Bachelor of Physiotherapy

Program Code	Exam Code	Course Name	Subject Name	Sub/Course Code
16	1601	Ist B.P.Th.	Human Anatomy	160101
			Human Physiology	160102
			Biochemistry	160103
			Fundamentals of Kinesiology & Kinesiotherapy	160104
			Fundamentals of Electrotherapy	160105
	1602	IInd B.P.Th.	Pathology & Microbiology	160201
			Pharmacology	160202
			Psychiatry & Psychology	160203
			Kinesiology	160204
			Kinesiotherapy	160205
			Electrotherapy	160206
	1603	IIIrd B.P.Th.	Surgery I	160301
			Surgery II	160302
			Medicine I	160303
			Medicine II	160304
			Community Health & Sociology	160305
			Functional Diagnosis and Physiotherapeutic Skills	160306
	1604	IVth B.P.Th.	Musculoskeletal Physiotherapy	160401
			Neuro Physiotherapy	460402
			Cardio-Vascular & Respiratory Physiotherapy	160403
			Community Physiotherapy	160404

II B.P.Th.

SYLLABUS

Transcript Hours- 1400

Sr. No.	Subject	Theory Hours	Practical / Clinical Hours	Total Hours
	PROFESSIONAL PRACTICE			
1	Professional practice & Ethics *(College Examination in final year)*	005	010	015
	MEDICAL SCIENCES			
1	Pathology	050	-	050
2	Microbiology	031	004	035
3	Pharmacology	050	-	050
4	Psychiatry (Including Psychology)	030	020	050
	PHYSIOTHERAPY			
1	Kinesiology	080	-	080
2	Kinesiotherapy	080	160	240
3	Electrotherapy	100	200	300
4	Seminar (including introduction to **terms** of I.C.F. definition of terms Activity Limitation and Participation Restriction) (***not for examination***)		090	090
5	Supervised clinical practice (To practice clinical skills under the supervision, at the O.P.D./ I.P.D. set up) ➢ Clinical assignments should include Observation, Clinical History taking & technical assistance tothe clinicians • TherapeuticGymnasium • Fundamentals of Exercise therapy& • ElectroTherapy To maintain a Register / Log book-in which the prescribed Case Histories & written assignments are documented & to obtain the signature from the respective section In-charge at the end of the assignment.		490	490

PROFESSIONAL PRACTICE AND ETHICS
(COLLEGE EXAMINATION IN FINAL YEAR)

Total -15 HRS

COURSE DESCRIPTION:

This subject would be taught in continuum from first year to final year. An exam in theory would be conducted only in final year. Professional and ethical practice curriculum content addresses the Knowledge, Skills and Behaviors required of the physiotherapist in a range of practice relationships and roles. The course will discuss the role, responsibility, ethics administration issues and accountability of the physical therapists. The course will also cover the history and change in the profession, responsibilities of the professional to the profession, the public and to the health care team. This includes the application of professional and ethical reasoning and decision-making strategies, professional communication.

OBJECTIVES:

At the end of the course the candidate will be compliant in following domains:

Cognitive:

a. Be able to understand the moral values and meaning ofethics
b. Will acquire bedside manners and communication skills in relation with patients, peers, seniors and otherprofessionals.

Psychomotor:

a. Be able to develop psychomotor skills for physiotherapist-patientrelationship.
b. Skill to evaluate and make decision for plan of management based on sociocultutural values and referral practice.

Affective:

a) Be able to develop behavioral skills and humanitarian approach while communicating with patients, relatives, society at large andco-professionals.
b) Be able to develop bed side behavior, respect & maintain patients'confidentiality.

SYLLABUS

Sr. No.	Topics	Didactic Hours	Supervision Hours	Total Hours
1.	Ethical code of conduct	03		
2.	Communication skills			
	a. Physiotherapist -PatientRelationship b. Interviewing -Types of interview, Skills ofinterviewing	01 01	10	15
	TOTAL	**05**	**10**	**15**

PATHOLOGY

[DIDACTIC –50 HRS]

COURSE DESCRIPTION:

Students will develop an understanding of pathology underlying clinical disease states involving the major organ systems and epidemiological issues. Students will learn to recognize pathology signs and symptoms considered red flags for serious disease. Students will use problem-solving skills and information about pathology to decide when referrals to another health care provider or alternative interventions are indicated. Students will develop the ability to disseminate pertinent information and findings, and ascertain the appropriate steps to follow.

The course more deals with structural impairments as an important part in ICF Classification.

Sr. No.	Topics	Didactic Hours
1	**GENERAL PATHOLOGY**	04
2	**INFLAMMATION & REPAIR**	06
3	**IMMUNO –PATHOLOGY**	04
4	**CIRCULATORY DISTURBANCES**	04
5	**PATHOLOGIC CHANGES IN VITAMIN DEFICIENCIES**	01
6	**GROWTH DISTURBANCES**	04
7	**MEDICAL GENETICS**	01
8	**SPECIFIC PATHOLOGY**	10
9	**MUSCULAR DISORDERS**	03
10	**NEURO-MUSCULAR JUNCTION**	01
11	**BONE & JOINTS**	05
12	**G.I. SYSTEM**	01
13	**ENDOCRINE**	02
14	**HEPATIC DISEASES**	01
15	**CLINICAL PATHOLOGY**	03
	TOTAL	**50**

OBJECTIVES:

At the end of the course, the candidate:

Cognitive:

a. Will have sound knowledge of concepts of cell injury & changes produced bydifferent tissues, organs and capacity of the body in healingprocess.

b. Acquire the knowledge of general concepts of neoplasia with reference to the Etiology, gross & microscopic features, & diagnosis, in different tissues, & organs of thebody.

c. Acquire knowledge of common immunological disorders & their resultant effects onthe human body.

