

KRISHNA INSTITUTE OF MEDICAL SCIENCES

“DEEMED TO BE UNIVERSITY”, KARAD.

KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

B.P.Th - I Year

- 1. 3101 - 11: HUMAN ANATOMY**
- 2. 3101 - 12: HUMAN PHYSIOLOGY**
- 3. 3101 - 13: BIOCHEMISTRY**
- 4. 3101 - 14: FUNDAMENTALS OF EXERCISE THERAPY**
- 5. 3101 - 15: FUNDAMENTALS OF ELECTRO THERAPY**

3101-11: HUMAN ANATOMY

- DIDACTIC THEORY HOURS – 160HOURS
- PRACTICAL HOURS – 80HOURS
- TOTAL: 240 HOURS

OBJECTIVES:

TOPIC 1: MUSCULO - SKELETAL

- a) The student should be able to identify & Describe Anatomical aspects of Muscle, bones & joints, & to understand and Analyze movements
- b) To understand the Anatomical basis of various clinical conditions e.g. Trauma, deformities, pertaining to limbs & spine.
- c) To be able to localize various surface land-marks;
- d) To understand & describe the mechanism of posture & gait & the Anatomical basis of abnormal gait.

TOPIC 2: NEURO-ANATOMY

- a) To identify & describe various parts of C.N.S.-fore- brain, Midbrain, Hind-brain, Brain stem, courses of cranial nerves; functional components,-course distribution-Anatomical bases of clinical lesions
- b) To describe the source & course of spinal tracts
- c) To describe blood circulation of C.N.S.& spine
- d) Be able to identify the components of various Trans sections.

TOPIC 3: THORAX

- a) To identify & describe various components of the contents of the Thorax-with special emphasis to tracheo-bronchial tree, & cardio- pulmonary system.

TOPIC 4: CIRCULATORY

- a) Be able to identify & describe the source & course of major arterial, venous & lymphatic system, with special emphasis to extremities, Spine & Thorax.

TOPIC 5: PSYCHOMOTOR

- a) To be able to demonstrate the movements of various joints-
- b) Distinguish cranial & peripheral nerves
- c) Distinguish major arteries, veins & Lymphatic with special emphases to extremities, & spine

SYLLABUS:

Sr. No.	CONTENT	TEACHING HOURS		MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
		Didactic	Practical			
1.	General Anatomy	50 Hrs	20 Hrs			
	Topic 1: Histology	10 Hrs		MK		
	A. Cell		1Hrs			
	B. Tissue Of The Body,		1Hrs			
	C. Epithelium		1Hrs			
	D. Connective Tissue,		1Hrs			
	E. Cartilage,					
	F. Bone,					

	G. Blood,		1Hrs			
	H. Lymph,					
	I. Muscles & Nerve.					
	(Special Instructions: Student Should Be Able To Identify The Above In Various Slides Under Microscope)		1Hrs			
	* Topic 2: Embryology	10 Hrs				NK
	A. Ovum, spermatozoa, Fertilization & formation of firm layers and their derivations .					
	B. Development of skin, fascia, blood vessels, lymphatics,					
	C. Development of bones, axial & appendicular skeleton & muscles		1Hr	MK		
	D. Neural tube, brain vessels, spinal cord		1Hr	MK		
	E. Development of brain & its various parts		1Hr	MK		
	F. Development of cardiovascular and respiratory system		1Hr	MK		
	Topic 3: Skin & appendages of skin (brief out line)	4 Hrs	1Hr		DK	
	Topic 4: Cardiovascular System	5 Hrs	1Hr	MK		
	a) Heart	1 Hr	1Hr			

	b) Arteries,	1 Hr	1Hr			
	c) Veins,	1 Hr	1 Hr			
	d) Collateral circulation,	1 Hr	1Hr			
	e) Nervous control of circulation (in detail)	1 Hr				
	Topic 5: Respiratory system	5 Hrs		MK		
	a) Lungs,	2 Hrs	1Hr			
	b) Pleura,	2 Hrs	1Hr			
	c) Broncho-pulmonary segments (in detail)	1 Hr	1Hr			
	Topic 6: Digestive system (Brief out line)	2 Hrs	1Hr		DK	
	Topic 7: Urinary system (Brief out line)	2 Hrs	1Hr		DK	
	Topic 8: Male reproductive system (Brief out line)	1Hr		MK		
	Topic 9: Female reproductive system) (in detail)	1 Hr		MK		
	Topic 10: Endocrine system	5 Hrs		MK		
	Topic 11: Lymphatic system (Brief out line)	2 Hrs		MK		
	Topic 12: Radiological	3 Hrs		MK		

	anatomy of thorax					
2.	*MUSCULOSKELETAL ANATOMY – Gross Anatomy (All The Topics to be taught in detail)	55 Hrs	30 Hrs	MK		
	Topic 1: Anatomical positions of the body, axis, planes & common anatomical Terminologies related to musculoskeletal anatomy (groove, tuberosity, trochanters, Etc.)	15 Hrs	1Hr			
	Topic 2: Fascia – hard connective tissue.	2 Hrs	1Hr			
	Topic 3: Bones – compositions & functions, classifications & types according to morphology & development.	15 Hrs	1Hr			
	Topic 4: Joints – definition, classification, structure of fibrous cartilaginous joints, and movements of joints, blood supply & nerve supply. Detailed anatomy covering all the joints of the major joint complexes in the body will be added.	8 Hrs	1Hr			
	a. Anatomy of all joints-shoulder, elbow, wrist, hip, knee and ankle.		5Hrs	MK		
	B. Applied anatomy relevant to the course.		2Hrs		DK	
	C Accessory joints and its clinical correlation		1Hr			NK
	Topic 5: Regional anatomy	15 Hrs		MK		
	a. Superior extremity- - joints with extra articular		1Hr			

	structures, osteology, - bones of upper limb and hand- soft parts – breast, pectoral region & muscles attachment fascia, ligaments, blood vessels, nerves as well as lymphatic drainage upper limb.					
	b. Inferior extremity – Osteology - - Bones & Joints with extra articular structures of lower limb, blood vessels & nerves, lymphatic drainage of leg, arches of the foot, skin of the foot.		1Hr			
	c. Trunk – Osteology - All the bones of the vertebral column & ribs, inter vertebral joints, inter vertebral disc, ligaments & muscles of the spine (all to be elaborated), inter costal muscles, thoracic cage, respiratory muscles, muscles of breathing, mechanics of breathing		1Hr			
	d. Salient points about the eyeball, internal ear, triangles of the neck.		1Hr			
	e. Radiological anatomy of musculoskeletal system.		1Hr			
	f. Surface Anatomy of related structures.		1Hr			
3.	Neuroanatomy (All The Topics To Be Taught In Detail)	55 Hrs	30 Hrs	MK		
	Topic 1: Organization of CNS, spinal nerves & ANS mainly pertaining to cardiovascular, respiratory & uro-genital systems.	10 Hrs	1Hr			
	Topic 2: Cranial nerves.	5 Hrs	2Hrs			

Topic 3: PNS	15 Hrs				
a) Peripheral nerves,		2Hrs			
b) Neuromuscular junction,		1Hr			
c) Myotomes & dermatomes,		1Hr			
Topic 4: CNS	25 Hrs		MK		
a) Cerebral cortex - Various functional areas,		2Hrs			
b) Brain stem,		1Hr			
c) Pons,		2Hrs			
d) Medulla oblongata		1Hr			
e) Cerebellum,		1Hr			
f) Basal ganglia,		1Hr			
g) Diencephalons,		1Hr			
h) Thalamus,		1Hr			
i) Sub thalamus,		1Hr			
j) Hypothalamus,		1Hr			
k) Corpus striatum,		1Hr			
l) Ventricles of the brain blood supply of the brain,		2Hrs			
m) Internal capsule,					

	n) Visual radiations,		1Hr			
	o) Thalamo-cortical radiations,		1Hr			
	p) Auditory radiations,		1Hr			
	q) Pyramidal system		1Hr			
	r) Spinal cord segments and areas,		1Hr			
	s) Different tracts of spinal cord-pyramidal & extra pyramidal system		1Hr			
	t) Anatomic integration & intracortical integration of CNS,		1Hr			
	u) Blood brain barrier		1Hr			

- **PRACTICAL :**

- i) To be able to demonstrate the movements of various joints – (33 Hrs)
- ii) Distinguish cranial & peripheral nerves (30 Hrs)
- iii) Distinguish major arteries, veins & lymphatics with special emphases to extremities, & spine. (12 Hrs)

- **TEXT BOOKS**

1. Human Anatomy – by Snell
2. Anatomy by Chaurasia all 3 volumes
3. Neuro anatomy by Inderbir Singh
4. Human Anatomy by Kadasne (All tHree volumes)

- **REFERENCE BOOKS**

1. Gray's Anatomy
2. Extremities by Quining Wasb
3. Atlas of Histology by Mariano De Fiore
4. Anatomy & Physiology by Smout and McDowell
5. Kinesiology by Katherine Wells
6. Neuroanatomy by Snell

SCHEME OF EXAMINATION

THEORY: 80 MARKS + INT. ASSESSMENT: 20 MARKS TOTAL: 100 MARKS

MODEL QUESTION PAPER – 80 MARKS

Section A) Q1) MCQ

- Based on Single best response – [20 x 1 = 20marks] This question should include topics covered in syllabus.

Section B)

- Q.2) BAQ - Answer 10 questions of 2 marks each [10 X 2 = 20 marks]
- This question should include i]-Digestive ii]-uro-genital iii]-reproductive system iv] - special senses-eye/ear/skin v]-circulatory system
- Q.3) SAQ - Answer any 4 out of 5 [4 X 5 = 20 marks]

This question should include i]-Thorax ii]-soft parts upper limb iii]-soft part-lower limb IV]-soft parts Thorax/ spine / neck

Section C) LAQ: Q.4)

a) One compulsory question of 10 marks

Based on Musculo-Skeletal system [including Kinesiology]

b) Answer any one out of two – 10 marks

Should be based on Neuro-Anatomy [including cranial nerves with V, VII, VIII, IX & XII nerves

Emphasis to

INTERNAL ASSESSMENT MARKS: TOTAL MARKS ALLOTTED: 20 MARKS

INTERNAL ASSESSMENT THEORY: TWO EXAMS – TERMINAL AND PRELIMS OF 80 MARKS EACH (TOTAL 160 MARKS)

PRACTICAL EXAMINATION:

TWO EXAMS - TERMINAL AND PRELIMS OF 80 MARKS EACH (TOTAL: 160 MARKS)

- | | | |
|------------|-------|----------|
| 1. SPOTS | ----- | 60 MARKS |
| 2. VIVA | ----- | 15 MARKS |
| 3. JOURNAL | ----- | 05 MARKS |



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3101-12: HUMAN PHYSIOLOGY

- DIDACTIC THEORY: 155 HOURS
- PRACTICAL: 80 HOURS
- TOTAL: 235 HOURS

OBJECTIVES

At the end of the course, the candidate will -

- Acquire the knowledge of the relative contribution of each organ system in maintenance of the milieu interior [Homeostasis]
- Be able to describe physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor, Cardio-respiratory, Female uro-genital function, & alterations in function with aging.
- Analyze physiological responses & adaptation to environmental stresses-with special emphasis on physical activity, temperature.
- Acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, Cardiovascular & Respiratory system, & Exercise tolerance / Ergography.

Sr. No.	CONTENT	TEACHING HOURS (Didactic)	MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
1.	*General Physiology(30 Hrs) (Only short notes) GROSS studies (details not required)				
	Topic 1: Blood	5 Hrs	MK		
	a) Composition and functions of blood.				
	b) Blood groups				
	c) Erythropoietin, WBC & Platelets.				
	d) Coagulation				

	Topic 2: Digestive system	5 Hrs			NK
	a) General introduction, organizational plan of digestive system				
	b) Composition, function and regulation of salivary, gastric, pancreatic, intestinal and biliary secretions.				
	c) Movements of GI tract				
	Topic 3: Excretory System General introduction, structure & functions of kidney in general, nervous control of bladder and applied physiology of bladder, urine formation Micturition, neural control of bladder & bowel.	8 Hrs	MK		
	Topic 4: Endocrine system Secretion, regulation and functions of pituitary, thyroid, adrenal, pancreas, parathyroid, testis and ovaries, (details).	8 Hrs		DK	
	Topic 5: Physiology of Cell, Transportation across the cell membrane.	4 Hrs	MK		
2.	*Neurophysiology:(45 Hrs)				
	Topic 1: Peripheral nervous system	15 Hrs	MK		
	a) Structure, classification & properties				
	b) R.M.P.				
	c) Action potential;				
	d) Propagation of nerve impulse				
	e) Degeneration & regeneration				
	f) Reaction of degeneration [retrograde]				
	g) Neuromuscular				

	transmission.				
	h) Myoneural junction				
	i) Motor unit action potential				
	j) Brief out line of eletrodiagnostic test.				
	Topic 2: CNS	20 Hrs	MK		
	a) Physiology of synapse				
	b) Physiology of receptor organs for general special sensation				
	c) Physiology of pain touch pressure temperature, stereognosis and kinesthetic sensation.				
	d) Physiology of reflex action, classification and properties of reflexes excluding conditioned reflexes.				
	e) Sensory and motor tracts of spinal cord and effects of complete and incomplete transaction of spinal cord at various levels.				
	f) Functions of cerebellum & basal ganglia				
	g) Sensory and motor cortex				
	h) Physiology of labyrinthine system, Limbic system				
	i) Regulation of equilibrium and posture.				
	j) Learning and memory				
	k) Reticular activating system.				
	Topic 3: Autonomic Nervous System Sympathetic / Parasympathetic system	10 Hrs	MK		
	Adrenal medulla, functions				
	Neuro-Transmitters - role in the function of pelvic floor, micturation, defecation labor.				

3.	*Muscle Physiology	15 Hrs	MK		
Topic 1: Structure, properties and classification of muscles. Physiology of muscle contraction, excitation, and coupling					
Topic 2: Motor unit-E.M.G.- factors affecting muscle transmission.					
Topic 3: Physiology of Muscle Tone (muscle spindle)					
Topic 4: Physiology of Voluntary movement.					
Topic 5: Applied physiology of muscles.					
4.	*Respiratory System (in detail)	20 Hrs	MK		
Topic 1: Introduction, general organization.					
Topic 2: Mechanics of respiration.					
Topic 3: Pulmonary Volumes & capacities.					
Topic4: Ventilation/perfusion ratio, alveolar ventilation.					
Topic5: Anatomical & physiological Dead space.					
Topic 6: Transport of respiratory gases					
Topic7: Nervous & Chemical control of respiration.					
Topic 8: Pulmonary function tests- Direct & indirect method of measurement.					
Topic9: Physiological changes with altitude & acclimatization.					
Topic 10: Brief out line about artificial ventilation.					
5.	*Cardio Vascular	20 Hrs	MK		

	Topic 1: Structure & properties of cardiac muscle.				
	Topic 2: Cardiac cycle.				
	Topic 3: Heart rate regulation, factors affecting.				
	Topic 4: Blood pressure, definition, regulation, factors affecting.				
	Topic 5: Blood supply to heart.				
	Topic 6: Cardiac output, regulation & affecting factors.				
	Topic 7: Peripheral resistance, venous return.				
	Topic 8: Regional circulation, coronary, muscular & cerebral.				
	Topic 9: Conductive system of heart.				
	Topic 10: Normal ECG				
6.	*Exercise Physiology	10 Hrs	MK		
	Topic 1: Effects of acute & Chronic exercises on <ul style="list-style-type: none"> a. O₂/CO₂ transport b. Muscle strength/ power/ endurance c. BMR/ RQ/ O₂ dept d. Hormonal & metabolic effects e. Cardiovascular system f. Respiratory system g. Body fluids and electrolytes h. Consequence of over exercising the abnormal muscle. 				
	Topic 2: Effect of gravity/altitude/acceleration/pressure on physical parameters.				
	Topic 3: Physiology of aging.				
	Topic 4: Training-fatigue-& recovery.				
	Topic 5: Fitness-related to age, gender, & body type.				

7.	*Temperature Regulation (Desirable to know) Topic 1: Circulation of the skin –body fluid –electrolyte balance	5 Hrs		DK	
8.	*Reproductive System	5 Hrs		DK	
	Topic 1: Functions of Estrogen, Progesterone & Testosterone.				
	Topic 2: Puberty & Menopause.				
	Topic 3: Childhood Obesity and its Physiological Basis				
	Topic 4: Lymphatic System (brief out line)				
9.	*Special Senses	5 Hrs			NK
	Topic 1: Physiology of vision.				
	Topic 2: Physiology of hearing.				
	Topic 3: Physiology of taste.				

TEXT BOOKS:

1. Course in Medical Physiology—Vol-I & II-by Dr Chandhani
2. Medical Physiology by Dr. Bijlani
3. Textbook on Medical Physiology-By Gyton
4. Textbook of Medical Physiology- By Shembulingam
5. Textbook of Medical Physiology- By A.K. Jain

REFERENCE BOOKS:

1. Review of medical physiology-Gavton.
2. Samson & Writes Applied physiology.

HUMAN PHYSIOLOGY - PRACTICAL:

1. Hematology- (demonstration only)

15 Hrs.

2. Graphs 14 Hrs.

- i. Skeletal muscle-properties-pre /after load-fatigue-Starling's law
- ii. Cardiac muscle- properties-effect of Ach & Adrenaline.

