pathological fractures, osteoporosis, osteomyelitis, arthritis, tumours.

#### Unit – II: Clinical pathology

- Review of blood groups and their relation to transfusion of blood and its components.  
The importance of patient and donor identification for safe transfusion (and) practice  
The role of nurses in donor motivation with particular references to the prevention of transfusion related diseases  
Review of normal blood composition. Methods of collection of blood specimens for various clinical pathology, biochemistry and microbiology tests.  
Haematological tests in the assessment and monitoring of disease status – haemoglobin, white cell and platelet counts and coagulation abnormalities.  
Review of CSF composition. Indication and precautions for a lumbar puncture  
The laboratory tests used in CSF analysis and deviation from the normal.  
Examinations of other cavity fluids – transudates and exudates.
- Review of gastric and duodenal contents:  
Indications for analysis and role of nurses in this procedure – physical characteristics and composition of urine.
- Methods of collection for various tests  
Alterations in diseases and interpretation
- Normal and abnormal appearance of faeces  
The value of stool examination in the diagnosis of disease.
- Characteristics of normal semen  
Sperm count, motility and morphology and their importance in infertility.

#### Suggested practicals:

Demonstration of charts and pathological specimens' relevant general and systemic pathology including exfoliative and fine needle aspiration cytology.

Urine analysis: the students to do tests for urine sugar, acetone and albumin. Dip stick method may be used.

Semen analysis demonstration

Demonstration of haemoglobin estimation, WBC, differential count and peripheral blood smears of iron deficiency and megaloblastic anaemia and leukaemia.

Demonstration of analysis and gastric and duodenal contents

Demonstration of normal and abnormal cerebrospinal fluid and other cavity fluid.

Demonstration of blood grouping and cross matching.

Mid semester 25%, End semester 75%.

## **SECOND YEAR SECOND SEMESTER**

### **AH 2201 – English & Communication Skills IV (Non-credit)**

Language Development and Writing: Development of writing skills—Transitional devices, paragraph building, process writing, reports such as nurse's reports etc., Listening: Developing listening skills through audio/video based learning, Exposure to native and non- native speakers of English (different accents), TOEFL practice tests. Reading: Reading comprehension activities leading towards a final speech activity: presentation of a report, poster, etc., and Individual loud reading. Homonyms, Synonyms, Acronyms, Homophones, Phrasal verbs, Varieties of English, Abbreviations. Speech: Presenting reports, Debates, Activities consolidated with parallel grammar, reading and listening lessons. (Note: All four language skills: Reading, Writing, Listening and Speaking are incorporated)

Assignments – 40%      End semester -60%

### **PT 2201 – Musculoskeletal Physiotherapy Theory & Practice II (Credits – 03)**

Physiotherapy assessment for Orthopaedic conditions , Fractures, Specific fractures and dislocations, Selection and application of physiotherapeutic techniques, Principles of various schools of thought in manual therapy, Degenerative and Inflammatory conditions, Infective conditions, Define, review the postural abnormalities of spinal column, Deformities, Cerebral palsy, Poliomyelitis, Leprosy, Amputations, Spinal conditions, Effects of spinal traction, Osteoporosis, Orthopaedic surgeries, Shoulder joint, Elbow and forearm, Wrist and Hand, Hip: Joint surgeries , Knee, Ankle and foot.

Mid semester 20%, End semester 80%.

### **PT 2202 – Neurological Physiotherapy Theory & Practice II (Credits – 03)**

PT assessment for Neurological/Neurosurgical conditions , Neuro-Physiological Techniques, Paediatric Neurology, Evaluation and Management of Brain and Spinal Cord Disorders, Evaluation and management of Cerebellar, Spinal Cord and Muscle Disorders, Evaluation and management of Peripheral Nerve Injuries and Disorders, Pre and post neurosurgical assessment and management Practical – based on above concepts.

Mid semester 20%, End semester 80%.

**PT 2203 – Common Medical, Obstetrics and Gynecological condition for Physiotherapists I (Credits – 03)**

Medical conditions; Infections, Poisoning, Food and nutrition, Endocrine Diseases, Diseases of Blood, Diseases of digestive system, Diseases of Skin, ENT, Ophthalmology, Obstetrics and Gynaecology Conditions, Psychiatric disorders, Learning, perceptual disorders, Mental Retardation, Problems in Emotional Development, Child – Parent Teacher, Childhood obesity and its complications, Down's syndrome, Congenital Neuromuscular Disorders, Spinal Dysraphism, Polio, Spinal Muscular Atrophy, ARDS, Juvenile Arthritis, Intensive Neonatological and paediatrics surgical care.

Mid semester 20%, End semester 80%.

**PT 2205 – Cardio respiratory and General surgical conditions for Physiotherapists I (Credits – 04)**

Reasons for Surgery, Causes, Clinical Presentation, Diagnosis and treatment of Thoracic Situations, Surgical Oncology, Disorders of the Chest Wall, Lung and Mediastinum, Disorders of the Heart, Thoracic surgeries, Diseases of the Arteries and Veins, Definition, Indication, Incision, Physiological changes and Complications following Common Operations, Burns, tendon transfer.

Mid semester 20%, End semester 80%.

**PT 2206 – Physiotherapy in Community Based Rehabilitation (Credits – 02)**

Rehabilitation, Community, Introduction to Community Based Rehabilitation, Principles of Community Based Rehabilitation, Planning and Management of CBR programmes, Disability, Disability evaluation, Role of Government in CBR, Role of social work in CBR, Role of Voluntary organizations in CBR, National/District Level Rehabilitation Programmes, Role of Physiotherapy in CBR, Screening and rehabilitation of pediatric disorders in the community, Extension of services and mobile units, Vocational Training in Rehabilitation, Geriatrics, Industrial Health and Ergonomics.

Mid semester 20%, End semester 80%.