Psychomotor:

a. Recall the Etiology–pathogenesis, the pathological effects & the clinico–pathological correlation of common infections & non-infectiousdiseases.

b. Understand in brief, about the common Haematological disorders &investigations necessary to diagnosethem.

c. Correlate normal & altered morphology of different organ systems in different diseases needed for understanding disease process & their clinicalsignificance

SYLLABUS

Sr. No.	Topics	Didactic Hours
1	**GENERAL PATHOLOGY**	**4**
	a. Cell injury-Causes, Mechanism &Toxic injuries with special reference to Physical including ionizing radiation, Chemical &Biological b. Reversible injury (degeneration)- types-morphology-cloudy swelling, hyaline, fatty changes c. Intra-cellular Accumulation- Mucin, Protein d. Irreversible cell injury-types of necrosis-Apoptosis –Calcification- Dystrophic &Metastasis e. Extra-cellularaccumulation-Amylidosis	
2	**INFLAMMATION & REPAIR**	**6**
	a. Acute inflammation – features, causes, vascular &cellularevents b. Morphologicvariations-Ulcers c. Inflammatory cells &Mediators d. Chronic inflammation: Causes, Types, Non-specific & Granulomatous – withexamples e. Wound healing by primary & secondary union, factors promoting & delaying healingprocess f. Healing at various sites- bone, nerve &muscle g. Regeneration &Repair	
3	**IMMUNO –PATHOLOGY**	**4**
	a. Immune system: organization-cells-antibodies-regulation of immuneresponses b. Hyper-sensitivity (types and examples including graftrejection) c. Secondary Immuno-deficiency includingH.I.V. d. Basic concepts of autoimmune disease(emphasis on S.L.E. &R.A.)	
4	**CIRCULATORY DISTURBANCES**	**4**
	a. Oedema - pathogenesis - types - transudates/ exudates b. Chronic venous congestion- lung,liver c. Thrombosis – formation – fate –effects d. Embolism – types- clinicaleffects e. Infarction – types – commonsites f. Gangrene – types –etiopathogenesis g. Shock – Pathogenesis,types	

5	**PATHOLOGIC CHANGES IN VITAMIN DEFICIENCIES**	**1**
6	**GROWTH DISTURBANCES**	**4**
	a. Atrophy, Hypertrophy, Hypoplasia, Metaplasia, Agenesis, Dysplasia b. Neoplasia classification, Histogenesis, Biologic behaviors, difference between Benign &Malignant tumour c. Malignant neoplasms- grades-stages-local & distal spread d. Carcinogenesis: Physical, Chemical,Occupational, Heredity, Viral, Nutritional e. Precancerous lesions & Carcinoma insitu f. Tumour & host interactions–local and systemic effects-metastatic (special reference to bonesand C.N.S.)	
7	**MEDICAL GENETICS (in brief):** a. Classifications with examples of Genetic disorders	**1**
8	**SPECIFIC PATHOLOGY**	**10**
	a. **C.V.S.** i. Atherosclerosis - Ischemic Heart Diseases– Myocardial Infarction– Pathogenesis /Pathology ii. Hypertension iii. C.C.F. iv. Rheumatic HeartDiseases v. Peripheral VascularDiseases b. **Respiratory** i. C.O.P.D. ii. Pneumonia (lobar, bronchial, viral), LungAbscess iii. T. B.: Primary, Secondary – morphologictypes iv. Pleuritis & itscomplications v. Lung collapse –Atelectasis vi. Occupational Lungdiseases (with special emphasis on Silicosis, Asbestosis, Anthracosis) vii. A.R.D.S.	

	c. Neuropathology: i. Reaction of nervous tissue to injury, infection & ischemia ii. Meningitis: Pyogenic, T.B.M.,Viral iii. Cerebro-VascularDiseases–Atherosclerosis– Thrombosis, Embolism, Aneurysm,Hypoxia,	
	Infarction & Hemorrhage, Hydrocephalous, Increased Intracranial Pressure iv. Leprosy **v.** Parkinsonism	
9	**MUSCULAR DISORDERS** a. Classification of Muscular disorders with emphasis on Muscular Dystrophies	3
10	**NEURO-MUSCULAR JUNCTION**	1
	a. Myastheniagravis b. Myasthenicsyndrome	
11	**BONE & JOINTS**	5
	a. Osteomyelitis – Rickets – Osteomalacia– Osteoporosis b. Arthritis- degenerative (Osteoarthritis,Calcaneal spur, Periarthritis,Spondylosis) - inflammatory (R.A., Ankylosing Spondylitis, Gout) c. Miscellaneous-P.I.D.,Haemarthosis d. Infective-T.B.	
12	**G.I. SYSTEM**	1
	a. Gastric / Duodenal ulcer, Enteric fever, T.B., Enteritis, Gastritis (related to consumption of NSAID)	
13	**ENDOCRINE**	2
	a. Hypo andHyperthyroidism b. Diabetes	
14	**HEPATIC DISEASES** a. Cirrhosis – emphasis to systemic effects of portal hypertension	1
15	**CLINICAL PATHOLOGY**	3
	a. Anemia – (deficiency) – T.C./D.C./Eosinophilia Anaemia b. Muscle / Skin / Nervebiopsy **c.** Microscopic appearance of muscle necrosis – fatty infiltration	

RECOMMENDED TEXT BOOKS

1. Text book of Pathology -HarshMohan
2. BasicPathology-Robbins

RECOMMENDED REFERENCEBOOKS

1. Pathologic basis of disease - Cotran, Kumar,Robbins
2. General Pathology –Bhende

SCHEME OF UNIVERSITY EXAMINATION

- ALONG WITH MICROBIOLOGY SUBJECT

MICROBIOLOGY

(Didactic-31hrs + Demonstration - 4hrs) **TOTAL 35 HRS**

COURSE DESCRIPTION:

Students will develop an understanding of pathology underlying clinical disease states and involving the major organ systems and epidemiological issues. Epidemiological issues will be presented and discussed. Students will learn to recognize pathology signs and symptoms considered red flags for serious disease. Students will use problem-solving skills and information about pathology to decide when referral to another health care provider or alternative intervention is indicated. Students will develop the ability to disseminate pertinent information and findings, and ascertain the appropriate steps to follow.