3. Physical fitness 12Hrs

- i. Breath holding
- ii. Mercury column test;
- iii. Cardiac efficiency test-Harvard step test- Master step test.

4. Blood pressure –effects of change in posture & exercise 8 Hrs

5. Stethography 4 Hrs

- i. Effect of deglutination;
- ii. Voluntary hyperventilation

6. Spirometry 4 Hrs

- i. Lung volumes-
- ii. Timed vital capacity.

7. Bicycle Ergography 4 Hrs

8. Perimetry 4 Hrs

9. Clinical examination 15 Hrs

Respiratory / CVS/ Higher functions / Memory / Time / Orientation / Reflexes / Motor & Sensory system.

SCHEME OF EXAMINATION

1.	Theory	80 Marks
2.	Int. Assessment	20 Marks
	Total	<hr/> 100 Marks

MODEL QUESTION PAPER

Section - A: Q 1 - MCQ.

Based on single Best answer (20x1 = 20 marks)

It must include MUST KNOW questions

Section - B:

Q.2 BAQ Answer 10 questions of 2 marks each (10x2 = 20 marks)

Q.3 SAQ Answer any Four out of Five (4x5 = 20 marks)

Relevant mixed questions covering the syllabus

Section-C: LAQ (Total: 20 marks)

[Note: LAQ should give break up of 10 marks]

Q.4 One compulsory question based on Musculo-skeletal system 10 marks

Q.5 Based on C.N.S / spinal cord / Electro-Neuro-physiology 10 marks

OR

Q.6 Based on Exercise Physiology, CVS, and Respiratory system 10marks

PRACTICAL: 80 MARKS

1. Total Four Spots (5X4 = 20 Marks)
5 Minute per spot and five marks per spot
Spot based on Nervous System, Respiratory System, Cardiovascular System, Exercise Physiology

2. Demonstration on clinical Physiology (35 Marks)
Clinical Physiology on Resp/CVS/ Higher functions/Memory time/Orientation/Reflexes/Motor & Sensory system.

3. Viva (20 Marks)
Based on Hematology / Graphs / Physical fitness/BP / Stethograph / Spirometry / Ergography/ Perimetry

4. Journal (5 Marks)



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Program Code: 3101

3101-13: BIOCHEMISTRY

- DIDACTIC ONLY - 65 HOURS

OBJECTIVES

At the end of the course, the candidate will -

- 1) Be able to describe structures & functions of cell in brief.
- 2) Be able to describe normal functions of different components of food, Enzymes.
- 3) Define Basal metabolic rate & factors affecting the same [in brief], with special reference to obesity.
- 4) Be able to discuss nutritional aspects of carbohydrates, lipids, proteins & Vitamins & their metabolism with special reference to obesity.
- 5) Define enzymes; discuss in brief, factors affecting enzyme activity.
- 6) Describe in details biochemical aspects of muscle contraction.
- 7) Acquire knowledge in brief about the Clinical biochemistry, with special reference to Liver & renal function test, Blood study for Lipid profile, metabolism of fat, Carbohydrates, proteins, bone minerals, & electrolyte balance.

Sr. no	Topic	Teaching Hours	Must Know	Desirable to know	Nice to know
1	Cell biology a. Membrane structure & function b) Junction of intracellular organelle in brief- [no structural details needed]	1 Hr	MK		
2	Carbohydrates a. Chemistry-definition, classification with examples b) Functions of carbohydrates with mucopolysaccharides [in details] c) Reducing properties of sugars of clinical & diagnostic importance [e.g. Benedict's test, Ban food's test etc d) Metabolism-Digestion & absorption of carbohydrates –Glycolysis - aerobic, anaerobic, Energetics & regulation e) Kreb`s cycle-its energetics & regulation-	8 Hrs	MK		

	<p>role of T.C.A. cycle</p> <p>f) Glycogenesis, glycogenolysis & their regulation-role of liver in muscle glycogen</p> <p>g) Glyconeogenesis-significance of H.M.P. shunt</p> <p>h) Hormonal regulation of blood sugar levels-Important metabolic disorders of glycogen, lactose intolerance, Diabetes mellitus.</p>				
3	<p>Proteins</p> <p>a) Chemistry-definition-function-classification of Amino acids-protein structure-effect of temperature on proteins- denaturation-coagulation; isoelectric pH & its importance</p> <p>b) Metabolism-Digestion & absorption-Decarboxylation- De-amination</p> <p>c) Transmethylation-transamination & their importance-Detoxification of ammonia including urea cycle</p> <p>d) Special products of amino acid-e.g. phenylalanine glycine ,methionine[no biosynthesis]</p> <p>e) Neuro-transmitters no bio-synthesis]</p>	5Hrs	MK		
4	<p>Lipids</p> <p>a) Chemistry-definition-classification-[including fatty acids with examples]-function</p> <p>b) Metabolism-Digestion & absorption of lipids-B-oxidation-of saturated fatty acids & its energetics & regulation of fat metabolism in adipose tissue-Ketone bodies formation & utilization—cholesterol & its importance [no biosynthesis needed]-classification, sources & function of lipoproteins-lipoproteinemia atherosclerosis</p> <p>c) Fate of Glycerol in- [pathways & reaction not required.</p> <ul style="list-style-type: none"> • Gluconeogenesis, • Energy [glycolysis], • triglycerides, • Phospholipid synthesis, 	5 Hrs	MK		
5	<p>Nucleic Acids</p> <p>D.N.A. /R.N.A.-definition-structure & function-types-Genetic code-catabolism of purine –gout</p>	2 Hrs		DK	
6	<p>Enzymes</p> <p>a) Definition-Co-Enzymes-classification-factors affecting</p> <p>b) General metabolism of enzymes [in brief]</p> <p>c) Inhibition & types of inhibitors</p>	3 Hrs			NK

	<p>d) Iso - enzymes</p> <p>e) Clinical & therapeutic use of enzymes</p>				
7	<p>Vitamins</p> <p>a) Water & Fat soluble-definition-classification</p> <p>b) Individual vitamins-sources-Co-enzyme forms- function-reaction related to metabolism covered</p> <p>c) RDA, absorption-& transport-deficiency & toxicity.</p>	5Hrs	MK		
8	<p>Biological Oxidation</p> <p>Oxidative phosphorylation & ETC in brief</p>	1 Hr		DK	
9	<p>Minerals</p> <p>a) Phosphate, calcium, & iron [in details]</p> <p>b) Magnesium, fluoride, Zink, Copper, Selenium Molybdenum, Iodine-sources, RDA, absorption, -transport-excretion function & disorder</p>	3 Hrs	MK		
10	<p>Acid- Base Balance, Water & Electrolyte</p> <p>a) Body water, pH-osmolarity Extra & Intra cellular fluid</p> <p>b) Buffers-pH, buffer system in blood</p> <p>c) Role of kidneys & lungs in acid-base balance</p> <p>d) Water - electrolyte balance imbalance – dehydration</p>	3 Hrs		DK	
11	<p>Hormones</p> <p>a) Definition-classification-mechanism & action</p> <p>b) Second messenger Ca, camp, inositol phosphate</p> <p>c) Metabolic effects of a]-Insulin, b]-Glucagon, c]-Catecholamines, d]-Thyroxine</p> <p>d) Mineralo-corticoids,f]-gluco corticoids</p>	3 Hrs			NK
12	<p>Muscle Contraction</p> <p>a) Contractile elements</p> <p>b) Biochemical events during contraction</p> <p>c) Energy metabolism in skeletal & cardiac muscle</p>	3 Hrs	MK		
13	<p>Connective Tissue</p> <p>Biochemistry of connective tissue-collagen –Glyco-protein –proteoglycans</p>	2 Hrs	MK		
14	<p>Nutrition</p> <p>a) Importance of nutrition-Calorimetry-energy value-calorimeter-respiratory quotient & its significance</p> <p>b) Basal metabolic rate-definition-normal values-factors affecting BMR</p>	4 Hrs	MK		

	<p>c) Energy requirement-with-age/sex/thermogenesis/-specific dynamic action of food, -energy expenditure for various activities</p> <p>d) Composition of food, balanced Diet dietary recommendations nutritional supplementation- nutritional value of carbohydrates/proteins/fats & Fibers</p> <p>e) Nitrogen balance & its significance-Protein energy malnutrition-Kwashiorkor & Marasmus</p>				
15	<p>Clinical Biochemistry</p> <p>a) Liver function test & Renal function test</p> <p>b) Relevance of blood levels of glucose, urea, Ca-Phosphate-& uric acid</p> <p>c) Enzymes-Amylase, CPK, LDH,iroenzymes</p> <p>d) Lipid profile-Tri -glyceride, cholesterol/HDL/LDL/ALDL etc</p> <p>e) Protein & Aggression i]-Glycosuri</p> <p>f) Substrate identification tests (Carbohydrates, proteins, fats)</p> <p>g) ABG analysis</p> <p>h) Blood lactate measurements</p> <p>i) Adultration identification tests</p> <p>j) - Liver and Renal Function tests</p>	13 Hrs	MK		
16	Obesity	1Hr			
17	Diabetes Biochemical changes in Diabetics.	1Hr			NK
18	Alcohol Metabolism Alcohol abuse	1Hr		DK	
19	<p>Chemical changes in Sports injuries. Various chemical changes in athletes which lead to sports injuries</p> <ul style="list-style-type: none"> • Sports injuries and its relevance to the level of play/expertise - Lactate tHreshold - Delayed Onset Muscle Soreness 	1Hr			NK

TEXT- BOOKS

- 1] Biochemistry-by Dr. Deb Jyoti Das,
- 2] Biochemistry-by-Dr Satyanarayan
- 3] Text book of Biochemistry for Medical students by-Dr Vasudevan/ SHri kumar

REFERENCE BOOKS

- 1] Review of Biochemistry [24th edition] by Harper.

SCHEME OF EXAMINATION [THEORY ONLY]

(THEORY-80 MARKS + INTERNAL ASSESSMENT-20 MARKS)

Section: AMCQ, Q.1

Single best answer of MUST KNOW area 20 marks

Section: B

Q. 2. BAQ - To attempt 10 questions of 2 marks each 10x2 = 20 marks

Q.3. SAQ - To attempt any FOUR out of FIVE questions 4x 5 = 20 marks

Section: C, LAQ (LAQ should give break up of 10 Marks)

Q. 4. [Compulsory] 10 marks

[Should be based on Musculo-skeletal / Neural Biochemistry]

Q-5] ----- 10marks

OR

Q-6] ----- 10 marks

[Should be based on Nutrition / Clinical Biochemistry / Lipids]



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3101-14: FUNDAMENTAL OF EXERCISE THERAPY

- DIDACTIC THEORY HOURS: 100 HOURS
- PRACTICAL HOURS: 150 HOURS
- TOTAL: 250 HOURS

OBJECTIVES

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

- 1) 1] To define the various terms used in mechanics, biomechanics & kinesiology
- 2) 2] Recall the basic principles of physics related to mechanics of movement / motion & will be able to understand the application of such principles to the simple equipment designs, & their efficacy in therapeutic gymnasium, & various starting position used in therapeutics.
- 3) 3] To describe & also acquire the skill of use of various tools of the therapeutic gymnasium
- 4) 4] To demonstrate passive movements in terms of various anatomical planes
- 5) 5] To demonstrate various starting & derived positions
- 6) 6] Acquire the skill of application of various massage manipulations & describe the physiological effects, therapeutic use, merits / demerits of the same.
- 7) 7] Acquire a skill of assessment of sensations, superficial & deep reflexes, pulse rate / blood pressure, chest expansion / respiratory rate, & limb length / girth measurement on models
- 8) 8] To demonstrate & also acquire the skill of relaxation.
- 9) 9] To describe the skill & usefulness of group & recreational activities & will be able to demonstrate general fitness exercises used in physical training.
- 10) 10] Be able to define yoga & its types, its physiological & psycho-somatic effects & will be able to demonstrate standard yoga postures used by the beginners.
- 11) 11] Be able to describe physiological principles of aerobic exercise conditioning related to general fitness & demonstrate skill of general fitness exercises & shall gain fitness for self.

Sr. No.	CONTENT	TEACHING HOURS		MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
		Didactic	Practical			
1.	Biomechanics (D:25/P:37)					
a.	Mechanical principles & its therapeutic applications					

	Forces a) Components b) Principles of force c) Classification of forces d) Sources of forces e) Application of forces in the therapeutic effect of traction forces	2 Hrs 2 Hrs 2 Hrs 2 Hrs 2 Hrs	9 Hrs	MK		
	Physics Of Motion a) Newton's laws b) Analysis of a movement – kinetic & kinematics	1Hr		MK		
	Equilibrium a) classification b) Relationship between the stability and base of support	1 Hr	1 Hr	MK		
	Inertia a) Definition and effect over a movement.	1Hr	2Hrs	MK		
	Levers in detail: a) classification b) effects and uses c) levers in physiotherapy	4Hrs	5 Hrs	MK		
	Pulleys /springs a) classification b) mechanical advantages in each type c) therapeutic uses	1Hr	4 Hrs	MK		
	Pendulum in detail	1Hr	1Hr		DK	
	Muscle as a source of kinetics a) Introduction about muscles, muscle cell, muscle fibril, muscle fiber, muscle tissue b) Classification of muscle fibers, based on arrangement, energy expenditure, by physical nature and biomechanical efficiency. c) Muscle work- describe in detail- isometric, isotonic and isokinetic, angle of pull, mechanical advantage, moment arm, torque, resolution of muscular force, normal muscle action and reverse action. d) Muscle tone, factors maintains of normal muscle tone. e) Factors responsible muscle function. f) Applied myology in brief.	6 Hrs	10 Hrs	MK		
2.	Osteokinematics a) introduction about bone as a connective tissue, types of bones related to stress applied in various circumstances	1Hr	2Hrs	MK		

	b) functions of bone, bone as a resource of force, bony lever, anatomical pulley					
3.	<u>Orthokinematics:</u> a) Introduction about artHrology b) Describe about the joint motion, sources, factors responsible for mobility and stability of joint. c) Characteristic feature of joint motion especially during combined movement as well as isolated movement. d) Describe the various positions attained by any joint when it is subject to function. e) Applied artHrokinematics in brief.	2Hrs	2Hrs	MK		
4.	Muscle as a source of kinetics a) Introduction about muscle, muscle cell, muscle tissue. b) Classification of muscle fibers, based on arrangement, energy expenditure, by physical nature and biomechanical efficiency. c) Muscle work describe in detail, isometric, isotonic and isokinetic, angle of pull, mechanical advantage, moment arm, torque, resolution of muscular force, normal muscle action and reverse action d) Muscle tone, factors responsible for maintaining normal muscle tone. e) Factors responsible for muscle function f) Applied myology in brief	1Hr	1Hr	MK		
4.	Introduction to Exercise Therapy a) Principles of exercise therapy, definition, aims and objectives of exercise therapy. b) Branches of exercise therapy. c) An orientation about various skills of manual therapy.	1 Hr	7 Hrs	MK		
5.	Conventional techniques 1) Passive exercises a) Relaxed passive movements b) Passive manual mobilization techniques c) Passive stretching d) Manipulations	3 Hrs 2 Hrs 3 Hrs 1 Hr	14 Hrs	MK MK	DK	NK
	2. Active exercises a) Definition & Classification	2 Hrs	12 Hrs			

	<ul style="list-style-type: none"> b) Active assisted exercises c) Active resisted exercises d) Assisted resisted exercises e) Free exercises f) Exercises for endurance 	<ul style="list-style-type: none"> 1 Hr 1 Hr 1 Hr 1 Hr 1 Hr 1 Hr 		MK		
6.	Therapeutic Gymnasium Suspension Therapy, other accessory modalities.	5 Hrs	7 Hrs	MK		
7.	Hydrotherapy Physics principles, hydrotherapy pool, and exercises in the pool, maintenance, indications, contraindications, and therapeutic uses.	3 Hrs	5 Hrs			NK
8.	Walking Aids In Detail	2 Hrs	5 Hrs	MK		
9.	Physical Parameters In Exercise Therapy Includes Joint range of motion analysis: Goniometry for extremities and spine, limb length, girth, measurement of chest expansion and vital signs.	15 Hrs	20 Hrs	MK		
10.	Principles Of Group Exercises Merits & Demerits.	2 Hrs	3 Hrs		DK	
11.	Principles Of Exercise Therapy Treatment	1 Hr	2 Hrs	MK		
12.	Fundamental Starting & Derived Positions.	10 Hrs	10 Hrs	MK		
13.	Soft tissue manipulation					
	Topic 1. Introduction Manipulative Technique					
	<ul style="list-style-type: none"> a) History b) Definition and classification c) Principles of massage d) Techniques of massage in detail e) General effects and uses f) General indications & contraindications 	5 Hrs	1 Hr	MK		
	Regional massage & its therapeutic uses <ul style="list-style-type: none"> a) Scalp massage b) Facial massage c) Back massage d) Abdominal massage e) Upper limb massage f) Lower limb massage 	5 Hrs	20 Hrs	MK		
	The systemic effect of massage therapy <ul style="list-style-type: none"> a) Musculoskeletal system 					

	b) Nervous system c) Cardiovascular system d) Lymphatic system e) Integumentary system	2 Hrs	1 Hr	MK		
	Clinical implementation of the massage for the following Conditions a) Cardiac massage b) Massage for reducing the limb oedema. c) Massage for chronic headache d) Massage for insomnia e) Massage for post traumatic stiffness f) Massage for muscle spasm g) Massage for neurogenic pain h) Massage for soft tissue Contractures i) Massage for skin integrity	4 Hrs	6 Hrs		DK	

PRACTICAL

Skills included in sr. no. 2 to 13 above to be practiced on self & models

TEXT BOOKS

- 1] Principles of Exercise Therapy – Dena Gardiner
- 2] Massage, manipulation & traction – Sydney Litch
- 3] Therapeutic Exercise ----- do -----
- 4] Massage – Holly
- 5] Suspension Therapy in Rehabilitation – Margaret Hollis
- 6] Bio mechanics – Cynthia Norkin
- 7] Hydrotherapy – Duffield
- 8] Measurement of physical function – Cynthia Norkins.

