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VEER NARMAD SOUTH GUJARAT UNIVERSITY
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વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી
યુનિવર્સિટી કેમ્પસ, ઉધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.
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–: પરિપત્ર :–

તબીબી વિદ્યાશાખા હેઠળની તમામ ફિઝીયોથેરાપી કોલેજોના આચાર્યશ્રીઓને જણાવવાનું કે,શૈક્ષણિક વર્ષ ૨૦૨૧–૨૨ થી થર્ડ યર બી.ફિઝીયોથેરાપીના નવા અભ્યાસક્રમના અમલીકરણ અંગે ચર્ચા કરતા ફિઝીયોથેરાપી વિષયની અભ્યાસસમિતિની તા.૧૮/૦૮/૨૦૨૧ની સભાનાં ઠરાવ ક્રમાંકઃ ૨ અન્વયે નીચે મુજબ કરેલ ભલામણ તબીબી વિદ્યાશાખાનાં અધ્યક્ષશ્રીએ વિદ્યાશાખાની મંજૂરીની અપેક્ષાએ તબીબી વિદ્યાશાખાવતી મંજૂર કરી એકેડેમિક કાઉન્સિલને કરેલ ભલામણ એકેડેમિક કાઉન્સિલની તા.૧૪/૦૮/૨૦૨૧ની સભાનાં ઠરાવ ક્રમાંકઃ૧૧ થી મંજૂર કરેલ છે. તેની જાણ સંબંધકર્તા શિક્ષકો અને વિદ્યાર્થીઓને કરવી તદ્ઉપરાંત તેનો અમલ કરવો.

ફિઝીયોથેરાપી વિષયની અભ્યાસસમિતિની તા.૧૮/૦૮/૨૦૨૧ની સભાનાં ઠરાવ ક્રમાંકઃ ૨

:: આથી ઠરાવવામાં આવે છે કે, શૈક્ષણિક વર્ષ ૨૦૨૧–૨૨ થી અમલમાં આવનાર થર્ડ યર બી.ફિઝીયોથેરાપીના નવા અભ્યાસક્રમ મંજુર કરવામાં આવે છે કે, અને તે મંજૂર કરવા તબીબી વિદ્યાશાખાને ભલામણ કરવામાં આવે છે.

એકેડેમિક કાઉન્સિલની તા.૧૪/૦૯/૨૦૨૧ની સભાનાં ઠરાવ ક્રમાંકઃ૧૧

:: આથી ઠરાવવામાં આવે છે કે, ફિઝીયોથેરાપી વિષયની અભ્યાસસમિતિની તા.૧૮/૦૮/૨૦૨૧ની સભાનાં ઠરાવ ક્રમાંકઃ ૨ અન્વયે ભલામણ કરેલ શૈક્ષણિક વર્ષ ૨૦૨૧–૨૨ થી અમલમાં આવનાર થર્ડ યર બી.ફિઝીયોથેરાપીના નવો અભ્યાસક્રમ મંજૂર કરવામાં આવે છે.

બિડાણ : ઉપર મુજબ

ક્રમાંક : એકે./પરિપત્ર/ફિઝીયોથેરાપી/ ૧૪૦૮૩/૨૦૨૧
તા. ૧૭/૦૯/૨૦૨૧

ઈ.ચા.કુલસચિવ

પ્રતિ,

૧) તબીબી વિદ્યાશાખા હેઠળની તમામ ફિઝીયોથેરાપી કોલેજોના આચાર્યશ્રીઓ.
૨) કાર્યકારી અધ્યક્ષશ્રી, તબીબી વિદ્યાશાખા
૩) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.

...તરફ જાણ તેમજ અમલ સારૂ.

DETAILED SYLLABUS

&

COURSE CONTENT

THIRD YEAR
BPT

BACHELOR OF PHYSIOTHERAPY –SUBJECT CONTENT

Third Year B. PT
EXAM PAPERS
Paper I: General Medicine & Pediatrics
Paper II: General Surgery
Paper III: Orthopedics & Traumatology
Paper IV: Neurology, Obstetrics & Gynecology
Paper V: Physical & Functional Diagnosis
Paper VI: Research Methodology & Biostatistics
NON-EXAM PAPERS
A: Basics in Radiology & diagnostic procedures
B: Psychiatry

DETAILED COURSE CONTENT

THIRD YEAR B. PT

Paper No.	Subject Code	Subject title	Allotted Hours		Total Hours of study	No. of Hours / Week
			Theory	Practical		
I	PT0301	General Medicine & Pediatrics*	50+30	***	80	2-3
II	PT0302	Surgery*	80	***	80	2-3
III	PT0303	Orthopedics & Traumatology*	80	***	80	2-3
IV	PT0304	Neurology, Obstetrics & Gynecology*	50+30	***	80	2-3
V	PT0305	Physical & Functional Diagnosis	100	100	200	6-7
VI	PT0306	Research Methodology & Biostatistics	40+40	***	80	4-5
		Non-Exam Papers				
A.	PTs0307	Basics in Radiology & diagnostic procedures	20	***	20	1-2
B.	PTs0308	Psychiatry	20	***	20	1-2

* These medical subjects should be taken by respective medical faculty

THIRD YEAR B. PT

Paper No.	Subject Code	Subject title	Duration of theory exam	Mark Distribution				Max. Marks
				Theory		Practical		
				External	Internal	External	Internal	
I	PT0301	General Medicine & Pediatrics	3 Hours	80 (50+30)	20	****	****	100
II	PT0302	Surgery	3 Hours	80	20	****	****	100
III	PT0303	Orthopedics & Traumatology	3 Hours	80	20	****	****	100
IV	PT0304	Neurology, Obstetrics & Gynecology	3 Hours	80 (50+30)	20	****	****	100
V	PT0305	Physical & Functional Diagnosis	3 Hours	80	20	80	20	200
VI	PT0306	Research Methodology & Biostatistics	3 Hours	80	20	****	****	100

TRANSCRIPT

Third Year B. PT		
Papers for University Examination		
I	**General Medicine & Pediatrics**	**80**
II	**Surgery**	**80**
III	**Orthopedics & Traumatology**	**80**
IV	**Neurology, Obstetrics & Gynecology**	**80**
V	**Physical & Functional Diagnosis**	**200**
VI	**Research Methodology & Biostatistics**	**80**
Non-Exam Papers		
A.	**Basics in Radiology & diagnostic procedures**	**20**
B.	**Psychiatry**	**20**
	Supervised Clinical Observation	**450**
	Extra-curricular Activities (Conferences, Seminars, Educational Tours, Sports and Cultural Activities)	**100**
Total Hours in Third Year		**1190**

Paper I: SECTION – I: GENERAL MEDICINE

Subject Code: PT0301A **Theory: 50 Hours**

Method of Assessment: Written

Course Description: This module will focus on etiology, pathophysiology, clinical presentation and management of various medical conditions involving the cardio vascular, respiratory, pulmonary, metabolic and general infections enabling the learner to acquire skills to identify the conditions with appropriate history and clinical examination. Students will also learn the pharmacological management of these medical conditions, its effects on various symptoms and its use during therapy.