Sr. No.	Topics	Didactic Hours	Demonstration Hours	Total Hours
1	**GENERAL MICROBIOLOGY**	4	1	**5**
2	**LABORATORY DIAGNOSIS OF INFECTION**	2	1	**3**
3	**IMMUNOLOGY**	5		**5**
4	**SYSTEMIC BACTERIOLOGY**	7		**7**
5	**MYCOLOGY**	2	1	**3**
6	**VIROLOGY**	5		**5**
7	**PARASITOLOGY**	3	1	**4**
8	**APPLIED MICROBIOLOGY**	3		**3**
	TOTAL	**31**	**4**	**35**

OBJECTIVES:

At the end of the course, the candidate will

1. Have sound knowledge of prevalent communicable diseases and the agents responsible for causing clinical infections, pertaining to C.N.S, C.V.S, Musculoskeletal system, Respiratory system,Genitourinarysystem,woundinfectionsandofneweremergingpathogens
2. Know the importance and practices of best methods to prevent the development of infections in self and patients (universal safety precautions)

SYLLABUS

Sr. No.	Topics	Didactic Hours	Practical/Lab Hours	Total Hours
1	**General Microbiology**	**4**	**1**	**5**
	a. Introduction &scope b. Classification of Micro-organisms and Bacterial Anatomy (cell wall, capsule, spore, flagella and types as per their shape andarrangement) c. Sterilization d. Disinfection e. Demonstration for General Microbiology			
2	**LABORATORY DIAGNOSIS OF INFECTION**	**2**	**1**	**3**
	a. Culture media and identification of bacteria b. Sample collection for smear examination andcultures c. Demonstration of Gram staining, ZN staining and culturemedia			
3	**IMMUNOLOGY**	**5**		**5**
	a. Innate immunity & acquiredimmunity b. Structure and function ofimmune system and Immune response – normal /abnormal c. DefineAntigen,AntibodyandAntigen - antibody reaction & application for diagnosis d. Hyper –sensitivity e. Auto-immunity			
4	**SYSTEMIC BACTERIOLOGY**	**7**		**7**

	a. Infection caused by gram +ve cocci Staphylococcus, Streptococcus and Pneumococcus b. Infection caused by gram –ve cocci Gonococci and Meningococci c. Clostridium d. Enterobacteriaceae(E.Coli, Klebsiella) and Pseudomonas e. Salmonella andVibrio f. Mycobacterialinfection: i. Tuberculosis-Leprosy ii. AtypicalMycobacterium **g.** Syphilis and Leptospirosis- Morphology &pathogenesis			
5	**MYCOLOGY**	**2**	**1**	**3**
	a. Introduction and Superficialmycosis b. Mycetoma and opportunistic fungal infection c. Mycology and Virologydemonstration			
6	**VIROLOGY**	**5**		**5**
	a. Introduction & generalproperties, b. DNAvirus c. Measles, Mumps, Rubella, polio and congenital viralinfections d. Hepatitis andRabies e. H.I.V.			
7	**PARASITOLOGY**	**3**	**1**	**4**
	a. Introduction- Entamoebahistolytica b. Malaria,Filaria c. Toxoplasma – Cystisarcosis&Echinococcus			
8	**APPLIED MICROBIOLOGY**	**3**		**3**
	a. Hospital acquired infections, Universal safety precautions and Waste disposal b. Diseases involving Bones, Joints- Nerves-Muscles-Skin-Brain-Cardiopulmonary system, Burn and woundinfections			

RECOMMENDED TEXT BOOKS

1. Concise Textbook of Microbiology -Ananthnarayan
2. Concise Textbook of Microbiology -C.P.Baweja
3. TextbookofMicrobiology -Nagoba

RECOMMENDED REFERENCE BOOK

1. Text books of Microbiology – R. Ananthnarayan & C.K. Jayram Panikar

SCHEME OF UNIVERSITY EXAMINATION (THEORY ONLY)

THEORY Pathology-50 marks + Microbiology-30 marks 80 marks + I.A.:20 marks [There shall be no LAQ in this paper] *Emphasis to be given to topics related to Musculo Skeletal / Neurological / Cardiovascular / Respiratory conditions & Wound / Ulcers.		**Marks** **100**
Section A-Q-1 &Q-2	MCQs – based on **MUST KNOW** area Q-1 based on**PATHOLOGY** [1 x 12] Q-2 Basedon**MICROBIOLOGY** [1 x08]	**20**
Section B-Q-3 &	Questions based on **PATHOLOGY** Q-3 -to answer any SEVEN outofEIGHT [7x5]	**35**
Section C- Q-4	Questions based on **MICROBIOLOGY** SAQ – to answer any FIVE outofSIX [5x5]	**25**
Total Marks		**80**

INTERNAL ASSESSMENT:

1. **Two exams – Terminal and preliminary examination of 80 marks each TOTAL - 160marks**
2. **Internal Assessment to be calculated out of 20marks**
3. **Internal assessment as per University pattern**

PHARMACOLOGY

[DIDACTIC – 50 hrs]

COURSE DESCRIPTION:

This course covers the basic knowledge of Pharmacology including administration, physiologic response and adverse effects of drugs under normal and pathologic conditions. Topics focus on the influence of drugs in rehabilitation patient/client management. Drugs used in iontophoresis and phonoporesis will be discussed in detail.

Sr. No.	Topics	Didactic Hours
1	**GENERAL PHARMACOLOGY**	04
2	**DRUGS ACTING ON C.N.S**	11
3	**DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM**	07
4	**DRUGS ACTING ON C.V.S.**	07
5	**DRUGS ACTING ON RESPIRATORY SYSTEM**	03
6	**CHEMOTHERAPY**	03
7	**OTHER CHEMO THERAPEUTIC DRUGS**	03
8	**ENDOCRINE**	08
9	**DRUGS IN G.I. TRACT**	02
10	**HEAMATINICS**	01
11	**DERMATOLOGICAL DRUGS**	01
TOTAL		**50**

OBJECTIVES:

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

Cognitive:

a. Describe Pharmacological effects of commonly used drugs by patients referred for Physiotherapy; list their adverse reactions, precautions, contraindications, formulation & route ofadministration.
b. Identify whether the pharmacological effect of the drug interferes with the Therapeutic response of Physiotherapy & viceversa
c. Indicate the use of analgesics & anti-inflammatory agents with movement disorders with consideration of cost, efficiency, & safety for individualneeds.