REFERENCE BOOKS:

- 1] Therapeutic Exercise – Carolyn Kisner
- 2] Physiotherapy in Orthopaedic conditions – by Jayant Joshi [for the study of Basic Yogic postures]

SCHEME OF EXAMINATION

THEORY – UNIVERSITY EXAM: 80 MARKS + INT. ASSESSMENT: 20 MARKS (Total: 100 MARKS)

Section - A: MCQ, Q1]

Based on Single best answer [20 x 1 = 20 marks]

Time allotted: 20Min - To cover the must KNOW area of the subject

Section - B:

- Q2] BAQ, Answer Ten questions of 2 marks each [10 x 2 = 20 marks]
- Q3] SAQ, Answer any FOUR out of FIVE [4 x 5 = 20 marks]

Section – C: LAQ (2x10 = 20 marks)

- Q4] [Compulsory] Based on Bio-mechanics ----- 10 marks
- Q5] Based on any other topic ----- 10 marks

OR

- Q6] Based on any other topic ----- 10 marks

(Note: To avoid questions based on psychomotor domain)

PRACTICAL: 80 MARKS + INT.ASSESSMENT:20 MARKS

TOTAL: 100 MARKS

- 1- Long case –

Based on Massage / Goniometry ----- (35 marks)

i] Biomechanical principles / indications / contra indications / Documentation of findings etc ----- 20 marks

ii] Psychomotor & affective – skills ----- 15 marks

2 - a) Short Case - any one of the following ----- (20 marks)

Short case Based on passive movements / Relaxation / Limb / length – girth / Sensation / Reflex testing / Yoga posture / Aerobics / group exercise / warm ups / BP/ & Pulse / Chest Expansion / Respireate / Starting / Derived position etc.

b) Spots – Four spots based on therapeutics gymnasium etc.

5 minute per spot (4x5 = 20 marks)

3 - Journal ----- (5 marks)

INTERNAL ASSESSMENT THEORY (Round off to 20 MARKS)

Two exams - Terminal and Prelim examination of 80 marks each TOTAL -160 marks

I.A. to be calculated out of 20 marks

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KRISHNA INSTITUTE OF MEDICAL SCIENCES

“DEEMED TO BE UNIVERSITY”, KARAD.

KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-15: FUNDAMENTALS OF ELECTRO THERAPY

Medical Electronics and Superficial Thermal Agents

- DIDACTIC THEORY HOURS: 95 HOURS
- PRACTICAL HOURS: 105 HOURS

OBJECTIVES

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

- 1] Recall the physics principles & Laws of Electricity, Electro – magnetic spectrum, & ultra sound
- 2] Describe effects of environmental & man made electromagnetic field at the cellular level & risk factors on prolonged exposure.
- 3] Describe the main electrical supply, Electric shock –precautions.
- 4] Enumerate types & production of various Therapeutic electrical currents describe the panel diagrams of the machines.
- 5] Describe in brief, certain common electrical components such as transistors, valves, capacitors, transformers etc & the simple instruments used to test / calibrate these components [such as potentiometer, oscilloscope etc] of the circuitry, ; & will be able to identify such components.
- 6] Describe & identify various types of electrodes used in therapeutics, describe electrical skin resistance & significance of various media used to reduce skin resistance.
- 7] Acquire knowledge of various superficial thermal agents such as Paraffin wax bath, Cryotherapy, homemade remedies, etc; their physiological & therapeutic effects, Merits / demerits; & also acquire the skill of application

SYLLABUS:

Sr. No.	CONTENT	TEACHING HOURS		MUST KNOW	DESIRABLE TO KNOW	NICE TO KNOW
		Didactic 95	Practical 105			
1.	MEDICAL ELECTRONICS					
	ELECTRICITY(8 Hrs)					
	a. AC b. DC c. Modified AC d. Modified DC e. Uses of electricity in general f. Therapeutic uses	1 Hr 1 Hr 1 Hr 1 Hr 2 Hrs 2 Hrs	3 Hrs	MK MK MK MK MK MK		
	Components of electric circuits (5 Hrs)					
	a) Main supply b) Types of cables c) Fuse d) Regulators e) Choke coil	1 Hr 1 Hr 1 Hr 1 Hr 1 Hr	4 Hrs	MK MK MK MK MK		
	Devices used for rendering the current(6Hrs)					
	a) Condensers b) Rheostats c) Transformers d) Transistors e) Semiconductors& Oscilloscope	1 Hr 1 Hr 1 Hr 1 Hr 2 Hr	5 Hrs	MK MK MK MK MK		
	Setting up an electrotherapy department(2Hrs)	2 Hrs	2 Hrs		DK	
	Safety measures in electrotherapy department(2Hrs)	2 Hrs	2 Hrs	MK		
	Physics of Heat & Cold(8Hrs) a) Conduction of Heat b) Application of heat & cold & its physiological effects] Radiations a)Electromagnetic spectrum b)Laws governing radiations	2 Hrs 2 Hrs 2Hrs 2 Hrs	12 Hrs	MK MK MK MK		
	Magnetism(2Hrs) a) Properties of magnets b) Electromagnetic induction	1 Hr 1 Hr	5 Hrs		DK	

	Thermionic Emission(2Hrs) a) Diodes b) Triodes	1 Hr 1 Hr	2 Hrs			NK
	Medical Physics (1Hr)	1 Hr			DK	
2.	*Low & medium frequency currents					
	Low Frequency * Production, Physical principles, Panel diagram, Testing of apparatus					
	a) Various types of low frequency currents Faradic type current, galvanic, sinusoidal, didynamic & strong surged faradism, Russian currents.	4 Hrs	20 Hrs	MK		
	b) TENS and its types Indications Contraindications Therapeutic uses as a pain relieving modality	1 Hr 1 Hr 2 Hr	10 Hrs	MK MK MK		
3.	Medium frequency currents a) IFT Production Physical principles Testing of apparatus Beat frequency Indications Contraindications Therapeutic uses as a pain relieving modality b) Pain & pain modulation	1 Hr 1 Hr 1 Hr 1 Hr 1 Hr 1 Hr 1 Hr 2 Hr	10 Hrs	MK MK MK MK MK MK MK		NK
4.	*High Frequency Currents & Other Therapeutic Heating Modalities					
	Production, Physical principles, Panel diagram, Testing of apparatus -S.W.D -Ultra sound - U.V.R. - I.RR. -LASER.	5 Hrs 5 Hrs 5 Hrs 4 Hrs 4 Hrs	15 Hrs	MK MK MK MK MK		

5.	Therapeutic effects, uses-Merits / demerits, Indications/contraindications-skills of application	3 Hrs	15 Hrs	MK		
	Home remedies	3 Hrs		MK		
	Paraffin wax bath	3 Hrs		MK		
	Whirl pool	2 Hrs		MK		
	Contrast bath	4 Hrs		MK		
	Hydro-collator hot packs/cold packs Cryotherapy	4 Hrs		MK		

- **PRACTICALS:**

- 1] Panel diagrams – Identification of components – Testing the mains supply & Machines
- 2] Skills of application of thermal agents

- **TEXT BOOKS:**

1. Clayton 1s Electro therapy – 3rd & 10th ed,
2. Electro therapy explained – by Low & Read
3. Electro Therapy – by Kahn
4. Basics of Electrotherapy – Dr. Subhash Khatri

- **REFERENCE BOOK:**

Clinical Electro Therapy – by Nelson & Currier.

SCHEME OF EXAMINATION THEORY

80 MARKS, I.A: 20 MARKS

THEORY MODEL QUESTION PAPER [80 MARKS]

Section A-MCQ: Q-1]

- Based on Single best answer [20 x 1] -----20 marks

Section B:

- Q-2] BAQ: Answer TEN questions of 2 marks each [10 x 2] --- 20 marks
- Q-3] SAQ: Answer any FOUR out of FIVE [4 x 5] --- 20 marks

Section C LAQ: [2x10=20 marks]

- Q-4] based on superficial Thermal agents (Compulsory question) --- 10 marks
- * Q-5] Answer any one ----- 10 marks
- OR
- * Q-6] ----- 10 marks

(Note: *To avoid any question based on Psychomotor area)

PRACTICAL

- PRACTICAL : 80 MARKS +, I.A: 20 MARKS TOTAL = 100 MARKS

1] Long case based on superficial thermal agent ----- 35 marks

[Cognitive – Medical electronic area/ Physiological –Biophysical principles /

Therapeutic effects / Indications & contraindications] ----- [20 marks]

+ [Psychomotor + Affective skills] ----- [15 marks]

2] Spots

A] Identification of Electronic component & give one use with example OR panel

Diagram -- FOUR spots [5 minutes per spot] (4 x 5) ----- 20 marks

B] Testing of equipment TWO spot (10 x2) [10 minutes] ----- 20 marks

Journal ----- 05 marks

INTERNAL ASSESSMENT ----- 20 MARKS

THEORY (20 marks) two exams – Terminal and prelim examination of 80 marks each TOTAL -160 marks

Section-A-MCQ-Q-1] - based on Single best answer – [20x 1] ----- 20 marks

Section-B-SAQ -Q-2] - to answer any FIVE out of six—[5 x3] ----- 15 marks

Q-3] - to answer any THREE out of Four-[3 x 5] -----15 marks

Section-C-LAQ- Q-4] - based on superficial Thermal agents----- 15 marks

* Q-5] ----- 15 marks

OR

* Q-6] ----- 15 marks

To avoid any question based on psychomotor area

- I.A. to be calculated out of 20 marks



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KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

B.P.Th - II Year:

- 1. 3101 - 21: PHARMACOLOGY**
- 2. 3101 - 22: PATHOLOGY AND MICROBIOLOGY**
- 3. 3101 - 23: EXERCISE THERAPY**
- 4. 3101 - 24: ELECTRO THERAPY**
- 5. 3101 - 25: PSYCHOLOGY**

3101-21: PHARMACOLOGY

- ONLY DIDACTIC THEORY HOURS - 50 HOURS
- TOTAL HOURS: 50 HRS

OBJECTIVES:

At the end of the year, the candidate will be able to –

1. Describe Pharmacological effects of commonly used drugs by patients referred for Physiotherapy; list their adverse reactions, precautions to be taken & contra-Indications, - formulation & route of administration
2. Identify whether the pharmacological effect of the drug interferes with the Therapeutic response of Physiotherapy & vis-a-versa
3. Indicate the use of analgesics & anti-inflammatory agents with movement disorders with consideration of cost, efficiency, & safety for individual needs.
4. Get the awareness of other essential & commonly used drugs by patients-The bases for their use & common as well as serious adverse reactions.

A] MUST KNOW –

- i] Drugs described in topics 2 to 9;
- ii] Pharmacological effects & mechanism, Formulation, Route of administration, salient Parma-kinetic feature,
- iii] Adverse Reactions;
- iv] Precautions & contra-indications.

B] DESIRABLE

- a) Major Group of drugs described in topics 10, 11 & 12

- b) Bases of use in indicated conditions;
- c) Common & serious Adverse Reactions

C] NICE TO KNOW

- a) I] Haematenics
- b) II] Vaccines and sera

SYLLABUS:

Sr.no	Content	Didactic	Must know	Desirable to know	Nice to know
1.	General pharmacology Drug Pharmacokinetics –Pharmacology-adverse reaction-factors modifying drug effects	3 Hrs	MK		
2	Drug activity of CNS a) Introduction b) Alcohols +Sedatives & hypnotics c) Anti- convulsions d) Analgesics & antipyretics-specially Gout & R.A. e) Psycho Therapeutics f) General anesthetic+ local anesthetic	9 Hrs	MK		
3.	Drugs acting on peripheral nervous system Adrenergic Cholinergic (with special emphasis to dementia) Anticholinergics with special emphasis to postural hypotension and urinary incontinence	5 Hrs	MK		
4.	Drug therapy in Parkinson's	2 Hrs	MK		
5.	Skeletal muscle relaxants	2 Hrs	MK		
6.	Drugs acting on CVS a) Hypertension b) B-blockers c) Ca channel ACEI d) Blockers [prazosin] e) Diuretics f) CCF- g) Angina h) Antiarrhythmia+ shock i) Drug satisfying Homeostasis	6 Hrs	MK		
7.	Drugs acting on Respiratory system a) For upper respiratory tract infections-				

	sinusitis- cough, laryngitis, pharyngitis b) For Bronchial asthma c) For COPD- effects of prolonged drug administration	4 Hrs	MK		
8.	Insulin Oral anti-diabetic drugs	2 Hrs	MK		
9.	Chemo-therapy a) General principles b) Anti Tuberculosis- c) Anti-leprosy	3 Hrs	MK		
10.	Other Chemo Therapeutic drugs a) Sulfa drugs in urinary tract infection b) Tetra/chloro c) Penicillin d) cephalosporin e) aminoglycides f) Microlytic	2 Hrs		DK	
11.	Endocrine- a) Introduction, Thyroid & Antithyroid b) Estrogen + Progesterone c) Steroids + anabolic steroids	4 Hrs		DK	
12	Drugs in G.I.tract- a) Peptic ulcer +antiemetic b) Diarrhoea & constipation	3 Hrs		DK	
13	Haematinics, Vitamin B; Iron.	1 Hr			NK
14	Dermatological -- -Scabies-Psoriasis-Local antifungal	1 Hr		DK	
15	Vaccines & Sera	1 Hr			NK
16.	Vitamin –D, Calcium; Phosphorus, Magnesium	1 Hr	MK		
17.	Doping and Drug abuse in athelets	1Hr	MK		

TEXT BOOKS:

1. Pharmacology by Gaddum
2. Medical Pharmacology by Drill
3. Pharmacology principle of Medical practice – by Krantx, & Carr
4. Pharmacological basis of Therapeutics – by Goodman, L.S. Gilman A

SCHEME OF EXAMINATION

[Theory – 40 marks + Internal assessment – 10 marks]

Section A

Q-1, MCQ - Based on single best answer in MUST KNOW area –
(10 MCQ carrying 1 mark each = 10 marks)

Section B

Q-2, BAQ - To answer any FIVE out of SIX [5 X 2] -- 10 marks

Q-3, SAQ - To answer any TWO out of THREE [2 x 5] -- 10 marks

Section C

Q - 4, LAQ – To answer ONE out of TWO [1x10] -- 10 marks

Emphasis should be given to the drugs related to Musculoskeletal/Psycho-
Neurological / Cardio-Vascular / Respiratory conditions / analgesics & anti-
inflammatory conditions

INTERNAL ASSESSMENT – Two papers – Terminal and Prelim examination of 40 marks
each. TOTAL 80 MARKS

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Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-22: PATHOLOGY AND MICROBIOLOGY

PATHOLOGY

- ONLY DIDACTIC THEORY HOURS – 50 HOURS
- TOTAL: 50 HRS

OBJECTIVES

At the end of the year, the student will be able to-

1. Acquire the knowledge of concepts of cell injury & changes produced thereby in different tissues & organs-; capacity of the body in healing process
2. Recall the Etiology-pathogenesis, the pathological effects & the clinical-pathological correlation of common infections & non-infectious diseases
3. Acquire the knowledge of concepts of neoplasia with reference to the Etiology, gross & microscopic features, diagnosis, & prognosis in different tissues, & organs of the body
4. Correlate normal & altered morphology of different organ systems in different diseases needed for understanding disease process & their clinical significance [with special emphasis to neuro, musculo-skeletal & cardio-respiratory systems]
5. Acquire knowledge of common immunological disorders & their resultant effects on the human body.
6. Understand in brief, about the Hematological diseases & investigations necessary to diagnose them & determine their prognosis

Sr.no	Subject	Hrs per week	Total Hrs
01	Pathology	2 Hrs	50 Hrs

	Content	Teaching Hrs.	Must	Desirabl	Nice
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		Didactic	know	e to know	to know
1.	<p>General Pathology-</p> <p>❖ Cell injury-causes, mechanism & toxic injuries with special reference to Physical, Chemical, & ionizing radiation</p> <p>a) Reversible injury [degeneration]-types-morphology, swelling, hyaline, fatty changes,</p> <p>b) Intra- cellular accumulation-hyaline mucin</p> <p>c) Irreversible cell injury-types of necrosis- apoptosis –calcification - dystrophic & metastasis</p> <p>d) Extra-cellular accumulation-amyloidosis, calcification-Pathogenesis-morphology</p>	5 Hrs	MK		
2	<p>Inflammation & Repair-</p> <p>a) Acute inflammation-features, causes, vascular & cellular events,</p> <p>b) Morphologic variations,</p> <p>c) Inflammatory cells & mediators,</p> <p>d) CHronic inflammation - causes, types, non-specific & granulomatous with examples</p> <p>e) Wound healing by primary & secondary union factors promoting & delaying healing process.</p> <p>f) Healing at various sites-including-bones, nerve, & muscle</p> <p>g) Regeneration & repair</p>	2 Hrs	MK		