S. No	Description of topics	Hours
1.	**CARDIOVASCULAR MEDICINE**	**18**
1.1	Definition, Classification, Manifestation, general principles of diagnosis and management of Hypertension	
1.2	Definition, Manifestation, general principles of diagnosis and management of cardiac conditions – Ischemic Heart Disease, Rheumatic Heart Disease, Myocardial Infarction, Angina Pectoris, Heart Failure, Infective Endocarditis, Cardiomyopathy	
1.3	Definition, Manifestation, general principles of diagnosis and management of valvular heart disease – Congenital and Acquired	
1.4	Investigations used in Cardiovascular conditions – Basics of ECG (normal and abnormal), Stress testing	
1.5	ICU – Instrumentation including ventilation setting and monitoring, Assessment, monitoring and management in ICU	
2.	**RESPIRATORY MEDICINE**	**14**
2.1	Definition, Manifestation, general principles of diagnosis and management of common respiratory infections – Tuberculosis, pneumonia, bronchitis, lung abscess	
2.2	Definition, Manifestation, general principles of diagnosis and management of Obstructive and restrictive lung diseases – Chronic Bronchitis, Bronchiectasis, Asthma, Cystic Fibrosis	
2.3	Definition, Manifestation, general principles of diagnosis and management of pleural diseases – Pleural effusion, Pneumothorax, Hydropneumothorax, Emphysema	
2.4	Definition, classification, Manifestation, general principles of diagnosis and management of chest wall deformities	
2.5	Definition, Manifestation, general principles of diagnosis and management of Occupational lung diseases	

2.6	Investigations used in respiratory and pulmonary conditions – Chest X-ray, Blood Gas Analysis, Pulmonary Function testing (PFT)	
3.	**METABOLIC AND ENDOCRINE MEDICINE**	**08**
3.1	Definition, classification, Manifestation, general principles of diagnosis and management of Diabetes mellitus	
3.2	Definition, Manifestation, general principles of diagnosis and management of Thyroid, pituitary and adrenal conditions	
3.3	Definition, Manifestation, general principles of diagnosis and management of Obesity	
3.4	Definition, Manifestation, general principles of diagnosis and management of Nutrition Deficiency diseases	
4.	**BONE, JOINT AND CONNECTIVE TISSUE DISORDERS**	**05**
4.1	Definition, Manifestation, general principles of diagnosis and management of Arthritis (Rheumatoid and Osteo)	
4.2	Definition, Manifestation, general principles of diagnosis and management of Gout, Systemic Lupus Erythmatosis and Polymyositis	
5.	**DISORDERS OF BLOOD**	**05**
5.1	Definition, classification, Manifestation, general principles of diagnosis and management of Anemia	
5.2	Definition, classification, Manifestation, general principles of diagnosis and management of Hemophilia	

Recommended Books:

1. Davidson's Principles and practice of Medicine – Stuart H Ralston, Ian D Penman, Mark W J Strachan, Richard P Hobson
2. Harrison's Manual of Medicine – Dennis L Kasper, Eugene Braunwald, Anthony S Fauci, Stephen L Hauser, Dan L Longo, J Larry Jameson
3. Hutchinson's Clinical Methods: An Integrated Approach to Clinical Practice – Michael Swash, Michael Glynn
4. Kumar and Clark's Clinical Medicine – Parveen Kumar, Michael Clark

Paper I: SECTION – II: PEDIATRICS

Subject Code: PT0301B **Theory: 30 Hours**

Method of Assessment: Written

Course Description: This module will focus on etiology, pathophysiology, clinical presentation and management of various pediatrics conditions and students will acquire skills to identify and describe normal development and growth of a child, significance and importance of immunization and psychological aspects of development. It also will enable the learner to acquire skills of clinical examination of a neonate with respect to various physiological functions.

S. No	Description of topics	Hours
1.	**NORMAL GROWTH AND DEVELOPMENT**	**03**
1.1	Normal motor, sensory, mental, social and language development	
2.	**PRENATAL, NEONATAL AND POSTNATAL**	**03**
2.1	High Risk Pregnancy – maternal and neonatal factors	
2.2	Maternal infections	
2.3	Pregnancy induced hypertension and other chronic maternal diseases	
3.	**IMMUNIZATION PROGRAMMES FOR NEWBORN & CHILDREN**	**03**
3.1	WHO specified vaccinations	
4.	**NUTRITION FOR NEWBORN**	**07**
4.1	Nutritional requirements, breast feeding	
4.2	Malnutrition syndromes, Vitamin and mineral deficiencies in children and their management	
5.	**MEDICAL ISSUES IN CHILDREN**	**14**
5.1	Definition, pathology, clinical presentation and management of Cerebral Palsy, Poliomyelitis, Muscular Dystrophy, Rheumatic Fever, Mental retardation, Atrial Septal Defect, Ventricular Septal Defect and Patent Ductus Arteriosus	
5.2	Definition, pathology, clinical presentation and management of Tetanus, Diptheria, measles, chicken pox and malaria	

Recommended Books:

1. Examination of the Newborn: A Practical Guide – Helen Baston, Heather Durward
2. Nelson's Essentials of Pediatrics – Karen J Marcdante, Robert M Kleigman
3. Practical Pediatrics – M J Robinson, D M Roberton

QUESTION PAPER PATTERN FOR THEORY EXAMINATION

Section – I: 50 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 1 Long Essay Type	(Any Two out of Four)	10x2=20
Q: 2 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 3 Short Answer Type	(Any Five out of Six)	3x5=15
Section – II: 30 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 5 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 6 Short Answer Type	(Any Five out of Six)	3x5=15

Paper II: SURGERY

Subject Code: PT0302 **Theory: 80 Hours**

Method of Assessment: Written

Course Description: This module will enable the students to understand the basics of types of surgery, surgical incisions and post-surgical complications. It will also enable the learners to identify and interpret the investigations, pre-operative and post-operative evaluation, indications and management related to general surgery, neurosurgery, cardiothoracic surgery and reconstructive surgeries.