Psychomotor:

Get the awareness of other essential & commonly used drugs by patients- The bases for their use & common as well as serious adverse reactions.

SYLLABUS

Sr. No.	Topics	Didactic Hrs
1	**GENERAL PHARMACOLOGY**	**4**
	i. Pharmacokinetics ii. Routes ofadministration iii. Adverse drug reaction andreporting iv. Factors modifying drugeffect	
2	**DRUGS ACTING ON C.N.S.**	**11**
	i. Introduction ii. Alcohols + Sedatives &Hypnotics iii. Anti-convulsants iv. Drug therapy inParkinsonism v. Analgesics & antipyretics –especially Gout &R.A. vi. PsychoTherapeutics vii. Local anaesthetics, counterirritants	1 2 1 2 3 1 1
3	**DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM**	**7**
	i. Adrenergic ii. Cholinergic iii. Skeletal musclerelaxants	
4	**DRUGS ACTING ON C.V.S.**	**7**
	i. Antihypertensives ii. Antianginal- Antiplatelets, MyocardialInfarction iii. C.C.F. iv. Shock v. Coagulants andAnticoagulants	2 2 1 1 1
5	**DRUGS ACTING ON RESPIRATORY SYSTEM**	**3**
	i. Cough ii. Bronchialasthma iii. C.O.P.D.	
6	**CHEMOTHERAPY**	**3**
	i. Generalprinciples ii. AntiTuberculosis iii. Anti–Leprosy	
7	**OTHER CHEMO THERAPEUTIC DRUGS**	**3**
	i. Drugs used in Urinary TractInfection ii. Tetra /chlora iii. Penicillin iv. Cephalosporin v. Aminoglycocides vi. Macrolides	
8	**ENDOCRINE**	**8**

	i. Insulin and oral Anti diabeticdrugs ii. Steroids-Anabolicsteroids iii. Drugs for osteoporosis, Vitamin D,Calcium, Phosphorus iv. Thyroid &Antithyroid v. Estrogen + Progesterone	2 2 2 1 1
9	**DRUGS IN G.I. TRACT** i. Pepticulcer ii. Diarrhoea, Constipation &Antiemetics	**2**
10	**HEAMATINICS** i. Vitamin B, Iron	**1**
11	**DERMATOLOGICAL DRUGS** i. Scabies, Psoriasis, Localantifungal	**1**

RECOMMENDED TEXT BOOKS

1. Pharmacology for Physiotherapy –PadmajaUdaykumar
2. Pharmacology for Physiotherapist –H. L. Sharma, K. K.Sharma
3. Essentials of Medical Pharmacology – K. D.Tripathi
4. Pharmacology and Pharmacotherapeutics – Dr. R S Satoskar, Dr. Nirmala N.Rege, Dr. S. D. Bhandarkar

SCHEME OF UNIVERSITY EXAMINATION (THEORY ONLY)

THEORY 40 marks + **I.A.** 10 Marks [There shall be no LAQ in this paper] * Emphasis should be given to the drugs related to Musculo-skeletal / Neurological, Cardio-Vascular (excluding anti arrhythmic and shock) / Respiratory conditions, analgesics & anti-inflammatory conditions		Marks **50**
Section A	Q1. MCQs – based on **MUST KNOW** area [1x10]	**10**
Section-B-	Q-2 .SAQ answer any SIX out of SEVEN [6x5]	**30**
Total Marks		**40**

INTERNAL ASSESSMENT

1. **Two exams – Terminal and preliminary examination of 40 markseach TOTAL - 80marks**
2. **Internal Assessment to be calculated out of 10marks.**
3. **Internal assessment as per University pattern.**

PSYCHIATRY (INCLUDING PSYCHOLOGY)

[Didactic 30hrs + Clinical 20hrs**]- TOTAL 50HRS**

COURSE DESCRIPTION:

The course design increases awareness of psychosocial issues faced by individuals. The ir significance at various points on the continuum of health and disability should be emphasised. The course discusses personal and professional attitudes and values as they relate to developing therapeutic relationships. It emphasizes on communication skills for effective interaction with patients, health-care professionals and others. It expects students to identify common psychiatric conditions.

Sr. No.	Topics	Didactic Hours	Clinical Hours	Total Hours
1	**PSYCHOLOGY**	10	--	**10**
2	**PSYCHIATRY**	20	20	**40**
	TOTAL	30	20	**50**

OBJECTIVES:

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

Cognitive:

a. Define the term Psychology & its importance in the Health delivery system, & will gain knowledge of Psychological maturation during human development & growth &alterations during agingprocess.
b. Understand the importance of psychological status of the person in health & disease; environmental & emotional influence on the mind &personality.
c. Have the knowledge and skills required for good inter personal communication.

Psychomotor:

a. Enumerate various Psychiatric disorders with special emphasis to movement / Pain & ADLs
b. Acquire the knowledge in brief, about the pathological & etiological factors, signs/ symptoms & management of various Psychiatric conditions.
c. Understand the patient more empathetically.

SYLLABUS

Sr. No.	Topics	Didactic Hours
1.	**PSYCHOLOGY**	**10**
	a. Psychology:Definition,understanding,Nature&its fields andsubfields	1
	b. Developmental psychology (childhood,adolescence, adulthood and old age) and its theories in brief	2
	c. Learning: Theories of learning, Role of learning in human life	2
	d. Memory – types – Forgetting causes	2
	e. Attention & perception Nature of attention [in brief] Nature of perception, Principles of grouping]	1
	f. Motivationandtheories:conflictandfrustration–Types of Common Defence mechanisms, Stress -common reactions to frustrations	2
2.	**PSYCHIATRY**	**20**
	a. Psychiatric History & Mental Status Examination	1
	b. Classification of Mental disorders	1
	c. Schizophrenia & its types	1
	d. Other psychotic disorders (Psychotic disorder, Delusional disorder, Schizo-affective disorders, Post partum psychosis	1
	e. Mood disorder	2
	f. Organic brain disorders (delirium, dementia,Amnestic syndromes, Organic personalitydisorder,)	2
	g. Anxiety disorders: Phobia, Obsessive Compulsive Disorder, Post Traumatic Disorders and Conversion disorder	2
	h. Somatoform disorder, (Hypochondriasis, Dissociative disorder, Conversion disorder, & Pain disorder)	1
	i. Somatizationdisorder	1
	j. Personalitydisorder	1
	k. Substance related disorder (alcohol)	1