3.	<p>Immuno-pathology- [basic concepts]-</p> <p>a) Immune system:-organization-cells-antibodies- regulation of immune responses,</p> <p>b) Hyper-sensitivity,</p> <p>c) Secondary immuno-deficiency including HIV,Organ transplantation</p>	2 Hrs		NK	
4.	<p>Circulatory disturbances-</p> <p>a) Edema-pathogenesis-types-translates/exudates,</p> <p>b) Chronic venous congestion-lung, liver, spleen,</p> <p>c) Thrombosis-formation-fate- effects,</p> <p>d) Embolism-types-clinical effects,</p> <p>e) Infarction-types-common sites</p> <p>f) Gangrenes-types-actiopathogenesis</p> <p>g) Shock-pathogenesis,types, morphologic changes</p>	3 Hrs	MK		
5.	<p>Deficiency disorders-</p> <p>Vitamin A, B, C, D, E</p>	2 Hrs		NK	
6.	<p>Growth Disturbance-</p> <p>a) Atrophy-malformation, agenesis, dysplasia,</p> <p>b) Neoplasia calcification, histogenesis, biologic behaviour, difference between benign & malignant tumour</p> <p>c) Malignant neoplasm -grades-stages-local & distal spread,</p> <p>d) Carcinogenesis-environmental carcinogens</p> <p>e) Chemical, Occupational, heredity, vira,</p> <p>f) Precancerous lesions & Ca in situ</p>	3 Hrs	MK		

	g) Tumor & host interactions-systemic effects-metastatic or direct spread of tumors affecting bones, spinal cord,leading to paraplegia, etc.				
7.	Medical Genetics- [In Brief]	1 Hr			DK
8.	<p>Specific Pathology-</p> <ul style="list-style-type: none"> • CVS <ul style="list-style-type: none"> a) Arteriosclerosis- Ischaemic heart diseases-myocardial b) Infarction-Pathogenesis /Pathology c) Hypertension d) C.C.F. e) R H.D. f) Peripheral vascular diseases • Respiratory <ul style="list-style-type: none"> a) COPD, b) Pneumonia [lobar, broncho, viral], c) T.B.-primary, secondary-morphologic types, d) Pleuritis, complications, e) Lung collapse- atelectasis • Neuropathology <ul style="list-style-type: none"> a) Reaction of nervous tissue to injury-infection-& ischaemia b) Pyogenic meningitis, TBM, Viral, c) Cerebro-vascular diseases-arteriosclerosis- THrombosis, embolism, aneurysm, hypoxia, infarction-& hemorrhage d) Effects of Hypotension on CNS. e) Coma f) Polio myelitis- Leprosy- Demyelinating diseases - Parkinsonism-Cerebral palsy- 	15 Hrs	MK		

	<p>metachromatic leucodystrophy- Dementia-Hemiplegia /paraplegia— Pathogenesis & pathology of Wilson`s disease</p> <p>g) GBS h) SOL- [in brief] i) Peripheral nerve injury. Applied pathology for stroke</p>				
9.	Muscle diseases-Muscular dystrophy-hypertrophy- Pseudo-hypertrophy-atrophy-Polio- myelitis Myositis ossificance, necrosis, regeneration-Myotonia	4 Hrs	MK		
10.	Neuro –muscular junction-Myasthenia gravis- Myasthenic syndrome	2 Hrs	MK		
11.	Urinary –commonly encountered in paralytic bladder, Common urinary tract infections [brief]- urinary calculi.	2 Hrs			DK
12	Endocrine-Hyperthyroidism-Diabetes	3 Hrs		NK	
13	Hepatic diseases Cirrhosis-emphasis to systemic effects of portal hypertension	2 Hrs		NK	
14	Skin-Melanin pigment disorders- Vitiligo- Tinea versicolor-Psoriasis-Bacterial/fungal infections- cutaneous TB, -Scleroderma, SLE, Leprosy Alopacia.	2 Hrs			DK
15	*Clinical pathology- [including Demonstrations] basic bedside laboratory test and basic microscopic studies- a. Anaemia- [deficiency]-T.C./D.C. / Eosinophilia, E.S.R., C.P.K. b. Muscle/skin/nerve biopsy c. Microscopic appearance of d. Muscle necrosis-fatty infiltration e. Lab investigation in liver & renal failure	2 Hrs	MK		

MICROBIOLOGY

- ONLY DIDACTIC THEORY HOURS - 30 HOURS

OBJECTIVES:

At the end of the course, the candidate will have sound knowledge of the agent responsible for causing human infections, pertaining to C.N.S, C.V.S. musculoskeletal, & Respiratory system.

Sr. no	Content	Teaching hours	Must know	Desirable to know	Nice to know
1.	General microbiology- i) Introduction ii) Scope	1 Hr	MK		
2.	Classification of Micro-organisms & morphology of Bacteria	1 Hr	MK		
3.	Sterilization & disinfections –[basic concepts] a) Hospital acquired infection, universal safety precautions, waste disposal	4 Hrs		DK	
4.	Immunology a) Antigen-antibody— reaction-& application for diagnosis; b) Immune response-normal/abnormal; c) Innate immunity, & acquired immunity [vaccination] d) Hyper-sensitivity & auto-immunity	5Hrs	MK		
5.	Laboratory Diagnosis of Infection	3 Hrs			NK
6.	Bacteriology a) Infection caused by gram +ve cocci; Gas gangrene-clostridium-Diphtheria b) Infection caused by gram –ve cocci- Septicemia-cholera-Shock-Typhoid-	7Hrs	MK		

	diarrhoea; c) Mycobacterial infection- tuberculosis-Leprosy- Atypical Micobacterium; d) Syphillis-morphology & pathogenesis [VDRL]				
7	Viruses a) Introduction & general properties, b) HIV, c) Hepatitis, d) Polio, measles, congenital viral infections, Rubella, CMV, Herpes	3 Hrs		DK	
8	Mycology Mycetoma- Aspergilosis- candidiasis	1 Hr			NK
9	Parasites affecting C.N.S. a) Malaria- Filaria Toxoplasma - Cystisarcosis & echinococcus	2 Hrs	MK		
10	Applied Microbiology As relevant to diseases involving Bones, Joints, Nerves, Muscles, skin & brain. Cardiopulmonary system & burns.	3 Hrs	MK		

TEXT BOOK

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

SCHEME OF EXAMINATION (THEORY ONLY)

Pathology 40 marks + Microbiology 40 marks = Total 80 marks

+

Internal Assessment 20 marks (10 each subject) = Total 100 marks

- #Emphasis to be given to topics related to Musculo Skeletal / Neurological /
Cardiovascular / Respiratory conditions & Wound / Ulcers /

Section A - Q-1, MCQ (Pathology & Microbiology)

Based on Single best answer in MUST KNOW area (20 Marks)

Based on Pathology [1 x 10 Questions] ----- 10 marks

Based on Microbiology [1 x 10 Questions] ----- 10 marks

Section B - PATHOLOGY

- Q-2, BAQ - To answer 5 questions of 2 marks each --- (5x2=10 marks)
- Q-3, SAQ - To answer Any TWO out of THREE of 5 marks each --- (2x5=10 marks)
- Q-4, LAQ - To answer any ONE [1 x 10=10 marks] ----- 10 marks

Section C - MICROBIOLOGY

- Q-5, BAQ To answer 5 questions of 2 marks each --- (5x2=10 marks)
- Q-6, SAQ - To answer Any TWO out of THREE of 5 marks each --- (2x5=10 marks)
- Q-7 LAQ - To answer any ONE [1 x 10=10 marks] ----- 10 marks

INTERNAL ASSESSMENT - Two exams -

Terminal and Prelim of 80 marks each - Total 160 marks

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KRISHNA INSTITUTE OF MEDICAL SCIENCES

“DEEMED TO BE UNIVERSITY”, KARAD.

KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101- 23: EXERCISE THERAPY

- DIDACTIC THEORY HOURS - 95HOURS
- PRACTICAL HOURS - 205HOURS
- TOTAL - 300 HOURS

OBJECTIVES

At the end of the year, the candidate will be able to-

1. Analyze Normal human posture [static & dynamic], & various Normal Musculo skeletal movements during Gait, activities of daily living, & also the normal describe the movement of the Thorax during breathing; in terms of Biomechanical & Physiological Principles
2. Apply the biomechanical principles for the efficacy in the assessment methods for mobility, muscle strength
3. Describe the Biophysical properties of connective tissue, & effect of mechanical loading, & factors which influence the Muscle strength, & mobility of articular & periarticular soft tissues
4. Describe the physiological effects, Therapeutic uses, merits/demerits of various exercise modes.
5. Demonstrate various therapeutic exercises on self & also acquire the skill of application on Models
6. Acquire the skill of assessment of isolated & group muscle strength, & Range of motion of the joints subjectively & objectively

Sr. no	Content	Teaching hours		Must know	Desire to know	Nice to know
		Didactic	practical			
1.	Biomechanics of joints of the skeletal system [spine, extremities, T.M. joint & Thoracic cage	25 Hrs	40 Hrs	MK		
2.	Kinetics & Kinematics of various activities of daily living-e.g. Supine to sitting, sitting to standing, squatting, climbing up & down, lifting, pulling, pushing, overhead activities, walking running, jogging	5 Hrs	10 Hrs		DK	
3.	Assessment of muscle strength, [group/individual]-subjective & objective methods-1/10 RM	12 Hrs	25 Hrs	MK		

	dynamometry					
	-Factors that influence the strength of the normal muscle/ hypertrophy,- recruitment of motor units, change after training / type of contraction Isometric /Isotonic / Isokinetic Eccentric					
	-General principles of strength training- :overload / intensity/Motivation /learning/ duration/ frequency /reversibility/specificity					
4.	Bio-physical properties of connective tissue,[contractile & non-contractile] elasticity /Plasticity-response to sudden /slow /sustained loading-strain curve-Creep-Hysteresis	7 Hrs	20 Hrs	MK		
	Mobilization-Methods-stretching /traction [cervical & lumbar] /Hold – Relax method- rhythmic movements/oscillations					
	Mobilization of muscles & Fasciae-- around the shoulder/elbow/wrist /Hip/knee/ ankle/ Spine [dorso-lumbar fascia]					
5.	Methods of Assessment of the Posture-Sitting /standing/ Lying/Physiological deviations of the posture	5 Hrs	10 Hrs	MK		
6.	Methods of assessment of Gait-measurements for walking aids-axillary /elbow crutches, walking sticks –Pre-crutch training, crutch gaits	5 Hrs	10 Hrs	MK		
7.	Co-ordination & Balance-neural control-Methods of co-ordination exercises - Frenkels exercises	5 Hrs	10 Hrs	MK		
8.	Principles of P.N.F.[no practical]	3 Hrs			DK	
9.	Breathing exercises- Goals -Inspiratory-Expiratory/Segmental- Forced expiratory -coughing-huffing/ Modified Inspiratory / Active cycle of breathing	10 Hrs	20 Hrs	MK		
10.	Bronchial Hygiene-postural drainage positions/ humidification	10 Hrs	20 Hrs	MK		
11.	Principles of Home programme & Ergonomic advise	5 Hrs	9 Hrs			NK
12.	Functional Re-education.	5 Hrs	10 Hrs	MK		
	Functional motor skills, e-Motor skills to function independently in ADL					
	Mobility, Bed /Wheel chair mobility, ambulation.					
13.	Application of mat exercises [to practice on self & on models	6 Hrs	12 Hrs	MK		
14.	6 Minute walk test - on models (only	2Hrs	4 Hrs		DK	

technique)					
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TEXT BOOKS

1. Progressive resisted exercises-by Margaret Hollis,
2. Therapeutic Exercise by Carolyn Kisner
3. Kinesiology by Cynthia Norkins
4. PNF - Knott and Voss

REFERENCE BOOKS

1. Therapeutic exercise by Basmijjan & Wolf
2. Muscle testing by Daniel Kendall
3. Clinical evaluation - Lacote (for Isolated assessment of abdominal muscles)
4. Muscle Stretching & Auto-stretching- Olaf Evjenth
5. Orthopedic Evaluation - Magee (only for assessment of posture)

SCHEME OF EXAMINATION

- THEORY - 80 MARKS + I.A - 20 MARKS TOTAL 100 MARKS
 - PRACTICAL / LAB - 80 MARKS + I.A - 20 MARKS TOTAL 100 MARKS
- Theory Model Question Paper

SECTION A - Q1] MCQ (20 marks)

- Based on Single best answer [20 x 1=20 marks]
- [To include all MUST KNOW areas]

SECTION B - BAQ (30 marks)

- Q-2] To answer 10 questions of 2 marks each [10 x 2=10 marks] [must know area]
 - Q-3] To answer any FOUR out of FIVE [4 x 5=20 marks]
- [Desirable & Nice to know area]

SECTION C – LAQ (20 marks)

- Q-4]
 - a) One compulsory question of 10 marks
 - b) Answer any one question out of two of 10 marks

PRACTICAL / LABORATORY (80 marks)

1. Long Case – Strength / ROM / Suspension (35 marks)
2. Two Short Case – Breathing exercises / Functional re-education / Mat exercise / Crutch walking (20 x 2 = 40 marks)
3. Journal (5 marks)

- INTERNAL ASSESSMENT – THEORY
Two papers - Terminal and Prelim examination of 80 marks each Total - 160 marks
- INTERNAL EXAM - PRACTICAL
Two exams - Terminal and Prelim examination of 80 marks each Total - 160 marks
- I.A. to be calculated out of 20 marks.

	pain THreshold & pain tolerance				DK DK DK	
				MK		
2.	Medium frequency currents-Beat frequency-types-Endovac attachment- advantage of I.F.T. over low frequency currents	16 Hrs	25 Hrs	MK		
3.	Bio-Feedback-methods.	5 Hrs	10 Hrs		DK	
4.	High frequency Thermal agents-- S.W.D.-types-continuous /Pulsed – types of electrodes	19 Hrs	25 Hrs	MK		
5.	Therapeutic Ultra sound-pulsed/continuous	10 Hrs	25 Hrs	MK		
6.	Actino Therapy <ul style="list-style-type: none"> • Radiant heat [I.R.] • U.V.R.-a/b/c types-Test dose-, local & general application • Laser-He/Ne, & I.R.- combination 	9 Hrs	40 Hrs			NK
7.	Care of wound- application of Therapeutic currents, Ultrasound, U.V.R. & LASER	5 Hrs	15 Hrs			NK
8.	Compression cryotherapy	1 Hr	MK			
9.	Pneumatic compression	1 Hr	MK			
10.	Cryotherapy-cold whirlpool,cryocuff,cold spray,cryo stretch,cryokinetics in cryotherapy	4 Hrs	MK			

- **Text Books:**

1. Clayton's Electro Therapy – IXth edition.
2. Electro Therapy Explained – By Low & Read
3. Electro Therapy – By Kahn,
4. Therapeutic Electricity – By Sydeny Litch

- **Reference Books:**

Clinical Electro Therapy – By Nelson & Currier

SCHEME OF EXAMINATION

THEORY – 80 MARKS + I.A. – 20 MARKS; TOTAL 100 MARKS

PRACTICAL / LAB – 80 MARKS; I.A. – 20 MARKS TOTAL 100 MARKS

THEORY MODEL QUESTION PAPER

Section A - MCQ - Q1]

- Based on Single best answer [20 x 1 = 20 marks]
[To include all MUST KNOW areas]

Section B

- Q-2] BAQ: Answer Ten questions of 2 marks each [10 x 2= 20 marks]
[Must know area]
- Q-3] SAQ: Answer any Four out of Five [4 x 5=20 marks] Based on Actinotherapy, Low frequency currents, Basic physics, Ionotophoresis.

Section C (2x10=20 marks)

- Q-4] LAQ
 - a] Answer one compulsory question - 10 marks
Should be based on High frequency modes
 - b] Answer any one question out of two - 10 marks
Should be based on Low / Medium frequency currents. LAQ should give break up of 10 marks - e.g. [2 +3+5]

PRACTICAL / LABORATORY (80 marks)

1. Long Case – On model Motor points / U.V.R. Test Dose. Faradism under pressures (35 marks)
 2. Two Short Case - One based on Low or medium Freq current Second based on high Freq. current / Actinotherapeuticts (20 x 2 = 40 marks)
 3. Journal (5 marks)
- INTERNAL ASSESSMENT THEORY Two papers - Terminal and Prelim examination of 80 marks each. Total - 160 marks
 - Internal Assessment to be calculated out of 20 marks.