S. No	Description of topics	Hours
1.	**WOUND AND HEALING**	**10**
1.1	Classification of wound, basic process involved in repair, phases of healing process, clinical management of wound, factors affecting healing, scars and its types	
2.	**GENERAL SURGERY**	**20**
2.1	Anaesthesia and its types, effects, indications and contraindications, potential complications and its management	
2.2	Common surgical incisions – classification, indications, advantages and disadvantages, complications.	
2.3	Abdominal Surgeries – Brief description of incisions, complications and management of appendisectomy, cholecystectomy, partial colostomy, ileostomy, hernia, prostractomy, nephrectomy	
2.4	Surgical Oncology – Definition, types, clinical manifestation, stages and surgical procedures involved in the management of cancer (specific to lungs, spine, breast, cervix and oral cavity)	
2.5	Mastectomy – classification, incisions, complications and management	
2.6	Tracheostomy - classification, indications, incisions and complications	
2.7	Surgical management of vascular disorders, Deep vein Thrombosis, Gangrene – classification, clinical presentation and management	
3.	**CARDIOTHORACIC AND PULMONARY SURGERY**	**20**
3.1	Brief description of indications, surgery and complications of surgeries of thorax, lungs, pleura and pericardium	
3.2	Brief description of clinical presentation, surgical management and complications of various valvular and congenital heart diseases – Ischemic heart disease, Atrial Septal Defect (ASD), Ventricular Septal Defect (VSD) and Patent Ductus Arteriosus (PDA)	

3.3	Brief description of indications, surgery and complications of peripheral arterial disorders including Deep Vein Thrombosis (DVT), Varicose veins, Arteriosclerosis, Atherosclerosis, Buerger's Disease, Raynaud's disease.	
3.4	Brief description of indications, surgery and complications of Thoracotomy, lobectomy, pneumonectomy, thoracoplasty	
4.	**NEUROSURGERY**	**20**
4.1	Brief description of indications and complications of neurosurgeries – Craniotomy, Cranioplasty, Deep Brain Stimulation, Shunting procedures, laminectomy and Rhizotomy, Thalamatomy, Pallidotomy, Endarterectomy	
4.2	Brief description of indications, surgery and complications of Intra cranial and spinal tumours, aneurysms and AV malformation	
4.3	Brief description of surgical options and management of peripheral nerve injuries	
5.	**RECONSTRUCTIVE SURGERY**	**10**
5.1	Skin grafts – Types, indications with special emphasis to burns and wounds	
5.2	Ulcers – Classification and post-operative care	
5.3	Keloid and hyperkeloid scar management	
5.4	Tendon transfer surgeries and their post-surgical management	

Recommended Books:

1. A Manual of Clinical Surgery – S Das
2. Bailey and Love's Short Practice of Surgery – Norman S Williams, Christopher J K Bulstrode, P Ronan O'Connell
3. Essential Neurosurgery – Andrew H Kaye
4. Cardiothoracic Surgical procedures and techniques: A Practical Manual – J Ernesto Molina
5. Cardiac Surgery – Joseph E Fischer
6. General Thoracic Surgery – Thomas W Shields, Joseph Locicero III, Carolyn E Reed, Richard H Feins
7. Textbook of Plastic and Reconstructive Surgery – Deepak M Kalaskar, Peter E Butler, Shadi Ghali
8. Reconstructive Surgery: Anatomy, Technique and Application – Glyn Evan, Michael Zenn

QUESTION PAPER PATTERN FOR THEORY EXAMINATION

Section – I: 40 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 1 Long Essay Type	(Any One out of Two)	10x1=10
Q: 2 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 3 Short Answer Type	(Any Five out of Six)	3x5=15
Section – II: 40 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 4 Long Essay Type	(Any One out of Two)	10x1=10
Q: 5 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 6 Short Answer Type	(Any Five out of Six)	3x5=15

Paper III: ORTHOPEDICS & TRAUMATOLOGY

Subject Code: PT0303 **Theory: 80 Hours**

Method of Assessment: Written

Course Description: This module will enable the learner to understand the aetiology, pathomechanics, clinical manifestation, conservative and surgical management of various traumatic and non-traumatic musculoskeletal and orthopedic conditions. It will also focus on clinical examination skills, differential diagnosis, application and interpretation of investigative procedures related to orthopedic conditions.

S. No	Description of topics	Hours
1.	**INTRODUCTION**	**05**
1.1	Orthopedic terminologies	
1.2	Clinical examination of an orthopedic patient – history taking, physical examination, differential diagnosis, investigative procedures (Plain radiograph, CT scan, MRI) – in brief	
2.	**TRAUMATOLOGY**	**40**
2.1	***Fractures***	
2.1.1	Definition, classification, causes and mechanisms, clinical features, process of healing and repair, complications and management	
2.1.2	Causes, types, clinical presentation, mechanism of injury, complications, conservative and surgical management of Upper limb fractures	
2.1.3	Causes, types, clinical presentation, mechanism of injury, complications, conservative and surgical management of Lower limb fractures	
2.1.4	Causes, types, clinical presentation, mechanism of injury, complications, conservative and surgical management of Spine, thorax and pelvic fractures	
2.2	***Subluxations and Dislocations***	
2.2.1	Definition, classification, causes and mechanisms, clinical features, complications and management of subluxations and dislocations	
2.2.2	Causes, types, clinical presentation, mechanism of injury, complications, conservative and surgical management of shoulder, acromioclavicular, elbow and hip subluxations and dislocations	
2.3	***Soft tissue Injuries***	
2.3.1	Definition, grades and differentiation of terms used in soft tissue injuries – Strain, sprain, contusion, capsulitis, tendinitis, bursitis, tenosynovitis, Fasciitis	