	l. Disorders of infancy – childhood &adolescence i. Attention Deficit HyperactivityDisorder, ii. MentalRetardation iii. Conductdisorder, iv. Pervasive developmentaldisorder v. Enuresis vi. Speechdisorder	2
	m. Geriatric Psychiatry	1
	n. Eating disorder	1
	o. Management: ECT, Pharmacotherapy, Group therapy, Psycho therapy, Cognitive Behavioral Therapy and Rational Emotive Therapy.	2

CLINICAL **HOURS : 20hrs**

A. History, Mental Status Examination & evaluationof:

1. Schizophrenia
2. AnxietyDisorder
3. PersonalityDisorder
4. SomatoformDisorder
5. Childhood Disorder (ADHD,MR)
6. Organic Brain Disorder(dementia)

B. Seminar/ Workshop on Communicationskills

RECOMMENDED TEXTBOOKS:

1. Morgan C.T. & King R.A. Introduction to Psychology – recent edition [Tata McGraw-Hill publication]
2. Munn N.L. Introduction to Psychology [Premium Oxford, I.B.P. publishingCo.]
3. Clinical Psychology –Akolkar
4. Developmental Psychology-Elizabeth B. Hurlock(5th edition, Tata Mc-GrawHill)
5. A short book of Psychiatry – 3 rd edn- Ahuja – Jaypee bros – medicalpublishers
6. Short Textbook of Psychiatry- 7th edition -M.S.Bhatia
7. Shah L.P. Handbook ofPsychiatry

SCHEME OF UNIVERSITY EXAMINATION (THEORY ONLY)

		Marks
THEORY 40 marks + **I.A.** – 10 Marks [There shall be no LAQ in this paper] * The question paper will give appropriate weightage to all the topics in the syllabus.		**50**
Section A-Q-1	MCQs – based on **MUST KNOW** area on **PSYCHIATRY** (1x10)	**10**
Section-B-Q-2	SAQ- Questions based on **PSYCHOLOGY** to answer any TWO outofTHREE (2x5)	**10**
Section C- Q-3	SAQ – Questions based on **PSYCHIATRY** to answer any FOUR outofFIVE (4x5)	**20**
Total Marks		**40**

CLINICAL EXAMINATION: (College Examination only)

1. **Case presentation will be taken at the end of preliminaryexamination**
2. **Casepresentation:Historytaking:20marks+Communicationskills:20marks**

Total: 40marks

INTERNAL ASSESMENT:

1. **Two exams – Terminal and preliminary examination (**Theoryonly**) of 40markseach**

TOTAL - 80marks

2. **InternalAssessmenttobecalculatedoutof10marks(**Theoryonly**)**
3. **Internal assessment as per Universitypattern.**

KINESIOLOGY

DIDACTIC- 80 HRS

COURSE DESCRIPTION:

This course is based on anatomical, physiological & related kinesiological principles for normal human movement. Students have the opportunity to develop and acquire understanding of kinesiological responses for the efficacy in various kinesiotherapeutic applications.

Sr. No	Topics	Didactic Hours
1.	INTRODUCTION TO BIOMECHANICS	20
2.	REGIONAL KINESIOLOGY	40
3.	KINETICS AND KINEMATICS OF GAIT & ADLs	20

Objective – At the end of the course, the candidate will be able to –

1. Understand the principles of Biomechanics.
2. AcquiretheknowledgeofkineticsandkinematicsofSpine,Extremities,Temporo-Mandibular joint, Thoraciccage
3. AcquiretheknowledgeofMusculoskeletalmovementsduringnormalGaitand Activities of DailyLiving

SYLLABUS

Sr. No.	TOPICS	DIDACTIC HOURS
1	**INTRODUCTION TO BIOMECHANICS**	**20**
	a. Muscle Biomechanics i. Elements of muscle structure – fiber, size, motor unit, length tension, arrangement & number relationship ii. Classification of muscles iii. Mobility and Stability of muscles iv. Types of muscle contraction and factors affecting muscle function. b. Joint Biomechanics i. Basic principles of joint design ii. Classification ofjoints iii. Osteokinematics &Arthrokinematics iv. Concave Convex Rule v. Joint function, kinetics &kinematics	10 10
2	**REGIONAL KINESIOLOGY**	**40**
	a. Vertebral Column b. Thorax c. ShoulderComplex d. Elbow joint e. Wrist And HandComplex f. Hip Joint g. KneeComplex h. Ankle – Footcomplex i. Temporo-MandibularJoint	9 2 5 2 5 5 5 5 2
3	**KINETICS AND KINEMATICS OF GAIT & ADLs**	**20**

	a. GAIT i. Humanlocomotion ii. Subjective & Objectiveevaluation iii. Gait cycle & Measurableparameters (Step Length, Step Width, Stride Length, Foot Angle, Cadence) iv. Kinetics and kinematics ofgait v. Determinants ofgait **b. KINETICS AND KINEMATICS OFVARIOUS ACTIVITIES OF DAILYLIVING** i. Supine to Sitting, Sitting to Standing,Squatting, Climbing up & down ii. Lifting, Pulling, Pushing, Overheadactivities, iii. Running,Jogging.	10 10

RECOMMENDED TEXT BOOKS

1. Joint Structure and Function – Cynthia .C.Norkins
2. Clinical Kinesiology –Brunnstrom

RECOMMENDED REFERENCE BOOKS

1. Kinesiology of the Human Body –Steindler
2. Kinesiology of the Musculoskeletal system – Neumann &Donald
3. Kinesiology – The mechanics and Pathomechanics of Human motion – Oatis &Carol
4. Biomechanical Basis of Human Motion – Joseph andHamill
5. Physiology of the Joints – Kapandji Vol.- I,II,&III