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KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-25: PSYCHOLOGY

- Only Didactic Theory Hours – 50 Hours
- Total Hours: 50 Hrs

OBJECTIVES

Sr.no	Content	Didactic	Must know	Desirable to know	Nice to know
1.	GENERAL PSYCHOLOGY Section I				
	History and field of psychology	2 Hrs			NK
	The science of psychology and inter disciplinary approach	1Hr		DK	
	Biological foundations of behavior, heredity, environment, logical bases for development.	2Hrs	MK		
	Feelings and emotions	4Hrs	MK		
	Motivation, conflict, adjustment	6 Hrs	MK		
	Perception, sensory basis for perception	5 Hrs	MK		
	Thinking	5Hrs	MK		
	Communication and language	2 Hrs	MK		
	Personality	2 Hrs	MK		
	Individual in society	1 Hr	MK		
	Developmental psychology i) factors influencing growth and development ii) Describe in detail about child, adolescent and adulthood and geriatric psychology.	2 Hrs	MK		
I.	Industrial psychology			DK	

	i) efficiency in production ii) Industrial and highway accidents- causes of accidents, personal and environmental accident prevention.	2Hrs	MK		
2.	Section 2:				
	Learning and education learning basic principles, human learning and retention, the cognition process. historical background of learning and education	3 Hrs	MK		NK
	Theories of Learning and education	1 Hr	MK		
	Nature of learning	1 Hr	MK		
	Types of education	1 Hr	MK		
	Functions and aims of education	1 Hr	MK		
	Education as a necessity to life	1 Hr	MK		
	Motivation factor in learning process and education	1 Hr	MK		
	Modern trends in learning and education	1 Hr	MK		
	Memory	1 Hr	MK		

TEXT BOOKS:

1. Introduction to Psychology- by Clifford Morgan, Richard King, John Weisz, John Schopler

SCHEME OF EXAMINATION

[Theory – 40 marks + Internal assessment – 10 marks]

Section A: Q-1, MCQ

Based on single best answer in MUST KNOW area (10x1= 10 marks)

Section B:

Q-2, BAQ To answer any FIVE out of six [5 X 2 = 10 marks]

Q-3, SAQ To answer TWO out of THREE [2 x 5 = 10 marks]

Q-4, LAQ To answer ONE out of TWO [1 x 10 = 10 marks]

INTERNAL ASSESSMENT – Two papers –

Terminal and Prelim examination of 40 marks each. TOTAL 80 MARKS

IA calculated for 10 marks.

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KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

B.P.Th: III Year

- 1. 3101 - 31: SURGERY AND ORTHOPAEDICS**
- 2. 3101 - 32: MEDICINE**
- 3. 3101 - 33: OBSTRETICS AND GYNAECOLOGY**
- 4. 3101 - 34: PHYSICAL DIAGNOSIS AND MANIPULATIVE SKILLS**
- 5. 3101 - 35: COMMUNITY HEALTH, SOCIOLOGY AND BIOSTATISTICS**
- 6. 3101 - 36: PSYCHIATRY**
- 7. 3101 - 37: PEDIATRICS**

3101-31: SURGERY AND ORTHOPAEDICS

- General Surgery: 50 Hours
- (Didactic – 40 Hrs + Clinical 10 Hours)
- Orthopaedics: 80 Hours
- (Didactic - 55 Hrs + Clinical - 25 Hrs)
- Total Hours: 130 Hours

OBJECTIVES

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

1. Describe the effects of surgical trauma & Anesthesia in general.
2. Classify, clinically evaluate & describe the surgical management in brief in
3. Wound & ulcers b. Burns c. Head injuries
4. Describe pre-operative evaluation, surgical indications & various surgical approaches in various abdominal / thoracic / peripheral vascular conditions.
5. Recall the surgical approaches in the form of line diagram & will be able to describe the components of soft tissues cut to reach the target tissue & the possible post operative complications in movement.
6. Be able to read & interpret findings of the X ray-chest

Sr. No	Content	Teaching hours		Must know	Desirable to know	Nice to know
		Didactic	Practical's			
1.	General (13 Hrs)			MK		
	Effect of Anesthesia & surgical trauma, Hemorrhage, Shock, Water & Electrolyte imbalance	1 Hr				
	Inflammation – acute & chronic-signs, symptoms, complications & management	1 Hr				
	Wounds / ulcers – classification, healing process, management	2 Hrs				
	Common abdominal surgeries for G.I. tract, Genito-urinary system Scar	2 Hrs				

	during surgical approach through abdominal wall. Scar management in brief					
	Renal transplant surgery	2 Hrs				
	Radical mastectomy – complications & management	1 Hr				
	Amputation – types, sites, complications & management	1 Hr				
	Burns – causes, complications, classification & management	3 Hrs				
2.	Neuro Surgery: (6 Hrs)			MK		
	Head Injury – management	2 Hr				
	Intra cranial & Spinal tumors	2 Hr				
	Surgeries of Head & neck in Neurosurgical conditions & postoperative care	2 Hrs				
3.	Cardio vascular – thoracic surgery:	6 Hrs		MK		
	Surgical approach					
	Post operative complications & management in Thoractomy, Thoracoplasty, Lobectomy, pneumonectomy, Decortication, CABG, Valvular Surgery, Congenital Heart Disease Surgeries, and Surgery for Peripheral Vascular Disease.					
4.	E.N.T. Surgery:	5 Hrs			DK	
	Upper respiratory track surgery & post operative care.	1 Hr				
	Tracheostomy – indications, surgical approach & management.	1Hr				
	Surgery for cancer – indications & postoperative care.	1Hr				
	Surgical procedures in VII the nerve palsy.	1Hr				
	Vertigo	1Hr				
5.	Ophthalmic Surgery: Surgeries for III, IV & VI cranial nerve palsy.	1 Hr				NK
6.	Plastic Surgery:	9 Hrs		MK		
	Skin grafts & flaps – Types, indications with special emphasis to burns, wounds, ulcers.	2 Hrs				
	Tendon transfers, with special emphasis to hand, foot & facial paralysis.	2 Hrs				
	Keloid & Hypertrophied scar management.	1 Hr				
	Reconstructive surgery of peripheral nerves.	2 Hrs				

	Micro vascular surgery.	2 Hrs				
7.	Clinical:(10Hrs)	Clinical Hrs	MK/DK/NK			
	Evaluation / presentation and recording of one case each in burns, wound & ulcer, Head Injury case, peripheral vascular condition, post Radical mastectomy, post thoracic surgery, post abdominal surgery.	4 Hrs	MK			
	Auscultation & its interpretation with special emphasis to Reading & interpretation of the X-ray chest. OBSERVATION – one abdominal & one thoracic surgery & one surgery of skin graft / flap.	3 Hrs	MK			
	Oncology surgery: a) Mastectomy b) Lung cancer c) Head and neck cancer d) Cancer in female reproductive system e) Oral cancers f) Liver cancer	3 Hrs	MK MK MK MK DK NK			

TEXT BOOKS

1. Under Graduate Surgery by Nan.
2. Bailey & Love's short practice of Surgery – 21st Ed.

ORTHOPAEDICS

TOTAL: 80 HOURS (DIDACTIC -55 HOURS + CLINICAL – 25 HOURS)

OBJECTIVES

At the end of the course, the candidate will

1. Be able to discuss the Patho physiology, clinical manifestations & conservative / surgical management of various traumatic & cold cases of the Musculoskeletal Conditions.
2. Gain the skill of clinical examination & interpretation of the preoperative cold cases & all the post-operative cases.
3. Salient features of the X-ray of the spine & Extremities
4. Pathological / biochemical studies pertaining to Orthopedic conditions.
5. Will be able to correlate the radiological findings with the clinical findings.

Sr. no	Content	Teaching hours	Must know	Desirable to know	Nice to know
		Didactic			

1.	Post trauma Pathology, clinical manifestations, healing process in bone & intra articular & extra articular soft tissues.	2 Hrs	MK		
2.	Fractures & dislocations of upper extremity & lower extremity a) Classification b) Conservative treatment c) Surgical intervention – • Surgical approach • Soft tissue section / repair • Internal / external fixation / artHroplasty • Post operative complications • Post operative management & management of complications.	12 Hrs	MK		
3.	Fractures & dislocations of spine, thoracic cage, shoulder girdle & pelvis a) Conservative treatment b) Surgical intervention Surgical approach • Soft tissue section / repair • Internal / external fixation /artHro plasty • Post operative complications • Post operative management & management of complications.	5 Hrs	MK		
4.	Management of Metabolic disorders. a. Osteoporosis b. Osteomalacia c. Osteopenia d. Rickets.	3Hrs	MK		
5.	Brachial Plexus / Lumbo Sacral Plexus & Peripheral nerve injuries – sites, management.	2Hrs	MK		
6.	Deformities of the spine Scoliosis / Kyphosis Spondylosis, Spinal cord compression, Sacralization, Traumatic deformities.	4Hrs	MK		
7.	Deformities of extremities like Varus/Valgus, Torsion,	2Hrs	MK		

	Deformities of hands & feet.				
8.	Congenital Malformation Spina Bifida, Meningocele meningocele.	2Hrs	MK		
9.	Vascular Disorders like Avascular Necrosis, Necrosis, Perthe's Disease, Compartmental Syndrome.	3Hrs	MK		
10.	Reconstructive surgery in Polio & Cerebral Palsy	1 Hr	MK		
11.	Inflammatory / Infectious diseases of the bone & joints e.g. T.B, Osteomyelitis	2Hrs		DK	
12.	Reconstructive surgery for bone lengthening	1Hr			NK
13.	Tumors of bone & management.	1 Hr			NK
14.	Surgical intervention for Arthritis like O.A., RA, Ankylosing Spondylitis	2 Hrs	MK		
15.	Reconstructive surgery in soft tissue lesions of Shoulder, Knee & Ankle	2 Hrs		DK	
16.	A etiology of Back Pain & surgical management	2 Hrs	MK		
17.	Common Sports injuries / overuse injuries & management.	2 Hrs	MK		
18.	Traumatic Amputation & management	1 Hr	MK		
19.	Hand injury & management	1 Hr		DK	
*20	Soft tissue and traumatic injuries: a. Introduction ,Anatomy & physiology general description, grade of injury and management of injuries of i. Ligaments, Bursae, Fascia ii. Muscles & Tendons iii. Muscles and tendons injuries of upper and lower limb b. Cervicolumbar injuries ,Whiplash of the cervical spine c. Crush injuries of hand & foot	4 Hrs	MK		
21	X-rays of extremities & spine	1 Hr	MK		

CLINICAL: 25 Hrs

Independent clinical orthopedic evaluation presentation & recording of

Sr.	Clinical Contents	Clinical Hrs
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no		
1	One acute soft tissue lesion [including nerve injury]	8 Hrs
2	2 cases of degenerative artHritis of extremity joint	2 Hrs
3	2 degenerative artHritis of spine.	2 Hrs
4	One case of acute P.I.D.	3 Hrs
5	2 cHronic backaches	4 Hrs
6	1 postoperative case of fractures of extremities.	2 Hrs
7	One traumatic paraplegia / quadriplegia	4 Hrs

OBSERVATION:

At least 2 surgeries of # internal fixation, one knee/hip replacement & Reconstructive surgery of the tendons.

TEXT BOOKS:

1. Adam's outline of fractures – 8th edn
2. Adams outline of Orthopaedics – 8th edn
3. Apley's textbook of Orthopaedics

INTERNAL ASSESSMENT: SCHEME OF EXAMINATION

- | | |
|--|----------|
| 1. General Surgery–Theory –50Marks +Viva based on clinical –25 Marks | 75 Marks |
| 2. Plastic Surgery – Theory | 25 Marks |
| 3. Orthopedics – Theory | 50 Marks |
| 4. Ward Examination in Clinical Orthopedics | 50 Marks |

Total	200 Marks
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SCHEME OF EXAMINATION (THEORY ONLY)

SURGERY 40 MARKS + ORTHOPAEDICS 40 MARKS = TOTAL 80 MARKS

+

INTERNAL ASSESSMENT 20 MARKS (10 EACH SUBJECT) = TOTAL 100 MARKS

- Emphasis to be given to MUST KNOW AREAS

Section A - Q-1, MCQ (Surgery & Orthopedics)

Based on Single best answer in MUST KNOW area (20 Marks)

Based on Surgery [1 x 10 Questions] ----- 10 marks

Based on Orthopedics [1 x 10 Questions] ----- 10 marks

SECTION B - SURGERY

- Q-2, BAQ - To answer FIVE out of SIX questions of 2 marks each ----
(5x2=10 marks)
- Q-3, SAQ - To answer Any TWO out of THREE of 5 marks each ----(2x5=10 marks)
- Q-4, LAQ - To answer any ONE out of TWO [1 x 10=10 marks] ----
(1x10= 10 marks)

SECTION C - ORTHOPAEDICS

- Q-5, BAQ - To answer FIVE out of SIX questions of 2 marks each ----
(5x2=10 marks)
- Q-6, SAQ - To answer Any TWO out of THREE of 5 marks each ----(2x5=10 marks)
- Q-7, LAQ - To answer any ONE out of TWO [1 x 10=10 marks] ----
(1x10= 10 marks)

INTERNAL ASSESSMENT - Two Exams - Terminal and Prelim of 80 marks each - Total 160 marks. (IA rounded of to 10 Marks each subject)

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KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-32: MEDICINE

- Didactic Theory Hours Only- 75 Hours
- Clinical - 15 Hours
- Total - 90 Hours
- Cardio-Vascular & Pulmonary Medicine Didactic 29 Hrs
- Neurology Didactic 31 Hrs
- General Medicine, Rheumatology & Gerontology Didactic 15 Hrs
- Clinical 15 Hrs

OBJECTIVES

At the end of the course, the candidate will -

1. Be able to describe Etiology, Pathophysiology, Signs & Symptoms & Management of the various Endocrinal, Metabolic, Geriatric & Nutrition Deficiency conditions.
2. Be able to describe Etiology, Pathophysiology, Signs & Symptoms, Clinical Evaluation & Management of the various Rheumatological Cardiovascular, Respiratory & Neurological Conditions.
3. Acquire skill of clinical examination of Musculoskeletal, Pulmonary, Cardio-vascular & Neurological System.
4. Be able to interpret auscultation findings with special emphasis to pulmonary system, Chest X-ray, Blood gas analysis, P.F.T. findings, Blood studies done for Neurological & Rheumatological conditions.
5. Be able to describe the principles of Management at the Medical Intensive Care Unit.

Sr. no	Content	Teaching hours		Must know	Desirable to know	Nice to know
		Didactic	Practical			
1.	CARDIO-VASULAR & RESPIRATORY MEDICINE	29 Hrs				
	Cardio-vascular diseases	12 Hrs				
	Hypertension – systemic	1 Hr		MK		
	I.H.D. – Myocardial infarction	2 Hrs		MK		
	Arrhythmia – classification	1 Hr				NK
	Valvular Heart Disease – i) Congenital ii) Acquired	3 Hrs		MK		
	Rheumatic Fever and Infective Endo Carditis	2 Hrs		MK		
	Congenital Heart Disease	1 Hr		MK		

	Geriatric Cardio Vascular Problems & management	1 Hr			DK
	ECG – Normal & Variations due to ischemia & infarction	1 Hr		MK	
2.	Diseases of the respiratory system (17Hrs)			MK	
	Common Infectious diseases like Tuberculosis Pneumonia, Lung Abscess, Bronchiectasis	3 Hrs		MK	
	Diseases of Pleura like Pleural Effusion, Pneumothorax, Hydropneumothorax, Empyema	3 Hrs		MK	
	Occupational lung diseases and Interstitial Lung Diseases: Silicosis Asbestosis, Pneumoconiosis, Brucellosis, Farmer's Lung interstitial diseases	2 Hrs		MK	
	Obstructive Lung Diseases like Bronchitis, Emphysema, Bronchial Asthma, Cystic Fibrosis	3 Hrs		MK	
	Geriatric respiratory problems & management	1 Hrs		MK	
	Intensive Medical Unit – Infrastructure & Treatment	2 Hrs		MK	
	Introduction of clinical examination – Breath sounds / X ray chest /Blood gas analysis / P.F.T.	3Hrs		MK	
3.	NEUROLOGY	31 Hrs		MK	
	Circulation of the brain & spinal cord	1 Hrs		MK	
	Cerebro – vascular accidents – THrombosis, Embolism, Haemorrhage	1 Hrs		MK	
	Stroke – Level of Lesion & Management	1 Hrs		MK	
	Extra Pyramidal lesions – Basal Ganglia <ul style="list-style-type: none"> • Parkinsonism • Athetosis, Chorea, Dystonia & Spasmodic Torticollis 	1 Hrs 1 Hrs		MK	
	✓ Polyneuropathy i. G B Syndrome. ii.Diabetic, Alcoholic & SACD ✓ Dysfunction of Autonomous Nervous System in Spinal Cord Lesions	1Hrs 1 Hrs 1 Hr		MK	
	Disorders & Diseases of muscle <ul style="list-style-type: none"> • Myopathy – Types 	3 Hrs		MK	

	<ul style="list-style-type: none"> • Muscular Dystrophy – Types • Inflammatory Disorders – Polymyositis & Dermatomyositis • Myotonia 	2 Hrs 1 Hrs 1 Hrs				
	Disorders of Anterior Horn Cell . <ul style="list-style-type: none"> • Motor Neurone Disease • SMA, Syringomyelia, Peroneal Muscular Atrophy, Polio 	1 Hrs 1 Hrs 1 Hrs		MK		
	Multiple Sclerosis	1 Hrs		MK		
	Infections of the nervous system like Encephalitis, Neurosyphilis, H I V infection, Herpes, Meningitis, Transverse Myelitis, Tabes Dorsalis & T.B. Spine.	2 Hrs		MK		
	Epilepsy	1 Hrs		MK		
	Tetanus	1 Hrs				NK
	Alzheimer’s Disease	1 Hrs		MK		
	Disorders of cerebellar function	1 Hrs		MK		
	Disorders of cranial nerves & Special Senses	1 Hrs			DK	
	Disorders of Myoneural Junction – Myasthenia Gravis & Myasthenic Syndrome	2 Hrs		MK		
	Neurogenic Bladder	1 Hrs		MK		
	Cerebro Spinal Fluid <ol style="list-style-type: none"> I. Formation & Absorption II. Status in Various Disorders 	1 Hrs		MK		
4.	Sexually transmitted diseases	1 Hrs		MK		
5.	General Medicine	15 Hrs				
	Disorders of Endocrine system <ol style="list-style-type: none"> i. Diabetes ii. Thyroid, Pituitary & Adrenal conditions iii. Calcium Metabolism 	4 Hrs 1 Hrs 2 Hrs 1 Hrs			DK	
	Rhumatological Conditions. <ol style="list-style-type: none"> i. Rheumatoid ArtHritis ii. S L E iii. S S A iv. Gout v. Polymyositis 	4 Hrs 2 Hrs 2 Hrs		MK		
	Geriatric Conditions (4 Hrs) <ol style="list-style-type: none"> i. Aging Process 	1 Hr		MK		

	ii. Osteoporosis iii. General Health Care, Wellness Clinic. iv. Hypertension	1Hr 1Hr				
6.	Nutrition Deficiency Disease	2 Hr				NK
7.	Drug Abuse / Intoxication	1 Hr			DK	
8.	Sexually transmitted diseases – PEP : HIV, HBV, HCV	1 Hr		MK		
9.	Clinical aspects /Practical (15 Hrs) Evaluation, presentation and recording of two cases each in a) U.M.N. lesion b) L.M.N. lesion c) Respiratory Condition d) Cardio Vascular Conditions e) Degenerative / Rheumatological Condition f) General Medicine Conditions like Obesity, Nutritional disorders, Diabetes Mellitus & Metabolic bone disorders.			MK		
			3Hrs 3Hrs 3Hrs 3Hrs 1Hrs			
			2Hrs			

TEXT BOOK

1. API- Text book of Medicine – 5th edition.
2. Golwalla – Medicine for students
3. Principles & practice of Medicine – 16th edn.-by Davidson.