2.3.2	Causes, types, clinical presentation, mechanism of injury, complications, conservative and surgical management of soft tissue injuries of Upper limb	
2.3.3	Causes, types, clinical presentation, mechanism of injury, complications, conservative and surgical management of soft tissue injuries of Lower limb	
2.3.4	Causes, types, clinical presentation, mechanism of injury, complications, conservative and surgical management of soft tissue injuries of spine	
2.3.5	Crush injuries of hand and foot	
2.4	***Amputations***	
2.4.1	Indications for amputation, Classification, Levels of amputation of Upper and Lower limb, general principles of management following amputation	
3.	**NON-TRAUMATOLOGY**	**35**
3.1	***Deformities and Anomalies***	
3.1.1	Definition, classification, causes, clinical presentation, investigations, complications and management of congenital and acquired deformities of neck and Spine – Klippel Feil syndrome, Torticollis, Thoracic and chest wall deformities, Hyperlordosis, Hyperkyphosis, Scoliosis, Spina Bifida, Meningomyelocele	
3.1.2	Definition, classification, causes, clinical presentation, investigations, complications and management of congenital and acquired deformities of Upper limb – Sprengel's shoulder, Scapular winging, Cubitus Valgus, Cubitus Varus, Dupuytren's contracture, Madelung's deformity, limb deficiencies and hand anomalies	
3.1.3	Definition, classification, causes, clinical presentation, investigations, complications and management of congenital and acquired deformities of Lower limb – Congenital Dislocation of Hip, Coxa Vara, Coxa Valga, Genu Varum, Genu Valgum, Genu Recurvatum, Congenital Talipes Equinovarus, Pes cavus, Pes Planus, Hallux Valgus, Hallux Rigidus, Hammer Toe	
3.2	***Infective, Inflammatory and Degenerative Conditions***	
3.2.1	Definition, classification, causes, clinical presentation, investigations, complications and management of common infective conditions of musculoskeletal system – Osteomyelitis, Pyogenic Arthritis, Tuberculous Arthritis, Septic Arthritis	
3.2.2	Definition, classification, causes, clinical presentation, investigations, complications and management of common inflammatory conditions – Rheumatoid Arthritis, Psoriatic Arthritis, Hemophilic Arthritis, Juvenile Arthritis, Gouty Arthritis,	

	Periarthritis, Spondylitis, Capsulitis, Tendinitis, Bursitis, Tenosynovitis	
	Definition, classification, causes, clinical presentation, investigations, complications and management of common degenerative conditions – Spondylosis, Spondylolysis and listhesis, Intervertebral Disc Prolapse, Tennis Elbow and Golfer's Elbow, Osteoarthrosis	
3.3	***Tumors***	
3.3.1	Definition, classification, causes, clinical presentation, investigations, complications and management of benign and malignant tumors of musculoskeletal system	
3.4	***Metabolic bone diseases***	
3.4.1	Definition, causes, clinical presentation, investigations, complications and management of metabolic bone diseases – Osteomalacia, Osteopenia, Osteoporosis, Rickets	
3.5	***Surgical Procedures in Orthopedics***	
3.5.1	Classification, Indications, pre-operative and post-operative management of common orthopedic surgical procedures – Arthroplasties, Osteotomies, Arthrodesis, spinal surgeries	
3.6	***Miscellaneous Orthopedic conditions***	
3.6.1	Causes, clinical presentation, complications, conservative and surgical management of entrapment syndromes, compartment syndrome, IT Band syndrome, Piriformis syndrome, Plica syndrome, Hoffa's Fat Pad syndrome	
3.6.2	Causes, clinical presentation, complications, conservative and surgical management of poliomyelitis, leprosy, Metatarsalgia, Morton's Neuroma, Coccydynia	

Recommended Books:

1. Apley's System of Orthopedics and Fractures – Louis Solomon, David Warwick, Selvadurai Nayagam
2. Clinical Orthopedic Examination – Ronald McRae
3. Cyriax's Illustrated Manual of Orthopedic Medicine – J H Cyriax, P J Cyriax
4. Taylor's Musculoskeletal problems and injuries – Robert B Taylor
5. Turek's Orthopedics: Principles and their application – Stuart L Weinstein, Joseph A Buckwalter
6. Essentials of Orthopedic Surgery – Sam W Weisel, John N Delahay
7. Surgical Exposures in Orthopedics: The Anatomic Approach – Stanley Hoppenfeld, Piet de Boer, Richard Buckley

QUESTION PAPER PATTERN FOR THEORY EXAMINATION

Section – I: 40 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 1 Long Essay Type	(Any One out of Two)	10x1=10
Q: 2 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 3 Short Answer Type	(Any Five out of Six)	3x5=15
Section – II: 40 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 4 Long Essay Type	(Any One out of Two)	10x1=10
Q: 5 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 6 Short Answer Type	(Any Five out of Six)	3x5=15

Paper IV: SECTION – I: NEUROLOGY

Subject Code: PT0304A **Theory: 50 Hours**

Method of Assessment: Written

Course Description: This module will enable the learner to understand the aetiology, pathomechanics, clinical manifestation, conservative and surgical management of various neurological conditions. It will also focus on clinical examination skills, differential diagnosis, application and interpretation of investigative procedures related to neurological conditions.

S. No	Description of topics	Hours
1.	**INTRODUCTION**	**02**
1.1	Applied neuroanatomy: of brain and spinal cord, blood supply, connections of cerebellum and extra pyramidal tracts, relationship of spinal nerves to spinal cord segments, cranial nerves and plexuses (in Brief)	
1.2	Applied physiology: basis / disorders of tone, muscle contraction & movement, posture, bladder and bowel control, level of lesion – in brief	
2.	**NEUROLOGICAL ASSESSMENT**	**06**
2.1	Principles of clinical examination, diagnosis and differential diagnosis	
	Assessment of higher mental function, cranial nerves, motor and sensory system, tone, cerebellar function	
2.2	Investigative procedures in neurological conditions (in brief)	
3.	**DISORDERS OF BRAIN**	**15**
3.1	Cerebrovascular accidents - Definition, classification, causes, clinical presentation, investigations, complications, medical and surgical management	
3.2	Traumatic Head injury – classification, causes, clinical presentation, investigations, complications, medical and surgical management; Brief description on coma.	
3.3	Extrapyramidal lesions – classification based on region involved, causes, clinical presentation, investigations, complications, medical and surgical management of Parkinson's disease, Parkinsonism, Chorea, Athetosis, Dystonia, Hemiballismus	
3.4	Cerebellar Dysfunction – classification, causes, clinical presentation, investigations, complications, medical and surgical management	