SCHEME OF UNIVERSITY EXAMINATION (THEORY ONLY)

THEORY 80 MARKS + I.A. – 20 MARKS * The question paper will give appropriate weightage to all the topics in the syllabus.		**Marks** **100**
Section A-M.C.Qs.	Q-1 - MCQs – based on MUSTKNOWarea [1 x20]	**20**
Section B- S.A.Q.	Q-2 - Answer any SIX outof SEVEN [6 x 5] Based on introduction to biomechanics 1 (a and b) / Regional kinesiology	**30**
	Q-3- Answer any SIX outof SEVEN [6 x 5] Based on Kinetics and kinematics of gait & adls (a and b)	**30**
Total Marks		**80**

INTERNAL ASSESSMENT – (THEORY)

1. **Two exams – Terminal and preliminary examination of 80 marks marks each**
   TOTAL - 160marks
2. **Internal Assessment to be calculated out of 20marks.**
3. **Internal assessment as per Universitypattern.**

KINESIOTHERAPY

Didactic-80 Hrs + Practical/ Laboratory-160 HRS **[TOTAL - 240 HRS]**

COURSE DESCRIPTION:

This course is based on anatomical and physiological & related kinesiological principles for normal human movement and for the efficacy in the assessment methods for mobility, muscle strength. Students have the opportunity to develop and acquire understanding of physiological responses to various types of training and develop skills of exercise programs (on models). Exercise components of muscle strength, flexibility, balance, breathing and gait are examined. Evidence of appropriate, safe and effective exercise design and proper exercise biomechanics and prescription parameters are addressed with all interventions.

Sr. No.	TOPICS	Didactic Hours	Practical/ Lab Hours	Total Hours
1.	BIOPHYSICS	40	115	155
2.	POSTURE	05	05	10
3.	MOTOR & POSTURAL CONTROL AND BALANCE	03	00	03
4.	FUNCTIONAL REEDUCATION	05	05	10
5.	NEUROMUSCULAR CO-ORDINATION	05	05	10
6.	GAIT &WALKING AIDS	10	15	25
7.	BRONCHIAL HYGIENE	12	15	27
TOTAL		80	160	240

OBJECTIVES:

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

Cognitive:

Describe the Biophysical properties of connective tissue, & effect of mechanical loading, & factors which influence the muscle strength, & mobility of articular & periarticularsoft tissues.

Psychomotor:

1. Apply the biomechanical principles for the efficacy in the assessment methodsfor mobility, musclestrength
2. Acquire the skill of subjective and objective assessment of individual & group muscle strength
3. Acquire the skills of subjective and objective methods of musclestrengthening
4. Describe the physiological effects, therapeutic uses, merits / demerits of variousexercise modes includingHydrotherapy
5. Demonstrate various therapeutic exercises on self;& acquire the skill of application on

models with HomePrograms

6. Analyze normal Human Posture [static &dynamic].
7. Acquire the skill of functional re-education techniques onmodels
8. Acquire the skill of Balance and CoordinationExercises
9. Acquire the skill of using various walking aids for GaitTraining
10. Acquire the skill of demonstrating breathing exercises and retraining on self andothers
11. Acquire the skill of demonstrating Postural Drainage onmodels

SYLLABUS

Sr. No.	TOPICS	Didactic Hours	Practical/ Laboratory Hours	Total Hours
1.	**BIOPHYSICS**	**40**	**115**	**155**
	a. Biophysical Principles: i. Structures & Properties of connective and non connective tissues	2	-	02
	b. Stretching: i. Definition ii. Types iii. Assessment of muscle length and fascia around the joint iv. Principles of stretching v. Techniques for all joints vi. Individual muscle stretching	3	12	15
	c. Joint Mobility: i. Definition ii. Causes of limitation iii. Indication and contraindications iv. Principles v. Techniques vi. Assessment methods vii. Individual joints mobility Exercises–Upper Limb, Lower Limb viii. &Spine(Using active, assisted, passive movements)	10	17	27
	d. Manual Muscle Testing and assessment (subjective & objective): i. Principle ii. Trick movements iii. Group MuscleTesting iv. Individual Muscle testing – Upper & Lower Limbs, Trunk & Face	6	35	41

	e. Muscle Strengthening: i. Concepts -Strength, Power, Endurance ii. Factors influencing the Strength of normal muscle/ hypertrophy, recruitment of motor units, change after the training, training with isometric, isotonic & Isokinetic muscle contraction iii. Principles: Overload, Intensity, Motivation, Learning, Duration, Frequency, Reversibility, Specificity, Determinants iv. Methods : Subjective &Objective v. Individual joint Strengthening Exercises Upper Limb, Lower Limb &Spine vi. Concepts- 1 RM, 10 RM &Dynamometry vii. Progressive Resisted Exercise -Delorme, Zinoveiff, Mc queen protocols viii. Use of gymnasiumequipments	10	45	55
	f. Hydrotherapy: i. Physiological effects ii. Indication and Contraindications iii. Techniques	4	-	4
	g. Traction (Cervical &Lumbar): i. Introduction ii. Types(Mechanical /Electrical, Continuous/Intermittent) iii. Indications and Contraindications iv. Techniques v. Effects and uses	3	6	9
	h. Home Program: i. Principles ii. Ergonomic advice for ADLs iii. Home based exercise program	2	-	2
2.	**POSTURE**	**5**	**5**	**10**