INTERNAL ASSESSMENT: SCHEME OF EXAMINATION

One Test each in:

- | | |
|--|----------|
| 1. Theory - General Medicine, Rheumatology and Gerontology | 25 Marks |
| 2. Theory- Cardio-vascular & Respiratory medicine | 50 Marks |
| 3. Theory- Neurology | 50 Marks |
| 4. Clinical - General Medicine, Rheumatology and Gerontology | 25 Marks |
| 5. Clinical - Cardio-vascular & Respiratory medicine | 25 Marks |
| 6. Clinical - Neurology | 25 Marks |
| 7. Pediatrics | 50 Marks |
| *8. Dermatology | 50 Marks |

Total

300 Marks

- Internal assessment marks to be calculated out of 20

SCHEME OF EXAMINATION (UNIVERSITY)

THEORY - 80 MARKS + INTERNAL ASSESSMENT - 20 MARKS (TOTAL = 100 MARKS)

Section – A

Q. No. 1 MCQ Choose the single best answer (20x1 = 20 marks)

(Based on all the topics included in Medicine syllabus)

Section – B

Q. No. 2 BAQ - To answer 10 questions of 2 marks each (10x2 = 20 marks)

(Based on Cardiovascular or Respiratory conditions)

Q. No. 3 SAQ - To attempt any FOUR out of FIVE questions (4 x 5 = 20 marks)

(Based on Neurology)

Q. No. 4 LAQ: To attempt 2 questions of 10marks each (2x10 = 20 marks)

a) One compulsory question based on Neurology (10 marks)

b) Question based on Cardio-vascular conditions (10 marks)

OR

Another optional question based on Respiratory conditions (10 marks)

Note: L.A.Q. should specify the breakup of marks if divided into parts [e.g. 2+3+5]

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KRISHNA INSTITUTE OF MEDICAL SCIENCES

“DEEMED TO BE UNIVERSITY”, KARAD.

KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-33: OBSTETRICS & GYNAECOLOGY

- Didactic Theory Hours - 20 Hours
- Clinical - 10 Hours
- Total - 30 Hours

OBJECTIVES:

At the end of the course, the candidate will

1. Be able to describe the normal & abnormal physiological events during the Puberty, Pregnancy, Labour, Puerperium, & Pre, Peri & Post Menopause.
2. Be able to discuss common complications during Pregnancy, Labour, Puerperium & Pre Peri & Post Menopausal stage & various aspects of Urogenital Dysfunction & the management in brief.
3. Acquire the cognitive skill of the clinical examination of Pelvic Floor.

SYLLABUS:

Sr. No	CONTENTS	Teaching Hours 20 Hrs	Must Know	Desirable to know	Nice to Know
1	Physiology of Puberty & Menstruation, Abnormalities & common problems of Menstruation	1 Hr	MK		
2	Pregnancy – Fertilization, Development of the foetus, Normal gestations, Abnormal /Multiple gestations, Common Complications during pregnancy like P I H, Eclampsia Diabetes, Hepatitis, German Measels, TORCH infection.	2 Hrs	MK		
3	Labour 1.Normal – Events of Ist IInd & III rd Stages of labour 2.Complications during labour & management 3.Caesarian section	3 Hrs	MK		
4	Post Natal – Puerperium, lactation, Methods of Contraception complications of repeated child bearing with small gaps	2 Hrs		DK	
5	Sterility - management	1 Hr			NK
6	Methods of family planning	1 Hr		DK	

7	Uro-genital dysfunction 1.Uterine prolapse – classification & management (Conservative / Surgical) 2.Cystocoele, Rectocoele, Enterocoele	2 Hrs	MK		
8	Neoplasm of Female reproductive organs – surgical management	1Hr			NK
9	Pre, Peri & Post Menopause – Physiology, Complications & management	2 Hrs	MK		
10	Pelvic Inflammatory Diseases with special emphasis to backache due to Gynaec / Obsconditions	1 Hr	MK		
11	Recent advances in pelvic floor anatomy.	1 Hr	MK		
12	Adolescent gynecological problems.	1 Hr	MK		
13	Recent innovations in treatment of stress urinary incontinence.	1 Hr		DK	
14	Nutrition and exercise for women's health.	1 Hr			NK

CLINICAL:

Evaluation & presentation of two cases each in:

Sr.No	Contents	Clinical Hours
		10Hrs
1	Uro-genital dysfunction	1 Hr
2	Antenatal care	1 Hr
3	Postnatal care i. Following normal labour ii.Following Caeserean section	2 Hrs
4	Pelvic Inflammatory Diseases	1 Hr
5	OBSERVATION – One Normal & One Caesarian delivery, One case of Tubectomy & One Hysterectomy / Repair of the Uro-genital Prolapse.	5 Hrs

TEXT BOOK:

1. Text book of Gynaecology – by Dutta – New Central Book Agency
2. Text book of Obstetrics by Dutta – New Central Book Agency

SCHEME OF EXAMINATION

THEORY - 40 MARKS + INTERNAL ASSESSMENT - 10 MARKS

Section - A

Q. No.1 MCQ 10 Questions based on MUST KNOW area 10 marks

Section - B

Q. No. 2 BAQ Answer any Five out of Six (5 x 2) 10 marks

Q. No. 3 SAQ Answer any TWO out of THREE (2 x5) 10 marks

Section - C

Q. No. 3 Answer any ONE out of TWO (1 x 10) 10 marks

Note: * Emphasis to be given to the urogenital dysfunction / Obstetrical conditions / age related Gynecological problems.

INTERNAL ASSESSMENT:

One Theory examination of 40 marks to be conducted at the end of the term.

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Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-34: PHYSICAL DIAGNOSIS & MANIPULATIVE SKILL

- Didactic Theory Hours - 90 Hours
- Clinical - 310 Hours
- Total - 400 Hours

COURSE DESCRIPTION:

1. Physical Diagnosis & Physiotherapeutic Skills is a stepping stone to introduce students to actual concepts of PT assessment and later to the treatment concepts

2. Physical Diagnosis focuses on the assessment of all the body systems i.e. Musculoskeletal, Neurological and Cardiovascular-Respiratory in order to study the various impairments and their impact on activity and participation of the individual taking into consideration the contextual factors as well. It also emphasizes on the clinical reasoning of the underlying components of a universal evaluation tool (ICF) for a better understanding of the patient in a holistic manner. The student is also subjected to learn basics of manipulative, cardiovascular-respiratory and neuro-therapeutic skills on models so that he/she will be able to apply these principles eventually on patients.

3. The student will also gain a sound knowledge of electro-diagnosis, which is an integral part of Functional Diagnosis.

Sr No	Topics	Didactic	Lab/Practical
1	Human Development, Growth & Aging Process	20	10
2	Electro diagnosis	20	60
3	Functional Analysis	30	100
4	Manipulative Skills	10	120
5	Neuro Therapeutic Skills	10	20

OBJECTIVES:

Cognitive:

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

1. Understand the use of ICF.
2. Acquire the knowledge of human growth and development from new life to birth and adulthood
3. Understand structure and function of nerve and muscle as a base for understanding the electro-diagnostic assessment.

4. Understand the use of appropriate tools or instruments of assessment in Musculoskeletal, Neurological and Cardio-vascular conditions.
5. Understand the theoretical basis and principles of manipulative skills, neurotherapeutic skills and skills of cardiopulmonary care and resuscitation
6. Document results of assessment to evaluate the patient from time to time.

Psychomotor:

Student will be able to:

1. Perform assessment of measures of body structures and functions related to tissue mechanics.
2. Perform assessment of measures of body structures and functions related to motor control affecting activity and participation, quality of life and independence.
3. Perform the skill of electro-diagnosis (SD Curve) and observe skills of EMG and NCV studies, to understand the documentation of finding of these studies.
4. Interpretation and analysis of assessment and findings.
5. Demonstrate skills of manual therapy musculoskeletal, neurotherapeutics and cardiovascular and respiratory skills on models (Laboratory work).

Affective:

Student will be able to:

1. Select appropriate assessment techniques to facilitate safety, sensitive practices in patient comfort and effectiveness.
2. Demonstrate safe, respectful and effective performance of physical therapy handling techniques taking into account patient's clinical condition, need for privacy, resources available and the environment.
3. Follow the principles of appropriate handling technique that is draping, hand placement, body part positioning, manual techniques, lifting and transfer techniques.
4. Communicate with patients and their families/caregivers regarding the need and uses of various assessment techniques.

Sr no	Topic	Teaching hours		Must to know	Desirable to know	Nice to Know
		Didactic	Practical's			
1.	Functional Diagnosis using International Classification of Function, Disability & Health (I.C.F.) (Applicable to all the sections mentioned bellow)	5Hrs		MK		
2	General principles of Human development & maturation a. Aspects – i. Physical ii. Motor iii. Sensory iv. Cognitive v. Emotional vi. Cultural vii. Social	5 Hrs	5Hrs	MK		
	b. Factors influencing human development & growth i. Biological ii. Environmental iii. Inherited.	5 Hrs	5Hrs			NK
	c. Principles of maturation – i. In general ii. In anatomical directional pattern – 1. Cephalo – caudal 2. Proximo – distal 3. Centro – lateral 4. Mass to specific pattern 5. Gross to fine motor development 6. Reflex maturation tests iii. Development in specific fields 1. Oromotor development 2. Sensory development 3. Neuro development of hand function.	5Hrs	10Hrs	MK		
3	Electro diagnosis 1. Physiology of resting membrane potential & action potential, Propagation of Action Potential, Volume conduction. 2. Physiology of muscle contraction. 3. Motor unit & Recruitment pattern of motor unit – Size principle. Therapeutic current-As a tool for electro diagnosis. 1. Physiological principles 2. Faradic Galvanic Test, Strength Duration Curve, Test for Sensory & Pain, THreshold, Test for Pain Tolerance – tests should be carried out on relevant patients.	15Hrs	20Hrs	MK		

	<p>Electro-myography</p> <ul style="list-style-type: none"> i. Principles ii. Instrumentation – Basic Components like CRO, Filter, Amplifier & Premplifier, Types of Electrodes, and Panel diagram. iii. Normal & Abnormal EMG pattern <ul style="list-style-type: none"> i. At rest ii. On minimal contraction On maximal contraction 	3Hrs	20Hrs	MK		
	<p>Nerve Conduction Studies</p> <ul style="list-style-type: none"> i. Principles & Technique ii. F wave iii. H reflex 	2Hrs	10Hrs	MK		
4	<p>Basics in Manual Therapy & Applications with Clinical reasoning.</p> <ul style="list-style-type: none"> a. Examination of joint integrity <ul style="list-style-type: none"> i. Contractile tissues ii. Non contractile tissues 	2 Hrs	10Hrs	MK		
	<ul style="list-style-type: none"> b. Mobility – assessment of accessory movement & End feel. 	2Hrs	10Hrs	MK		
	<ul style="list-style-type: none"> c. Assessment of articular & extra-articular soft tissue status. <ul style="list-style-type: none"> i. Myofascial assessment ii. Acute & CHronic muscle hold iii. Tightness iv. Pain-original & referred 	2Hrs	10Hrs	MK		
	<ul style="list-style-type: none"> d. Basic principles, Indications & Contra-Indications of mobilization skills for joints & soft tissues. <ul style="list-style-type: none"> i. Maitland ii. Kaltenborn iii. Mulligan iv. Mckenzie v. Muscle Energy Technique vi. Myofascial stretching vii. Cyriax viii. Neuro Dynamic Testing 	4Hrs	45 Hrs		DK	
5	Basics in Neuro Therapeutics Skills & Applications					

	with Clinical reasoning. Principles of Neuro Developmental Technique, Rood's Technique, PNF, Brunnstrom Technique Indications for Application	5 Hrs 4Hrs	35Hrs	MK		
6	Assessment of Movement Dysfunction <ul style="list-style-type: none"> a. Higher functions b. Cranial nerves c. Sensations & sensory organisation d. Joint mobility e. Body image f. Tone g. Reflexes-Superficial & Deep h. Voluntary control i. Muscle Strength j. Co-ordination k. Balance l. Endurance m. Trick movements n. Limb Length o. Posture p. Gait q. Scales- Berg Balance, Modified Ashworth, F.I.M., Barthel Index, G.C.S., D.G.I., M.M.S., S.T.R.E.A.M. & A.S.I.A. r. Functional Diagnosis using ICF s. Interpretation of Electro diagnostic findings, routine Biochemical investigations. 	8 Hrs	20Hrs	MK		
7	Assessment of Cardio Vascular & Pulmonary Dysfunction. <ul style="list-style-type: none"> a. Vital parameters b. Chest expansion c. Symmetry of chest movement d. Breath Holding Test e. Breath Sounds f. Rate of Perceived Exertion (RPE) g. Quality of life questionnaire h. Exercise Tolerance – six minutes walk test, Theoretical bases of Bruce's protocol i. Peak Flow Meter j. Interpretation of reports – ABG, PFT, ECG- (Normal & Variations due to Ischaemia & Infarction) k. X-ray Chest l. Ankle Brachial Index m. Tests for Peripheral Arterial & Venous circulation. n. Functional Diagnosis using I.C.F. 	5 Hrs	26Hrs	MK		
8	Assessment of Musculo skeletal Dysfunction <ul style="list-style-type: none"> i. Tightness 	5 Hrs	50Hrs	MK		

	<ul style="list-style-type: none"> ii. Joint Mobility iii. Muscle strength iv. Limb Length v. Trick Movement vi. Posture vii. Gait viii. Special Test <ul style="list-style-type: none"> • Cervical Spine: Foraminal compression, Distraction, Shoulder depression, vertebral artery, Dizziness tests. • Shoulder: Yergason"s, Speed"s, Drop- Arm, Supraspinatus, Impingement, Anterior & Posterior Apprehension, Allen, Adson. • Elbow: Cozen"s, Miller"s, Tinel"s sign • Forearm, Wrist & Hand: Phalen"s, Bunnel-Littler, Froment"s sign • Lumbar Spine: Schober"s, SLR, Prone Knee Bending, Slump. • Sacro Iliac joint: Faber-Patrick"s, Gaenslen, Gillet, March • Hip: Nelaton"s line, Bryant"s triangle, Thomas, Ober"s, Tripod sign, Trendlenburg sign, • Knee: Tests for collateral & cruciate ligaments (valgus, varus, Lachman, Sag, Drawer"s, McMurray"s, Fluctuation, Patellar tap, Q-angle, Clarke) • Ankle & Foot: Anterior Drawer, Talar Tilt, Homan"s & Moses (for D.V.T.) ix. Functional Diagnosis using ICF x. Interpretation of X-ray of extremities & spine, routine, biochemical investigations. 					
9	<p>Assessment of Hand</p> <ul style="list-style-type: none"> i. Sensations ii. Mobility of joints iii. Strength iv. Special Tests like Froment"s Sign, Bunnel – Litter"s Test, Phalen"s Test, Tinel"s Sign, Wartenberg"s Sign. 	3 Hrs	10Hrs			NK

	v. Hand Function – Precision & Power Grips.					
10	Response of soft tissues to trauma : i. Trigger points ii. Spasm iii. Ligament Sprains iv. Muscle Strains	2Hrs			DK	
11	Assessment of pain i. Types of pain: Somatic, Somatic referred, Neurogenic, Visceral ii. Subjective Assessment: a) Location, duration, progression, distribution, quality, diurnal variations, modifying factors. b) Severity, nature of pain, tissue irritability iii. Objective Measurement & Documentation- a) Visual Analogue Scale (V.A.S). b) Numerical Rating Scale(N.R.S.) c) McGill"s modified questionnaire(including Body charts)	2 Hrs	10 Hrs	MK		
12	Assessment of Fitness & Health i. Screening for risk factors ii. Body composition-B.M.I., use of skin fold calipers, Girth measurement iii. Physical fitness: Flexibility, Strength, Endurance, Agility iv. Physical Activity Readiness Questionnaire v. Screening for health and fitness in childhood, adulthood and geriatric group vi. Quality of life vii. Principles & components of exercise prescription for healthy	3 Hrs	5 Hrs	MK		
13	Introduction to Quality of Life Questionnaire.	2 Hrs	2 Hrs		DK	
14	Clinical decision making and reasoning in various disorders		5 Hrs	MK		
15	Advanced physical diagnostic tools	1 Hr	2 Hrs			NK

Clinical:

Practice of Manual Therapy in Kaltenborn, Maitland, Mulligan & Cyriax on extremities only & only on models

2. Electro-diagnostic assessment – S D Curve, Faradic Galvanic Test, Test for Sensory & Pain THreshold, Test for Pain Tolerance.