3.5	Cranial Nerve lesions – causes, clinical presentation, investigations, complications, medical and surgical management	
3.6	Brain Tumors – classification, causes, clinical presentation, investigations, complications, medical and surgical management	
4.	**DISORDERS OF SPINAL CORD**	**07**
4.1	Traumatic Spinal Cord Injury – classification based on level of lesion, causes, clinical presentation, investigations, complications, medical and surgical management	
4.2	Spinal Tumors – classification, causes, clinical presentation, investigations, complications, medical and surgical management	
4.3	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of Transverse Myelitis, Sub acute combined degeneration of cord, Conus Medullaris syndrome, Syringomyelia and Spina Bifida	
5.	**PERIPHERAL NERVE LESIONS**	**08**
5.1	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of peripheral nerve injuries of Upper and Lower extremities	
5.2	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of Entrapment or compression neuropathies of Upper and Lower extremities	
5.3	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of Polyneuropathy	
5.4	Causes, clinical presentation, investigations, complications, medical and surgical management of Plexopathies – Brachial and Lumbosacral	
5.5	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of radiculopathies of Upper and Lower extremities	
6.	**DEMYELINATING AND INFLAMMATORY CONDITIONS**	**03**
6.1	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of Acute Disseminated Encephalomyelitis, Multiple Sclerosis, Guillian Barre Syndrome, Encephalitis, Meningitis, Poliomyelitis, Tabes Dorsalis	
7.	**NEUROMUSCULAR DISORDERS**	**03**
7.1	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of Progressive Muscular Dystrophy, Spinal Muscular Atrophy, Myopathies, Motor Neuron Disease	

8.	**NEUROMUSCULAR JUNCTION DISORDERS**	**02**
8.1	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of Myasthenia Gravis, Eaton-Lambert syndrome	
9.	**CHILDHOOD NEUROLOGICAL DISORDERS**	**04**
9.1	Classification, causes, clinical presentation, investigations, complications, medical and surgical management of Cerebral Palsy, Down's syndrome, Autism, Hydrocephalus, Epilepsy	

Recommended Books:

1. Adams and Victor's Principles of Neurology – Allan H Ropper, Robert H Brown
2. Bickerstaff's Neurological Examination in Clinical Practice – Kameshwar Prasad, John Spillane, Ravi Yadav
3. Brian's Disease of the Nervous System – Michael Donaghy
4. Clinical Neurology – Michael J Aminoff, David A Greenberg, Roger P Simon
5. Color Atlas of Neuroscience: Neuroanatomy and Neurophysiology – Ben Greenstein, Adam Greenstein
6. Harrison's Neurology in Clinical Medicine – Stephen L Hauser
7. Movement Disorders in Clinical Practice – K Ray Chaudhari, Willian G Ondo
8. Neurology and Neurosurgery Illustrated – Kenneth W Lindsay, Ian Bone, Robin Callander
9. A Color Handbook: Pediatric Neurology – James F Bale Jr., Joshua L Bonkowsky, Francis M Filloux, Gary L Hedlund, Denise M Nielsen, Paul D Larsen
10. Textbook of Traumatic Brain Injury – Jonathan M Silver, Thomas W McAllister, Stuart V Yudofsky

Paper IV: SECTION – II: OBSTETRICS & GYNECOLOGY

Subject Code: PT0304B **Theory: 30 Hours**

Method of Assessment: Written

Course Description: This module will focus on the basic principles of etiology, pathophysiology, clinical examination, investigation, diagnosis, management and prognosis of various medical conditions involving the female reproductive system. It will cover normal and abnormal physiological events related to puberty, pregnancy and menopause and clinical examination related to it.

S. No	Description of topics	Hours
1.	**GYNECOLOGICAL CONDITIONS**	**12**
1.1	Physiology of puberty and menstruation, hormonal regulation of menstruation	
1.2	Classification of menstrual abnormalities, clinical presentation, diagnosis and management	
1.3	Classification, causes, clinical presentation, diagnosis and management of Urogenital dysfunctions - Uterine prolapse, Cystocele, Rectocele, Enterocele, Urethrocele	
1.4	Indications, principles, pre and post-surgical management of common gynecological surgeries – Pelvic floor repairs, Hysterectomy, Hysterosalphingography	
1.5	Causes, clinical presentation, diagnosis and management of pelvic inflammatory diseases	
1.6	Physiology, complications and management of pre, peri and post-menopausal symptoms	
2.	**PREGNANCY AND LABOR**	**18**
2.1	Diagnosis of pregnancy, Development of fetus, physiological changes during pregnancy, prenatal complications, diagnosis and management	
2.2	High risk pregnancy, Eclampsia, Diabetes Mellitus, Anaemia – diagnosis and management	
2.3	Stages and events of normal labor	
2.4	Types of Surgical procedures of labor, post-operative care – Assisted Delivery, Episiotomy, Forceps delivery, Caeserian section	
2.5	Complications during labor and its management	
2.6	Postnatal complications and its management, Puerperium and lactation, complications of multiple or repeated child bearing	

2.7	Medical termination of pregnancy – types, complications and management	

Recommended Books:

1. A Guide to Effective care in Pregnancy and Childbirth – Murray Enkin, Marc J N C Keirse, James Neilson, Caroline Crowther, Leila Duley, Ellen Hodnett, Justus Hofmeyr
2. DC Dutta's Textbook of Gynecology – Hiralal Konar
3. DC Dutta's Textbook of Obstetrics – Hiralal Konar
4. Dewhurst's Textbook of Obstetrics and Gynaecology – Keith D Edmonds
5. Howkins & Bourne Shaw's Textbook of Gynaecology – Sunesh Kumar, VG Padubidri, Shirish N Daftary
6. Obstetrics for Undergraduates – Parimala Devi
7. Practical Obstetrics and Gynaecology Handbook for the General Practitioner – Tan Thiam Chye, Tan Kim Teng, Tay Eng Hseon

QUESTION PAPER PATTERN FOR THEORY EXAMINATION

Section – I: 50 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 1 Long Essay Type	(Any Two out of Four)	10x2=20
Q: 2 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 3 Short Answer Type	(Any Five out of Six)	3x5=15
Section – II: 30 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 5 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 6 Short Answer Type	(Any Five out of Six)	3x5=15

Paper V: PHYSICAL AND FUNCTIONAL DIAGNOSIS

Subject Code: PT0305 **Theory: 100 Hours** **Practical: 100 Hrs**

Method of Assessment: Written, Practical and Oral

Course Description: This module will enable the students to understand assessment and evaluation, its significance in diagnosis, both physical and functional. It will be an integration of clinical knowledge to physiotherapy specialty, gained in medical and surgical subjects and thereby students can apply this knowledge to diagnose conditions and plan treatment goals based on the physical and functional diagnoses.