	a. Definition b. Human posture –Changes from quadruped tobiped c. Correct and faultyposture d. Postural patterns and PosturalMechanism e. Factors affectingposture f. Physiologicaldeviations g. Analysis of all views			
3.	**MOTOR CONTROL, POSTURAL CONTROL AND BALANCE**	**03**	**-**	**03**
	a. MotorControl b. Postural Alignment &WeightDistribution c. SensoryOrganisation d. C.N.S.Integration e. MotorStrategies			
4.	**FUNCTIONAL REEDUCATION**	**5**	**5**	**10**
	a. Principles &Indications b. Mat exercises- mobility, strength and balancetraining c. Progression to sitting, standing andwalking d. Transfers			
5.	**NEUROMUSCULAR CO-ORDINATION AND BALANCE**	**5**	**5**	**10**
	a. Definition b. Physiology related to coordination &Balance c. Frenkels exercise (Principles &Techniques) d. BalancingExercise			
6.	**GAIT &WALKING AIDS**	**10**	**15**	**25**
	a. Gait i. Definition, ii. Gait cycle and measurable Parameters(Step Length, Step Width, Stride Length, Foot Angle,Cadence	3	7	10
	b. WalkingAids i. Types ii. Indications iii. Selection /Prescription iv. Pre 'Walking Aids'training v. Measurements vi. Gait with walkingaids	7	8	15
7.	**BRONCHIAL HYGIENE**	**12**	**15**	**27**
	a. Humidification &Nebulisation i. Definition	3	1	4

	ii. Types iii. Method ofdelivery iv. Indications andcontraindications b. Breathing Exercise– i. Types – Inspiratory , Expiratory (including forced expiratorytechnique) ii. Goals &Uses iii. Techniques iv. ACBT v. Autogenicdrainage c. PosturalDrainage: i. Definition ii. Indications &Contraindications iii. Assessment &Principles iv. Techniques	5 4	6 8	11 12

PRACTICAL: Chapter No: 1(b, c, d & e) 2, 4, 5, 6 & 7

RECOMMENDED TEXT BOOKS

1. Progressive Resisted Exercises – MargaretHollis,
2. Therapeutic Exercise foundation and techniques - CarolynKisner
3. Muscle Testing -DanielKendall
4. Principles of Exercise Therapy – DenaGardiner

RECOMMENDED REFERENCE BOOKS

1. Therapeutic Exercise - Basmajian &Wolf.
2. Orthopedic Evaluation –Magee
3. Cash's Textbook for Physiotherapists in Chest, Heart &Vasculardiseases
4. Therapeutic Exercise- Kisner and Colby
5. Physical Rehabilitation- O'Sullivan

SCHEME OF UNIVERSITY EXAMINATION

THEORY 80 MARKS + I.A. – 20 MARKS * The question paper will give appropriate weightage to all the topics in the syllabus.		**Marks** **100**
Section A- M.C.Q.	Q-1 - MCQs – based on MUST KNOW area [1 x 20]	**20**
Section B- S.A.Q.	Q-2 - Answer any SIX out of SEVEN [6 x 7] Based on biophysics/ Posture/ Motor& posturalcontrol, controland balance/ Functional reeducation	**30**
	Q-3- Answer any THREE out of FOUR [6 x 7] Based on Gait and walking aids/bronchial hygiene/Neuromuscular co-ordination and balance	**30**
Total Marks		**80**

PRACTICAL 80 MARKS + I.A. – 20 MARKS		**Marks** **100**
LONG CASE	Muscle Strengthening / Mobility /Bronchial hygiene (On models)	**35**
SHORT CASE	Two Short cases on M.M.T. /Coordination/Posture/Gait (Measurable parameters only as mentioned in chapter 6-a) / Walking aids/ Functional Reeducation /BreathingExercises 2 x 20 = 40marks	**40**
JOURNAL	Documentation- Principles & applications for various Kinesiotherapeutics.	**5**
Total Marks		**80**

INTERNAL ASSESSMENT:

1. **Two exams – Terminal and preliminary examination (**Theory & Practical**) of 80 marks each** **TOTAL - 160marks.**
2. **Internal Assessment to be calculated out of 20marks.**
3. **Internal assessment as per University pattern.**

ELECTROTHERAPY

Didactic –100 hrs+ Practical / Laboratory –200 hrs [**TOTAL - 300 HRS**]

COURSE DESCRIPTION:

This course tends to explore fundamental skills in application of electrotherapeutic modalities and knowledge of indications, contraindications and physiological principles needed for appropriate patient care. It includes topics such as Electrical stimulation, T.E.N.S., Iontophoresis, Ultrasound / Phonophoresis, Diathermy and Electro diagnostic testing etc.

Sr. No.	Topic	Didactic	Practical	Total
1	**PAIN**	003	-	**003**
2	**LOW FREQUENCY CURRENTS**	037	085	**122**
3	**MEDIUM FREQUENCY CURRENTS**	008	022	**030**
4	**BIOFEEDBACK**	005	-	**005**
5	**HIGH FREQUENCY CURRENTS**	012	028	**040**
6	**SOUND**	010	025	**035**
7	**ACTINOTHERAPY**	015	025	**040**
8	**ELECTROTHERAPY: WOUNDCARE**	010	015	**025**
	TOTAL	**100**	**200**	**300**

OBJECTIVES:

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

Cognitive:

1. Acquire the knowledge about the physiology of pain, Pain pathways & Methods ofpain modulation, selection of appropriate modality for Painmodulations.
2. Describe the Physiological effects, Therapeutic uses, indication & contraindicationsof various Low/ Medium & High Frequency modes /Actinotherapy
3. Describe the Physiological Effects & therapeutic uses of various therapeutic ions &topical pharmaco -therapeutic agents to be used for the application of iontophoresis & sono/ phonophoresis

Psychomotor:

1. Acquire the skills of application of the Electro therapy modes on models, for the purpose of Assessment &Treatment.
2. Acquire an ability to select the appropriate mode as per the tissue specific &areaspecific application.