3. Identification of abnormal breath sounds, measurement of chest expansion, pattern of breathing, Vital parameters, Grades of Dyspnoea, Rate of Perceived exertion, Ankle Brachial Index.

4. Exercise tolerance testing – 6 minutes walk test & Bruce's protocol on models only

5. Practice to Neuro Therapeutic Skills of NDT, PNF, Rood's Technique & Brunnstrom on models only.

6. Interpretation of reports – EMG, NC Studies, ABG, PFT, X-ray of Chest, Extremities & Spine & ECG.

Term work in Clinical

A. Documentation & Interpretation of following investigations

1. Electro diagnosis –

- a. SDC
- b. Faradic Galvanic Test
- c. Test for Sensory / pain THreshold
- d. Test for Pain tolerance – Any 3

2. Cardio Vascular & Pulmonary – ABG, PFT, ECG, X-ray Chest, Exercise Tolerance Test-1 each.

Neurological – Scales like Modified Ashworth, Berg's Balance, DGI, Glasgow Coma, Barthel Index, STREAM Format – Any 3 & EMG & NC Studies – 2 each.

B. Case presentation with Functional diagnosis – Three cases each in –

- a. Musculoskeletal
- b. Neurological
- c. Cardiovascular & Pulmonary

To maintain the Record/Journal of the term work & to get each assignment duly signed by Head.

RECOMMENDED TEXT BOOKS

1. Orthopaedic Physical Examination – Magee
2. Clinical Electro Therapy – Nelson – Currier --- Appleton & Lange publication
3. Clinical Electromyography – MisHra
4. Therapeutic Exercises - Colby & Kisner
5. Physical Rehabilitation, Assessment and treatment - Susan B O's Sullivan
6. Neurological Examination - John Patten

RECOMMENDED REFERENCE BOOKS

1. Maitland's book on Manual therapy,
2. Mobilisation of Extremities – Kaltenborn

3. Clinical Electromyography – Kimura
4. Orthopaedic Physical therapy – Donnatelli
5. NAGS, SNAGS and MWMS - Brian Mulligan
6. Exercise & Heart – Wenger
7. Exercise Physiology – William D Mc^oArdle
8. Facilitation techniques based on NDT principles - Lois Bly Allison Whiteside
9. Movement therapy in Hemiplegia - Brunnstrom
10. Cash textbook of Physiotherapy in neurological conditions - Patricia Downie
11. Physical Dysfunction - Trombly Scoot
12. Infant Motor Development- Jan Piek
13. Neurology & Neurosurgery Illustrated (3rd edition)-Bone & Callander
14. Neuro-developmental Therapy –Janett Howle

INTERNAL ASSESSMENT:

1. Two exams – Terminal and preliminary examination (Theory & Practical) of 80 marks each
TOTAL - 160 marks
2. Internal Assessment to be calculated out of 20 marks
3. In Practicals of Terminal & Preliminary examinations Spots will be of 15 marks instead of 10 marks (3 marks X 5), No marks will be allotted for the journal in Terminal & Preliminary examinations
4. Internal assessment as per University pattern

SCHEME OF UNIVERSITY EXAMINATION

THEORY		Marks
80 MARKS + I.A. – 20 MARKS		100
* The question paper will give appropriate weightage to all the topics in the syllabus.		100
Section A- M.C.Qs.	Q-1 -MCQ – based on MUST KNOW area [20 x 1]	20
Section B - BAQ	Q-2 - Answer Ten questions of 2 marks each. [10 x 2 = 20] Q-3- Answer any FOUR out of FIVE [4 x 5 =20]	40
Section C- L.A.Q.	* Based on topics- Simulated case on all of the sections on ICF pattern Q-4] L.A.Q : 2x10=20 marks a) Compulsory question. b) Answer any one - option provided. LAQ should give break up of 10 marks – e.g. [2 +3+5]	20
Total Marks		80

PRACTICAL 80 MARKS + I.A. – 20 MARKS		Marks
		100
LONG CASE	<p>[Time maximum 30 minutes for students for evaluation]</p> <p>1. Psychomotor & affective:</p> <p>Skill of History taking [05 marks] Skill of clinical examination [15 marks] Skill of objective diagnostic procedure [10 marks]</p> <p>2. Cognitive :</p> <p>Ability to justify bases for functional diagnosis by I.C.F. [15 marks] [To be evaluated in cognitive, psychomotor and affective domains.]</p>	45
SHORT CASE	<p>Two Short cases on</p> <p>1. Mobilization Technique: Kaltenborn, Maitland, Mulligan's, MFR, PRT, M.E.T. or Neural Tissue Mobilization (On Models)</p> <p>[10marks]</p> <p>2. Neuro Therapeutic Skills: N.D.T. / P.N.F. / Rood's / Brunnstrom (On Models) [10 marks]</p> <p>OR</p> <p>Electro Diagnosis: S.D. Curve / Faradic Galvanic Test (On Patient) [10 marks]</p> <p>OR</p> <p>Exercise Tolerance Test: Six Minutes Walk Test (On Model) [10 marks]</p>	20
SPOTS	<p>5 spots - (5 x2 Marks= 10 Marks) 3minutes for each spot</p> <p>a) X ray (on section 2/3/4) b) Pulmonary Function Test c) Blood gas analysis d) E.C.G. e) E.M.G. / N.C. studies</p>	10

JOURNAL	Documentations- Assessment, Evaluation, Diagnosis with I.C.F.	5
Total Marks		80

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KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-35: COMMUNITY HEALTH, SOCIOLOGY & BIO-STATISTICS

SUBJECT	THEORY(Hrs)	PRACTICAL(Hrs)	TOTAL(Hrs)
Community health	10	10	20
Sociology	20	-	20
Bio-statistics	30	-	30

COMMUNITY HEALTH:

OBJECTIVES:

At the end of the course, the candidate shall be able to understand the contents given in the syllabus.

Sr.No	Contents	Teaching Hours		Must Know	Desirable to Know	Nice to know
		Theory 10 Hrs	Practical 10 Hrs			
1	General concepts & Determinants of Health & Diseases – National & International Definition of Health, Role of Socio-Economic & Cultural Environment in Health & Disease a)Epidemiology – Definition & Scope b) Environmental Hygiene including man & his surrounding, Occupational & Industrial hygiene, Village & Town Sanitation, Bacteriology of Water, Milk, & Food Hygiene [Overview]	1 Hr	1 Hr	MK		
2	Overview of Public Health Administration at Central & State levels – Strategies of Health Delivery System for “The Health for All” National health programme [brief Role of WHO]	1 Hr	1 Hr		DK	
3	Socio-Economical & Cultural Issues related to Morbidity owing to the Physical Disability & Handicaps of Structural / Neuro-motor & Psychosomatic origin-	4 Hrs	4 Hrs	MK		
	A} Health problem vulnerable groups					

	<p>i. Preventive medicine in obstetrics-ANC, intra natal & PNC; geriatric care</p> <p>ii. Pre-term babies with high risk infants & health problems of Pre-School Children, Brain Damage during birth injury, Congenital & Acquired disorders, Spinal Dysraphism, T.B. Meningitis, Polio, Cerebral palsy, Other Hereditary neuro-motor Conditions, such as Myopathies & Muscular Dystrophies, Malnutrition – Rickets.</p> <p>iii. Occupational Diseases & Hazards – Definition, Scope, Accident prevention minor & major accidents, injury prevention- UE, LE, spine, Hand Injuries, Disc Lesions, CTD, Backaches, Respiratory Illnesses due to exposure to asbestoses, tobacco, fumes, COPD, Asthma, Sarcoidosis; Stress.</p>					
	<p>B. Traumatic / Paralytic morbidity, Head Injury, Quadri /paraplegia, Urinary/Bowel Incontinence, Amputation, Skeletal Deformities due to multiple Fractures & Prolonged Bed Rest & Mental Retardation, adolescents and road traffic accidents.</p>					

	<p>C. Nutritional – Osteomalacia, Rickets, Neuropathies due to Vitamin- deficiency, Skeletal Deformities, food intoxicants.</p>					
	<p>D. Auto-immune & Hereditary diseases - overview- Rheumatoid artHritis, S.L.E. Sero-vearthritis, Ankylosing Spondylitis, Multiple Sclerosis, Spinal Muscular Atrophies & Myopathies, Dystrophies in adults.</p>					
	<p>E. Geriatric-Osteoporosis, Malnutrition, Alzheimer’s Disease, Parkinsons, Ataxia, CHD, Hypertension.</p>					
	<p>F. Addiction – Alcoholic – Neromotor & Psychosomatic disorders, Smoking – asthma, COPD, drug abuse.</p>					
4	<p>Family planning – objectives of National Family Planning Programmes & Family Methods General Idea of Advantage & Disadvantage of the Methods.</p>	1 Hr	1 Hr			NK
5	<p>Mental health –socio-economical & cultural aspect and assessment of mental health.</p>	1 Hr	1 Hr	MK		
6	<p>Communicable diseases-an over-view [including prevention & control] TB, HIV Leprosy, Brucillosis, & Other conditions leading to Paralysis & ArtHritis, Respiratory diseases causing Bronchiactesis COPD.</p>	1 Hr	1 Hr	MK		

	Non communicable diseases- cardiovascular, HTN, stroke					
7	National Immunization programmes – children & hospital staff.	1 Hr	1 Hr		DK	

TEXT BOOK

1. K. Park – Park’s Textbook of Preventive & Social Medicine
2. P.K. Mahajan & M.C. Gupta – Textbook of Preventive & Social Medicine

SOCIOLOGY:

Sr.No	Contents	Teaching Hours 20 Hrs	Must Know	Desirable to Know	Nice to know
1	Introduction – Definition & Relevance with Physiotherapy.	1Hr	MK		
2	Sociology & Health – Social factors affecting Health Status, Social Consciousness & Perception of Illness, and Decision Making in taking Treatment.	2Hrs	MK		
3	Socialization – Definition, Influence, of Social Factors, on Personality, Socialization in the Hospital & Rehabilitation of the patients.	1Hr		DK	
4	Social groups-Concepts, Influence of formal & informal groups of Health & Diseases, Role of Primary & Secondary Groups in the Hospital & Rehabilitation Setting.	2Hrs	MK		
5	Family-Influence on human personality, Individual Health, Family & Nutrition, Effects of Sickness on Family Psychosomatic Diseases & Family.	2Hrs	MK		
6	Community Role of Rural & Urban communities in Public Health, Role of community in determining Beliefs, Practices & Home Remedies in Treatment.	2Hrs	MK		
7	Culture-Components Impact on Human Behavior Cultural Meaning of Sickness Response to Sickness & Choice of Treatment, [Role of Culture as Social Consciousness in moulding the Perception of Reality] Culture induced Symptoms & Diseases, Sub-Culture of Medical Workers.	1Hr		DK	
8	Culture, religion & gender influence in rehabilitation practice Caste system	1Hr			NK

9	Social change factors– Human Adaptation, Stress, Deviance, Health Programme Role of Social Planning in the improvement of Health & in Rehabilitation.	1Hr	MK		
10	Social Control – Definition, Role of norms, Folkways, Customs, Morals, Religion, Law & other means of social controls in the regulation of Human Behavior, Social Deviance & Disease.	1Hr	MK		
11	Social problems of the Disabled- Consequences of the following social problems in relation to sickness disability, remedies to prevent these problems. A. Population Explosion b. Poverty & Unemployment c. Beggary & Juvenile Delinquency d. Prostitution & Alcoholism e. Problems of Women in Employment	3Hrs	MK		
12	Social Security & Social Legislation in relation to the Disabled.	1Hr			NK
13	Role of a Social Worker in diversified areas of rehabilitation	1Hr	MK		
14	Social pathology	1Hr		DK	

TEXT BOOKS

1. Sachdeva, & Bhusahn- An introduction to sociology – Allahabad; kitab mahal ltd. 1974.
2. Madan – Indian social problems, Vol-I-Madras – Allied publications 1973.

BIOSTATISTICS:

OBJECTIVES:

At the end of the course, the candidate shall –

1. Gain knowledge of the basic concepts of Biostatistics & its need for professional practice & Research
2. Be able to describe an Over-view-a
 - a] Ethnography & Anthropology
 - b] Design & Methodology of an Experiment or Survey
 - c] Demography & vital statistics
 - d] Sampling & interpretation of Data.

Sr.No	Contents	Theory Hours	Must Know	Desirable to Know	Nice to know
1	Introduction – Uses of statistical methods in Physiotherapy – Measurement Scales, variables, & their Measurements, Symbolic Data, Operations.	8 Hrs	MK		
	Statistical data – Tabulation, Calculation of	10 Hrs			NK

2	Central Tendency, & Dispersion, Linear Regression & Correlation – Presentation of Data in Diagrammatic & Graphic Form.				
3	Probability & Sampling as a Mathematical System, Population & Samples, Sampling Distribution, Sampling Methods.	7 Hrs		DK	
4	Practice sessions for simple data- graphs/ compiling data	4 Hrs	MK		
5	Statistical Fallacies	1 Hr			NK

TEXT BOOK

1. B.K. Mahajan – Methods in Biostatistics.

SCHEME OF EXAMINATION

THEORY - 80 MARKS

[INCLUSIVE OF COMMUNITY HEALTH – 40 MARKS

AND

BIostatISTICS & SOCIOLOGY – 40 MARKS]

THEORY - 80 MARKS + INTERNAL ASSESSMENT - 20 MARKS

[TOTAL - 100 MARKS]

SECTION- A

Q. NO. 1 - MCQ (TOTAL - 20 QUESTIONS – 20 MARKS)

COMMUNITY HEALTH – 10 Questions (10 Marks)

BIostatISTICS – 05 Questions (05 Marks)

SOCIOLOGY – 05 Questions (05 Marks)

SECTION – B: BASED ON COMMUNITY HEALTH

Note: (Inclusive of Q. No. 2, 3 & 4)

Q. No. 2 BAQ: Answer any 5 out of 6 Questions (5 x 2 = 10 Marks)

Q. No. 3 SAQ: Answer any 2 out of 3 Questions (2 x 5 = 10 Marks)

Q. No. 4 LAQ: Answer any one out of Two Questions (1 x 10 = 10 Marks)

SECTION – C: BASED ON BIOSTATISTICS & SOCIOLOGY

Note: (Inclusive of Q. No. 5, 6 & 7)

Q. NO. 5 BAQ: BASED ON BIOSTATISTICS

Answer any 5 out of 6 Questions (5 x 2 = 10 Marks)

(Note: 6 Questions on Biostatistics)

Q. NO. 6 SAQ: BASED ON BIOSTATISTICS& SOCIOLOGY

Answer any 2 out of 3 Questions (2 x 5 = 10 Marks)

(Note: 2 Questions on Biostatistics& 1 Question on Sociology)

Q. NO. 7 LAQ: BASED ON SOCIOLOGY

Answer any one out of Two Questions (1 x 10 = 10 Marks)

(Note: 2 Questions on Sociology)

INTERNAL ASSESSMENT:

1 - Terminal & 1 - Preliminary Examination of 80 marks each as per University pattern.

Internal Assessments marks should be calculated out of 20 marks.



KRISHNA INSTITUTE OF MEDICAL SCIENCES

“DEEMED TO BE UNIVERSITY”, KARAD.

KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-36: PSYCHIATRY

- Didactic Theory Hours - 25 Hours
- Clinical - 35 Hours
- Total - 60 Hours

OBJECTIVES:

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

1. Enumerate various Psychiatric disorders with special emphasis to movement / Pain & ADL – describe the various causative factors & methods of assessment & management.
2. Acquire the knowledge in brief, about the pathological & etiological factors, signs / symptoms & management of various Psychiatric conditions.
3. Describe in brief the various treatment modalities commonly used.