S. No	Description of topics	Hours
1.	**INTRODUCTION**	**3**
1.1	Definition of Assessment and Evaluation, Diagnosis and differential diagnosis	
1.2	Definition of physical diagnosis and functional diagnosis	
2.	**ASSESSMENT FORMATS**	**12**
2.1	SOAP format in general and specific to various specialized areas of disorders – Musculoskeletal, neurological, cardiorespiratory, sports, pediatrics, geriatrics, women's health	
2.2	Functional examination- scale and its interpretation, importance of reliability & validity in different types of scales, Patient Reported Outcome Measures and Performance Based Outcome Measures	
2.3	Functional Diagnosis using ICIDH-2, ICF	
3.	**DIAGNOSTIC AND INVESTIGATIVE PROCEDURES**	**5**
3.1	Principles of use, Interpretation and limitations of common investigative procedures used in diagnosis – Radiograph, CT Scan, MRI, ECG, PFT, ABG, Spirometry, Electrodiagnosis including FG test, SD curve, Nerve Conduction Studies, EMG, H and F Reflex, Diagnostic Biofeedback – in Brief	
4.	**PAIN ASSESSMENT**	**5**
4.1	Definition, characteristics, types of pain including CRPS I & II, and mechanism of pain and pain modulation	
4.2	Subjective and objective methods and tools to evaluate pain	
5.	**MUSCULOSKELETAL ASSESSMENT AND EVALUATION**	**20**
5.1	Postural Assessment - Common methods and tools used and its interpretation	
5.2	Gait Assessment - Components of Gait cycle, observational gait analysis, Temporospatial measures of Gait and its measurements, Self-reported and Performance based measures of Gait Assessment,	

	Instrumented Gait Analysis, different components used and its interpretation, Pathological gait patterns in common Neuromusculoskeletal conditions, its presentation and assessment	
5.3	Motor Examination - Assessment and Evaluation of tone, reflexes (Deep Tendon), Assessment and Evaluation of Joint mobility (ROM) – Passive, Active, Resisted and Isometric, End feel, Assessment and Evaluation of Muscle power and strength, different methods used to assess muscle strength and power, Muscle Length Testing, Limb length measurement, measurement of various angles specific to upper limb, lower limb and spine	
5.4	Special Tests - Commonly used special tests for upper, lower limb and spine, Brief summary of Sensitivity and specificity of special tests	
6.	**NEUROLOGICAL ASSESSMENT AND EVALUATION**	**20**
6.1	Sensory Examination – Dermatomal assessment, Assessment and Evaluation of superficial, deep and cortical sensation specific to common pathological conditions,	
6.2	Assessment and Evaluation of reflexes – superficial, primitive neonatal, cortical	
6.3	Assessment and Evaluation of higher mental function–Level of consciousness, cognitive function including memory and attention, speech and language, cortical functions	
6.4	Assessment and Evaluation of Cerebellar dysfunction including coordination and balance testing	
6.5	Assessment and Evaluation of movement disorders	
6.6	Cranial nerve examination	
6.7	Assessment and Evaluation of peripheral nerve injury and impairment	
6.8	Assessment and Evaluation of autonomic and bladder dysfunctions	
7.	**CARDIOPULMONARY & RESPIRATORY ASSESSMENT AND EVALUATION**	**20**
7.1	Measurement of vitals (Heart rate, blood pressure, respiratory rate)	
7.2	Interpretation of Cough and sputum examination, Arterial Blood Gas Analysis	
7.3	Interpretation of heart sounds, breath sounds and breathing patterns	
7.4	Chest expansion measurements and assessment of symmetry of chest movement	
7.5	Assessment and Evaluation of Dyspnea, Rate of Perceived Exertion	
7.6	Functional capacity Evaluation – Submaximal and maximal exercise testing protocols	
	Pulmonary Function Testing (PFT) and Spirometry	

8.	SPORTS AND FITNESS ASSESSMENT AND EVALUATION	15
8.1	Brief introduction - On field and laboratory assessment and evaluation and preparticipation evaluation	
8.2	Anthropometric measures in assessment of fitness including body composition	
8.3	Assessment and Evaluation of Aerobic capacity, Anaerobic capacity, Flexibility, muscle strength and power in Sports and Fitness	
8.4	Brief introduction to performance testing in sports	

Recommended Books:

1. Assessment in Physical Medicine and Rehabilitation: Views and perspectives – Michel Barat, Franco Franchignoni
2. Clinical Tests for the Musculoskeletal System Examinations: Signs, Phenomena – Klaus Buckup
3. Orthopedic Physical Assessment Atlas and Video: Selected Special Tests and Movements – David J Maggie, Derrick Sueki
4. Diagnosis for Physical Therapists: A Symptom-Based Approach – Todd E Davenport, Kornelia Kulig, Chris Sebelski, James Gordon, Hugh G Watts
5. Differential Diagnosis for Physical Therapists: Screening for Referral – Catherine Cavallaro Goodman, Teresa E. Kelly Snyder
6. Dutton's Orthopaedic Examination, Evaluation and Intervention – Mark Dutton
7. Evaluation of Joint Motion: Methods of Measurement and Recording – Dortha Esch, Marvin Lepley
8. Goniometry and Manual Muscle Testing: A Handbook for Students and Clinicians – Lynn Van
9. Handbook of Pain Assessment – Dennis C Turk, Ronald Melzack
10. Principles and Practice of Physical Rehabilitation – Neeta J Vyas, Megha S Sheth, Srishti S Sharma, Priyasingh B Rangey
11. Writing Patient/Client Notes: Ensuring Accuracy in Documentation – Ginge Kettenb
12. Rehabilitation and Health Assessment: Applying ICF Guidelines – Elias Mpofu, Thomas Oakland
13. Pulmonary Function Testing and Cardiopulmonary Stress Testing – Vincent C Madama
14. Joint Range of Motion and Muscle Length Testing – Nancy Berryman Reese, William D. Bandy
15. Lukan's Documentation for Physical Therapist Assistants – Wendy D. Bircher
16. Daniels and Worthingham's Muscle Testing: Techniques of Manual Examination – Helen J Hislop, Jacqueline Montgomery
17. Measurement of Joint Motion A Guide to Goniometry – Cynthia C. Norkin, D. Joyce White