SYLLABUS

Sr. No.	Topic	Didactic Hours	Practical Hours	Total Hours
1	**PAIN**	**3**	**-**	**3**
	a. Pain pathway b. Pain gate theory c. Descending pain suppressingsystem d. Physiologicalblock			
2	**LOW FREQUENCY CURRENTS**	**37**	**85**	**122**
	a. Faradic currents : Physiological & Therapeutic effects, indications, contraindications: i. Faradictype ii. Strong SurgedFaradic iii. Sinusoidalcurrents iv. Application of Faradiccurrent a. Faradism Under pressure –Indications, Principle of application, Technique of application b. Faradic re-education: Indications, Principleof application, Technique ofapplication v. Short/Long pulse currents Motor Points: Definition., Identification	**12**	**20**	**32**
	b. Galvanic / Direct currents (Continuous DC & Interrupted DC) : Physiological &Therapeutic effects, Indications,Contraindications i. Definition: Galvanic & InterruptedGalvanic Currents ii. Property ofAccommodation iii. Technique & Methods of Application of Galvaniccurrents iv. Types – Anodal & Cathodal,Therapeutic effects & uses, Technique & Methods of application, Dangers &precautions	**12**	**20**	**32**

	v. Ionization /Iontophoresis: Theory of Medical Ionisation, Effects & Uses of various Ions, Indications and contraindications, Dangersand precautions c. High Voltage Currents d. Micro Currents e. DidynamicCurrents f. Transcutaneous Electrical Nerve Stimulation (T.E.N.S.) i. Definition ,Types ii. Physiological & Therapeuticeffects iii. Technique & Methods ofApplication iv. Indications & contraindications g. Strength Duration Curves onmodel i. Principle of S-Dcurves ii. Technique ofplotting iii. Interpretation of normalcurves iv. Chronaxie andRheobase	**1** **1** **1** **5** **5**	**-** **-** **-** **20** **25**	**1** **1** **1** **25** **30**
3	**MEDIUM FREQUENCY CURRENTS**	**8**	**22**	**30**
	a. InterferentialTherapy i. Definition ,Types, ii. Physiological & Therapeuticeffects iii. Technique & Methods ofApplication iv. Electrodes types (including vacuum), Effects &Uses v. Advantages of I.F.T. over Low frequency currents vi. Indications &contraindications b. RussianCurrents			
4	**BIOFEEDBACK**	**5**	**-**	**5**
	i. Principle ii. Methods: Electrobiofeedback. iii. Uses ofBiofeedback			
5	**HIGH FREQUENCY CURRENTS S.W.D**	**12**	**28**	**40**
	i. Types: continuous /Pulsed ii. Definition andtypes iii. Physiological & Therapeuticeffects iv. Technique & Methods ofApplication			

	v. Electrodes types, Effects &Uses vi. Indications &contraindications vii. Dangers &Precautions			
6	**SOUND**	**10**	**25**	**35**
	Therapeutic Ultra Sound: Pulsed / Continuous i. Physiological & Therapeuticeffects ii. Technique & Methods ofApplication iii. Phonophoresis iv. Indications &Contraindications v. Dangers &Precautions			
7	**ACTINOTHERAPY**	**15**	**25**	**40**
	a. Radiant heat[I.R.] i. Physiological & Therapeuticeffects ii. Technique & Methods ofApplication iii. Effects &Uses iv. Indications &contraindications v. Dangers &Precautions	**5**	**5**	**10**
	b. U.V.R. i. Types : a, b,c ii. Physiological & Therapeuticeffects iii. Technique & Methods ofApplication iv. Effects &Uses v. Indications &contraindications vi. Dangers &Precautions vii. Test Dose	**6**	**20**	**26**
	c. Laser – He/ Ne, & I.R.combination i. Physiological & Therapeuticeffects ii. Technique & Methods ofApplication iii. Effects &Uses iv. Indications &Contraindications v. Dangers &Precautions vi. Dosage	**4**	**-**	**4**
8	ELECTROTHERAPY: WOUNDCARE i. Types ofwound ii. Application of Therapeuticcurrents, Ultrasound, U.V.R. &LASER	**10**	**15**	**25**

PRACTICAL:

Skills of application to be practiced on models in No-1 to 8 above

RECOMMENDED TEXT BOOKS

1. Clayton's ElectroTherapy
2. Electro therapy Explained – Low &Reed
3. Electro Therapy –Kahn
4. Therapeutic Electricity – SydneyLitch
5. Electrotherapy Evidence Based Practice – SheilaKitchen

RECOMMENDED REFERENCE BOOK

1. Clinical Electro Therapy – Nelson & Currier

SCHEME OF UNIVERSITY EXAMINATION

THEORY 80 MARKS + I.A. – 20 MARKS * The question paper will give appropriate weightage to all the topics in the syllabus.		**Marks** **100**
Section A- **M.C.Qs.**	Q-1-MCQs – based on MUSTKNOWarea [1 x20]	**20**
Section B- S.A.Q.	Q-2 - Answer any SIX outof SEVEN [6 x 5] [MUST KNOWarea] based on pain/ Low frequency currents/Medium frequency currents/Biofeedback	**30**
Section C-L.A.Q.	Q-3- Answer any THREE outofFOUR [6 x 5] based on Actinotherapy(I.R./U.V.R./LASER)/high frequency currents/ Sound/Electrotherapy: Woundcare	**30**
Total Marks		**80**

PRACTICAL 80 MARKS + I.A. – 20 MARKS		Marks 100
LONG CASE	Motor points /Strength Duration Curve / Faradism under pressure (On models)	**35**
SHORT CASES	1. Based on Low or Medium Frequency modalities/ High Frequencymodalities 2. Actinotherapy (I.R./U.V.R.) 2 x 20 =40 marks (Skill of application on models & rationale for selection ofmodality)	**40**
JOURNAL	Documentation- Principles & applications for various Electrotherapy Modalities.	**5**
Total Marks		**80**

INTERNAL ASSESSMENT:

1. **Two exams – Terminal and preliminary examination (**Theory & Practical**) of 80 marks each TOTAL - 160marks.**
2. **Internal Assessment to be calculated out of 20marks**
3. **Internal assessment as per University pattern**

SCHEME OF UNIVERSITY EXAMINATIONS AT A GLANCE

- II B.P.Th.

Subjects	Theory			Practical		
	University	I.A.	Total	University	I.A.	Total
Pathology & Microbiology	50 + 30	20	100	---	---	---
Pharmacology	40	10	50	---	---	---
Psychiatry (including Psychology)	40	10	50	---	---	---
Kinesiology	80	20	100	---	---	---
Kinesiotherapy	80	20	100	80	20	100
Electrotherapy	80	20	100	80	20	100
Total	**400**	**100**	**500**	**160**	**40**	**200**