18. Neuromusculoskeletal Examination and Assessment: A Handbook for Therapists – Nicola J. Petty
19. Therapy Outcome Measures for Rehabilitation Professionals – Pamela Enderby, Alexandra John, Brian Petheram
20. Interpretation of Pulmonary Function Tests: A Practical Guide – Robert E. Hyatt, Paul D. Scanlon, Masao Nakamura
21. Wilkins' Clinical Assessment in Respiratory Care – Albert J. Heuer, Craig L. Scanlan
22. Rapid ECG Interpretation – Gabriel Khan
23. Manual of Nerve Conduction Studies – Ralph M. Buschbacher, Nathan D. Prahlow
24. Electromyography in Clinical Practice – Bashar Katirji
25. 101 Performance Evaluation Tests – Brian Mackenzie
26. Assessments for Sport and Athletic Performance – David H. Fukuda
27. Performance Assessment for Field sports – Christopher Carling, Thomas Reilly, A. Mark Williams

QUESTION PAPER PATTERN FOR THEORY EXAMINATION

Section – I: 40 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 1 Long Essay Type	(Any One out of Two)	10x1=10
Q: 2 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 3 Short Answer Type	(Any Five out of Six)	3x5=15
Section – II: 40 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 4 Long Essay Type	(Any One out of Two)	10x1=10
Q: 5 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 6 Short Answer Type	(Any Five out of Six)	3x5=15

PRACTICAL **(100 Hours)**

Practical skillful application of appropriate assessment, evaluation and diagnostic procedures on patients:

1. Demonstration and practice of different subjective and objective pain assessment, evaluation and interpretation of test results
2. Demonstration and practice of Observational postural assessment and measurement of various postural angles and its interpretation
3. Demonstration and practice of Observational gait analysis and measurement of temporal and spatial variables and its interpretation
4. Demonstration and practice of Examination of superficial, deep and cortical sensation and its interpretation
5. Demonstration and practice of assessment of tone, joint mobility including range of motion and flexibility and its interpretation
6. Demonstration and practice of assessment of muscle strength, power and endurance and its interpretation
7. Demonstration and practice of limb length measurement and its interpretation
8. Demonstration and practice of commonly used special tests as a diagnostic tool and its interpretation
9. Demonstration and practice of reflex testing and its interpretation
10. Demonstration and practice of assessment of higher mental function and its interpretation
11. Demonstration and practice of assessment of cerebellar dysfunction and its interpretation
12. Demonstration and practice of cranial nerve examination and its interpretation
13. Demonstration of basics of interpretation of Electrodiagnosis including Faradic Galvanic Testing, Nerve Conduction Velocity and EMG
14. Demonstration and practice of vital signs examination and its interpretation
15. Demonstration and practice of chest expansion measurement and its interpretation
16. Demonstration and practice of Rate of Perceived Exertion and its interpretation
17. Demonstration of submaximal exercise testing and its interpretation
18. Demonstration of Pulmonary Function Testing and spirometry and its interpretation
19. Demonstration of commonly used aerobic and anaerobic tests and their interpretation
20. Demonstration and practice of assessment of fitness parameters and their interpretation

PRACTICAL EXAM FORMAT **(80 marks)**

Type	**Description**	**Marks (40)**
Long Case*	Detailed subjective examination	5
	Relevant Physical Examination	10
	Differential Diagnosis based on history and Physical Examination	5
	Evaluation (including interpretation of results of examination)	10
	Diagnosis – Clinical, Physical and Functional	10

*Long Case: Students should perform a detailed assessment and evaluation of patient with any neuro, musculoskeletal, cardiorespiratory, sports conditions and identify the clinical and Physiotherapy diagnosis based on their evaluation.

Type	**Description**	**Marks (20)**
Short Case*	Relevant Physical Examination	8
	Evaluation (including interpretation of results of examination)	7
	Diagnosis – Possible physical and functional limitations of patient based on the signs elicited	5

* Short Case: Students should perform the technique of examination of a specific symptom (for example: pain assessment, tone assessment, motor or sensory assessment) on any neuro, musculoskeletal, cardiorespiratory, sports conditions and identify the possible functional limitation based on the signs elicited.

Viva on the basic principles of assessment, evaluation and diagnosis aspects of neuro, musculoskeletal, cardiorespiratory and sports conditions. **(20 marks)**

Paper VI: SECTION – I: RESEARCH METHODOLOGY

Subject Code: PT0306A **Theory: 40 Hours**

Method of Assessment: Written

Course Description: This module will explain the basic concepts of research, importance of conducting research in Physiotherapy and will enable students to learn the basic methods to conduct research in a clinical set up. It will simplify the steps of conducting research from the beginning by formulating a research question and explain the different methods used to take forward the research, sample selection, data collection and will lead to statistical analysis which is part of Biostatistics. It will also provide the basics of reporting the results and writing a scientific research paper.

S. No	Description of topics	Hours
1.	**INTRODUCTION**	**06**
1.1	Understanding Research: Basic concepts of research, its application in various fields and its importance in Physiotherapy. Types of research, Research method versus Research methodology, Characteristics of good research, Problems encountered by researchers in India	
1.2	Steps in research process, Concepts and components of research proposal	
PART – I: THE RESEARCH PROCESS – PLANNING STAGE		
2.	**RESEARCH QUESTION**	**03**
2.1	Research Question, its components, methods to frame a research question	
2.2	Research Variables: Dependent and Independent, Levels of measurement (Outcome variables), measurement errors, scaling techniques. Hypothesis: Null and Alternative, One and Two tailed Hypothesis. Formulating a Hypothesis	
3.	**REVIEW OF LITERATURE**	**05**
3.1	Significance of literature review, methods of review and tools used for literature search – search engines and databases	
3.2	Critical appraisal of searched literature	
4.	**STUDY DESIGNS**	**10**
4.1	Classification of study designs: characteristics, pros and cons of different types of study designs.	
5.	**TESTING THE HYPOTHESIS**	**03**
5.1	Understanding hypothesis testing, Errors encountered in testing the hypothesis	
5.2	Basics of choosing the right statistical tests	

PART – II: THE RESEARCH PROCESS – EXECUTION STAGE		
6.	**DATA COLLECTION PROCEDURE**	**03**
6.1	Reliability and Validity: Definition, importance of reliability and validity during data collection.	
6.2	Types of data and methods used for data collection, pros and cons of various data collection methods	
7.	**ORGANIZING AND PROCESSING DATA**	**02**
7.1	Methods of organizing and processing data, its significance	
8.	**REPORTING RESEARCH SCIENTIFICALLY**	**04**
8.1	Basic understanding of reporting research findings, steps to follow while submitting research findings	
9.	**RESEARCH ETHICS**	**04**
9.1	Ethics: Definition, importance in research and different types of scientific misconduct in research.	
9.2	Plagiarism: Definition, types and ways to prevent it.	
9.3	Getting Research Into Practice (GRIP), Introduction to basics of Evidence Based Practice	

Recommended Books:

1. Research Methods for Clinical Therapists: Applied Project Design and Analysis – Carolyn M Hicks
2. Rehabilitation Research: Principles and Applications – Russell Carter, Jay Lubinsky, Elizabeth Domholdt
3. Research Methodology: Methods and Techniques – C R Kothari
4. Essentials of Research Methodology for All Physiotherapy and Allied Health Sciences Students – A Thangamani Ramalingam, S N Senthilkumar

Paper VI: SECTION – II: BIOSTATISTICS

Subject Code: PT0306B **Theory: 40 Hours**

Method of Assessment: Written

Course Description: Biostatistics as a subject covers the basic concepts of statistics in human research, methods of data collection procedures commonly used in research, representation of data in analytical formats, its analysis and interpretation. After completion of this module, students will be able to identify the appropriate statistical methods and tests to use in their research. This will also enable them to use appropriate statistical applications to analyze their data and reason out the interpretation of their research results in publication.

S. No	Description of topics	Hours
1.	**INTRODUCTION**	**02**
1.1	Definition – Statistics and Biostatistics	
1.2	Basic application of statistics in health care research	
1.3	Descriptive versus Inferential statistics	
2.	**VARIABLES AND DATA**	**05**
2.1	Types of Variables, scales of measurement	
2.2	Data, types – Qualitative and Quantitative, data collection methods (in brief)	
2.3	Representing data – Types of data presentation, Basic principles of graphical and tabular presentation	
3.	**PROBABILITY**	**03**
3.1	Meaning of probability, probability of an event, binomial distribution	
3.2	Normal distribution and characteristics of a normal curve	
3.3	Divergence from normality – Skewness and Kurtosis	
4.	**MEASURES OF CENTRAL TENDENCY**	**04**
4.1	Definition and calculation of Mean, median and mode – Grouped and Ungrouped	
4.2	Comparison of Mean, Median and Mode	
4.3	Reasoning behind the use of mean, median and mode	
4.4	Partition values – Quartiles, Deciles and Percentiles	
5.	**MEASURES OF DISPERSION**	**03**
5.1	Range, Mean deviation and standard deviation and their significance in statistics	

6.	**SAMPLING PROCEDURE**	**03**
6.1	Population and Sample, sample size calculation and its significance, sampling frame, types of sampling – random and non-random and its sub types.	
7.	**HYPOTHESIS TESTING**	**04**
7.1	Types of hypothesis – Null and Alternative, One tailed and Two tailed. Level and tests of significance, degrees of freedom, acceptance and rejection of null hypothesis.	
7.2	Type I and Type II errors	
8.	**CORRELATION AND REGRESSION**	**04**
8.1	Bivariate distribution, coefficient of correlation, calculation and interpretation of correlation coefficient, graphical representation of correlation statistics	
8.2	Lines of regression, types of regression coefficient, calculation and interpretation of regression coefficient	
9.	**PARAMETRIC AND NON-PARAMETRIC TESTS**	**09**
9.1	Difference between parametric and non-parametric tests	
9.2	Reasoning behind choosing a parametric or non-parametric test	
9.3	Tests for normality, Paired and Unpaired t-test, Z test, ANOVA, ANCOVA, MANOVA, Repeated Measures ANOVA	
9.4	Chi Squared test, Wilcoxon test, Mann Whitney test, Kruskal-Wallis test, Friedmann test	
10.	**STATISTICAL SOFTWARES**	**03**
10.1	Brief introduction to software used for statistical analysis	

Recommended Books:

1. Methods in Bio-Statistics – B.K. Mahajan
2. An introduction of Biostatistics – Sunder Rao. P.S.S
3. Basic Biostatistics: Statistics for Public Health Practice – B. Burt Gerstman
4. Essential Medical Statistics – Betty R Kirkwood, Jonathan A. C. Sterne

QUESTION PAPER PATTERN FOR THEORY EXAMINATION

Section – I: 40 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 1 Long Essay Type	(Any One out of Two)	10x1=10
Q: 2 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 3 Short Answer Type	(Any Five out of Six)	3x5=15
Section – II:40 Marks		
Type of question	**Number of Questions**	**Marks for Each Question**
Q: 4 Long Essay Type	(Any One out of Two)	10x1=10
Q: 5 Short Essay Type	(Any Three out of Four)	5x3=15
Q: 6 Short Answer Type	(Any Five out of Six)	3x5=15

NON-EXAM PAPERS

A. BASICS IN RADIOLOGY & DIAGNOSTIC PROCEDURES

Course Description: This course is designed to help the student acquire the basic knowledge on understanding the indications for radiology in musculoskeletal and cardiothoracic conditions, its interpretation along with other diagnostic procedures commonly used in Physiotherapeutic and medical diagnosis.

S. No	Description of topics	Hours
1.	Basic principles of imaging techniques – X-ray, CT scan, MRI, US imaging	**6**
2.	Common Indications for imaging techniques in musculoskeletal and cardiothoracic conditions	**3**
3.	Precautions and dangers of exposure	**3**
4.	Interpretation of diagnostic findings of X-ray, CT scan, MRI, US imaging	**8**

B. PSYCHIATRY

Course Description: At the completion of this course, students must be able to identify the basic principles of Psychiatry and common human behavior. This module will also enable students to understand behavioral changes in relation to pathological conditions and methods to identify and manage them.

S. No	Description of topics	Hours
1.	Difference between normal and abnormal human behavior	**2**
2.	Classification of Psychiatric disorders	**3**
3.	Psychoneurotic, Psychosomatic and personality disorders – Basic introduction, differences, clinical presentation and management	**4**
4.	Drug and Alcohol abuse and dependence	**3**
5.	Psychiatric disorders of childhood and adolescence	**3**
6.	Commonly used Psychiatric tests	**2**
7.	Psychiatric counselling and therapies – Basic principles	**3**