SYLLABUS:

Sr.No	Content	No. of hours		Must know	Desirable to know	Nice to know
		Didactic	Practical			
1.	Psychiatric History, & examination of mental status	5 Hrs.	5 Hrs	MK		
2.	Classification of Mental status	2 Hrs	3 Hrs		DK	
3.	SchizopHrenia & its types-brief Psychotic disorder, delusional disorder, schizoaffective disorders, post-partum psychosis, mood disorders, organic mental disorders, Anxiety disorder, phobia, obsessive compulsive dissociative conversion disorder, hypochondriasis, post-traumatic disorder, personality disorder, substance related disorders- adjustment & impulse control, disorder, psycho-sexual disorders, psycho-somatic disorder, psychiatric emergencies suicide stress management disorders of infancy – childhood &	15 Hrs.	20 Hrs	MK		

	adolescence disruptive behaviour, conduct disorder, attention deficit, & hyper-reactivity-eating disorder, tic, disorder, elimination disorder – child abuse, enuresis.					
4.	Management –ECT, Chemotherapy, group therapy, psychotherapy, cognitive behavioural therapy.	2 Hrs	6 Hrs			NK
5.	Disaster psychiatry: Disaster Management – Psycho social approach	1 Hr	1 Hr			

TEXT BOOK

1. A short book of Psychiatry – 3rd edn-by Ahuja – Jaypee bros – medical publishers
2. Shah L.P. Handbook of Psychiatry

EXAMINATION SCHEME

Theory

Theory: 40 Marks

Internal Assessment: 10 Marks

Total 50 Marks

*THEORY – 40 MARKS (University Examination)

Section - A

Q. No.1 MCQ's based on MUST KNOW area 10 marks

Section - B

Q. No. 2 BAQ Answer any Five out of Six (5 x 2) 10 marks

Q. No. 3 SAQ Answer any TWO out of THREE (2 x5) 10 marks

Section - C

Q. No. 3 LAQ Answer any ONE out of TWO (1 x 10) 10 marks

Internal Assessment: Rounded off to 10 marks

One test in TERMINAL – 40 marks + PRELIMINARY - 40 marks - Total 80 marks

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Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-37: PAEDIATRICS

- Didactic Theory Hours - 20 Hours
- Clinical - 10 Hours
- Total - 30 Hours

OBJECTIVES:

At the end of the course, the candidate will

1. Acquire knowledge in brief about intra-uterine development of the foetus.
2. Be able to describe normal development & growth of a child, importance of Immunization, & breast-feeding & psychological aspect of development.
3. Be able to describe neuromuscular, musculoskeletal, cardio-vascular & pulmonary conditions related to immunological conditions, nutritional deficiencies, infectious diseases, & genetically transmitted conditions.
4. Acquire skill of clinical examination of a neonate / child with respect to neurological, musculoskeletal & respiratory function.

SYLLABUS:

Sr.No	Content	Teaching hours Didactic 20Hrs	Must know	Desirable to know	Nice to know
1.	Normal intra-uterine development of foetus	1 Hr		DK	
2.	Normal development & growth	1 Hr	MK		
3.	Immunization, Handling of the child, Significance of breast-feeding	1 Hr	MK		
4.	Common causes for Developmental disorders like Sepsis, Prematurity, Asphyxia & Hyperbilirubinemia	1Hr		DK	
5.	Brain damage-Cerebral Palsy-types & Medical Management	2 Hrs	MK		
6.	Spinal Cord Disorders like Poliomyelities, Spinal Dysraphism, Spina Bifida, Meningocele, Myelomeningocele.	2 Hrs	MK		
7.	Common infections <ul style="list-style-type: none">• C.N.S. & peripheral nervous system• Typhoid, rubella, mumps,	2Hrs	MK		

	measles, diphtheria, chicken pox, hepatitis.				
8.	Epilepsy	1 Hr	MK		
9.	Mental Retardation	1 Hr	MK		
10.	Genetically transmitted neuro-muscular conditions	1 Hr	MK		
11.	Malnutrition related condition	1Hr			NK
12.	Juvenile R.A & other immunological conditions of Musculoskeletal system.	1 Hr	MK		
13.	Common diseases of the respiratory system like Asthma, Bronchitis, T.B. & Pneumonia & bronchiectasis	2 Hrs	MK		
14.	Rheumatic & Congenital heart disease	1Hr	MK		
15.	Polyneuropathy	1 Hr	MK		
16.	Learning disabilities – Autism (ASD)	1 Hr	MK		

Clinical: 10 Hrs.

Sr. no	Clinical Contents	Clinical Hrs 10Hrs
1	Normal & abnormal reflexes in neonate & child	4 Hrs
2	Examination of the nervous system	2 Hrs
3	Examination of respiratory system	2 Hrs
4	Examination of cardiovascular system	2 Hrs

* Internal assessment to be conducted at the end of the completion of the term

Total – 40 marks.

EXAMINATION SCHEME

Theory

Theory: 40 Marks
Internal Assessment: 10 Marks

Total 50 Marks

TEXT BOOK:

1. Essentials of Paediatrics – by O.P. Ghai-Inter Print publications
2. D.K. series in Paediatrics.

- Internal Assessment to be conducted for 50 marks.

*Theory – 40 marks

Section - A

Q. No.1 MCQ's based on MUST KNOW area 10 marks

Section – B

Q. No. 2 BAQ Answer any Five out of Six (5 x 2) 10 marks

Q. No. 3 SAQ Answer any TWO out of THREE (2 x5) 10 marks

Section - C

Q. No. 3 LAQ Answer any ONE out of TWO (1 x 10) 10 marks

NOTE: NEW AMENDMENT: PEDIATRICS SUBJECT IS FOR UNIVERSITY EXAMINATION FROM ACADEMIC YEAR 2016-2017.



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Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

B.P.TH - IV Year

- 1. 3101 - 41: PHYSIOTHERAPY IN MUSCULOSKELETAL CONDITIONS**
- 2. 3101 - 42: PHYSIOTHERAPY IN NEURO SCIENCES**
- 3. 3101 - 43: PHYSIOTHERAPY IN GENERAL MEDICAL AND SURGICAL CONDITIONS**
- 4. 3101 - 44: PHYSIOTHERAPY IN COMMUNITY HEALTH**
- 5. 3101 - 45: ETHICS AND PRINCIPLES IN PHYSIOTHERAPY PRACTICE**

3101-41: PHYSIOTHERAPY IN MUSCULOSKELETAL CONDITIONS

- Didactic Theory Hours- 60 Hours
- Clinical - 140 Hours
- Total - 200 Hours

OBJECTIVES:

This course is formulated on the “Problem based” method. At the end of the course, the candidate will –

1. Be able to identify, discuss & analyze, the Musculo Skeletal Dysfunction in terms of Biomechanical, Kinesiology & Biophysical bases & correlate the same with the provisional diagnosis, routine radiological & Electrophysiological investigations & arrive at appropriate Functional diagnosis with clinical reasoning.
2. Be able to plan & Prescribe as well as acquire the skill of executing short & long term Physiotherapy treatment by selecting appropriate modes of Mobilization /manipulations, Electro Therapy, Therapeutic exercise & appropriate ergonomic advise for the relief of pain, restoration/Maintenance of function, &/ or rehabilitation for maximum functional independence in A.D.L. at home & work place:

SYLLABUS:

Sr no	Topic	Hours		Must Know	Desirable to know	Nice to know
		Th: 60 Hrs	Cl: 140 Hrs			
	Section I:	(30 Hrs)	(70 Hrs)			
1.	Principles of Evaluation, interpretation of investigations & functional diagnosis (ICF) with appropriate clinical reasoning for planning & implementation of management techniques.	3Hrs	6 Hrs	MK		
2.	Planning, Prescription & Implementation of short term & long-term goals with clinical reasoning.	3 Hrs	3Hrs	MK		

3.	Principles of management which includes clinical reasoning schools of manipulative therapy and techniques and Documentation.	2 Hrs.	6 Hrs	MK		
4.	Application of appropriate electro therapeutic modes for relief of acute & chronic pain & swelling; wound healing, re-education etc with clinical reasoning.	3 Hrs	3Hrs	MK		
5.	Application of simple therapeutic modes for muscle strength / joint mobility.	3 Hrs	6 Hrs	MK		
6.	Application of Advanced therapeutic modes of mobility like Mobilization Techniques (Techniques covered in IIIrd BPTth.) (to be applied only on extremities), Friction Massage, Myofacial Release, Muscle Energy Techniques & Neuro Dynamic Techniques on patients. (Non-tHrust mobilization methods only).	3 Hrs	12 Hrs			
7.	Application of various taping methods for support & relief of pain.	2 Hrs	3Hrs	MK		
8.	Basic principles and application –Aquatic therapy for Musculoskeletal conditions	5Hrs	6Hrs	MK		
9.	Posture Correction & Gait Training.	2Hrs	6 Hrs	MK		
10	Application of appropriate Therapeutic exercise using therapeutic gymnastic tool as and when necessary, for the relief of pain, structural stability, strength/endurance: & Functional restoration including gait training/maintenance of functions & / or for the preventive measures.	2 Hrs	4 Hrs	MK		
11	Appropriate Home Program & Ergonomic advise for preventive measures & Functional efficiency at home & work place, Advice to Parents & Care Givers.	1 Hr	2 Hrs		DK	
12	Introduction to Evidence based Physiotherapy practice in Musculoskeletal conditions.	1 Hr	3 Hrs		NK	
	Section II: Physiotherapy management for the following conditions:	(30 Hrs)	(70 Hrs)			
1.	Manifestations of trauma & diseases of the bones & soft tissues of the musculo skeletal tissue.	2Hrs	3Hrs	MK		
2	Fractures of the spine, extremities – classification/ management & complications.	3 Hrs	6 Hrs	MK		
3	Metabolic & hormonal disorders of the bone tissue – Osteoporosis.	3 Hrs	6 Hrs	MK		
4	Peripheral nerve injuries, management/ complications – V.I.C.	3 Hrs	6 Hrs			
5	Deformities of the spine, extremities – congenital malformation – Spina Bifida, meningocele / meningomyelocele, CTEV (Foot Deformities) CDH	3 Hrs	6 Hrs	MK		

6	Management for musculoskeletal conditions of extremities and spine	3 Hrs	6 Hrs	MK		
7	Re- constructive surgeries in Polio & cerebral palsy.	1Hr	1Hrs	MK		
8	Inflammatory/ Infectious disease of the bone & joints T.B. / Osteomyelitis.	2 Hrs	4 Hrs			NK
9	Tumors of the bone.	2 Hrs	4 Hrs	MK		
10	Degenerative / Rheumatoid artHritis.	4Hrs	9 Hrs	MK		
11	Soft tissue injuries/common soft tissue injuries encountered during sports/Over – use. Outline of sport physiotherapy and rehabilitation, Athletic fitness.	2Hrs	5Hrs	MK		
12	Amputation – classification – prosthetic management.	1 Hr	2 Hrs	MK		
13	Hand injury – management.	1 Hr	2 Hrs		DK	
14	Assistive Device technology, Digital and pervasive technologies for musculoskeletal conditions					
	1.Prescription of appropriate orthotic & prosthetic devices & fabrication of simple temporary splints.	2Hrs		MK		
	2. Classification of Assistive Devices , basic principles of digital and pervasive technologies for musculoskeletal conditions.	3 Hrs				
	3. Biomechanical principles in designing of appliances, Aids /Splints& assessment Procedures for static & dynamic alignment of the upper limb, lower limb and spine.	5Hrs			DK	
	4. (A)Orthosis :-spine-upper & lower limb,	5Hrs		MK		
	5. (B)Prosthesis- for Lower limbs , Upper limbs	5Hrs		MK		
	6. Project-Temporary splints –to fabricate ONE splint each - [to use P.O.P, aluminum strips /sheets /wires rubber bands, rexin, Orfitetc]	3 Hrs				NK
7. Basic procedure of application of Cock up (dorsal/volar) Outrigger Opponens splint Anterior and posterior guard, Foot drop splint Facial splint Mallet Finger Splint C- bar for 1st web space of hand	2Hrs				NK	

CLINICAL:

Evaluation & treatment planning: its presentation & documentation of Minimum two cases each in – 1) # upper Limb (Including hand injury), 2) # lower limb, 3) Soft tissue lesion (any), 4) # spine with/without Neurological condition 5) degenerative artHritis of skeletal joint 6) musculo – skeletal condition of Hand & foot.

TEXT BOOKS:

1. Cash's Textbook of Orthopedics & Rheumatology for Physio Therapists- Jaypee
2. Manual mobilization of extremity joints – by Freddy Kaltenborn, Maitland
3. Therapeutic exercise – by Kolby&Kisner
4. Therapeutic exercise – by O' Sullivan
5. Taping Techniques – by Rose Mac Donald

REFERENCE BOOK:

1. Orthopedic Physical therapy – by Donatelli
2. Manual Therapy – by Maitland
3. Neural tissue mobilization – Butler

SCHEME OF EXAMINATION**PRACTICAL EXAMINATION - TOTAL 80 MARKS**

1. Long Case: based on the History 10 marks, Evaluation 10 marks, Treatment Plan on Patient 20 marks (Total: 40 marks)
2. Short Case: Simulated (20 Marks)
3. Five spots: spots based on, X – ray (limb, spine), Orthosis, Prosthesis, Metal implants etc 3 minutes each spot and 3 marks per spot (3x5 = 15 Marks)
4. Journal (5 Marks)

Theory Examination: Total 80 Marks

Section A

Q.1: MCQ: (20 X 1=20marks)

Section B

Q.2: BAQ: (10 X 2=20marks)

Q.3: SAQ: Answer any 4 out of 5 (4X5=20marks)

Section C

Q.4: LAQ: (2X10=20marks)

1. Should be compulsory
2. Should have one Optional question (i.e. OR)

MCQ's : 20	BAQ's: 20	SAQ's: 20	LAQ's: 20
MK – 12 DK – 06 NK – 02	MK – 06 DK – 03 NK – 01	MK – 02 DK – 02 NK – 01	MK – 02 DK – 01 NK – 00
LEVEL I: 14	LEVEL I: 06	LEVEL I: 03	LEVEL I: 02
LEVEL II: 06	LEVEL II: 04	LEVEL II: 02	LEVEL II: 01

Internal Assessment marks: 20 Marks

(Theory & Practical each rounded of to 20 Marks)

2 Theory Examinations (Terminal & Preliminary): 80 Marks each exam

2 Practical Examinations (Terminal & Preliminary): 80 Marks each exam



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KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-42: PHYSIOTHERAPY IN NEUROSCIENCES

- Didactic Theory Hours - 70 Hours
(Adult / Psycho - Somatic & Psychiatric Conditions: 60 Hrs & Pediatric: 10Hrs)
- Clinical - 140 Hours
(Adult / Psycho - Somatic & Psychiatric Conditions: 120 Hrs & Pediatric: 20Hrs)

- Total - 210 Hours

OBJECTIVES:

At the end of the course, the candidate will –

1. Acquire the knowledge of normal neurodevelopment, with specific reference to locomotion
2. Be able to assess, identify & analyze neuro-motor & psychosomatic dysfunction in terms of alteration in the muscle tone, power, coordination, involuntary movements sensations/perception etc, E.M.G. / N.C. Studies & arrive at functional diagnosis with clinical reasoning.
3. Acquire the skill of application of P.N.F. technique on patients.
4. Be able to plan, prescribe & execute short term & long term treatment, with special reference to relief of Neuropathic & psycho-somatic pain, mat exercises, functional re-education, gait training, postural & functional training for A.D.L., ergonomic advise, & parents education in neuro- pediatric care.
5. Be able to prescribe appropriate Orthosis / splints & will be able to fabricate temporary protective & functional splints.

SYLLABUS:

Sr no.	Topic	Teaching hours		Must to know	Desire to know	Nice to know
		Theory 70 Hrs	140 Hrs practical			
	Section A					
1	Principles of Evaluation in Adult and Pediatrics	5 Hrs	10 Hrs	MK		
2	Understanding principles of theories of motor control & motor learning <ul style="list-style-type: none">• Principles of neural recovery including motor learning.• Types of movement disorders and physiotherapy treatment	5 Hrs	10 Hrs	MK		

1.	Assessment of development, Tone, Co-ordination, Psyc-somatic & Locomotor function.	5 Hrs	10 Hrs	MK		
2.	Applied Neuro-Anatomy	5 Hrs	10 Hrs		DK	
3.	Functional Diagnosis of neuromuscular dysfunction <ul style="list-style-type: none"> Functional evaluation of neurological conditions that includes ICF and Scales. 	5 Hrs	10 Hrs			NK
4.	Understanding sensory system & organization of sensory strategies for efficient motor output.	5 Hrs			DK	
5.	Principles of neural recovery including motor learning Skill of sensory-motor learning & neuro-muscular skeletal training	5 Hrs	10 Hrs	MK		
6.	Basic principles and application – Advanced neuro-physiotherapy techniques. Understanding principles of Application of neurotherapeutic skills like: <ul style="list-style-type: none"> PNF NDT Carr & Shepherd Brunnstorm& Rood's 	5 Hrs	10 Hrs	MK		
7.	Planning short term & Long term goals	5 Hrs		MK		
8.	Treatment Programme <ul style="list-style-type: none"> Application of appropriate Electro-therapeutic modes for relief of pain & functional re-education with clinical reasoning. Introduction to Evidence based Physiotherapy practice in neurological conditions. 	5 Hrs	10 Hrs	MK		
	<ul style="list-style-type: none"> Application of skills as P.N.F., Co-ordination & balancing exercise by using techniques based on neuro physiological principles. Tools used for neuro rehabilitation like vestibular balls, tilt board etc. Application of transfer & functional re-education exercise, postural exercise & gait training. Bladder training. 			MK		
	<ul style="list-style-type: none"> Developing a philosophy for caring. 			MK		

	<ul style="list-style-type: none"> • Prescription for appropriate orthotic devices & fabrication of temporary splints. 			MK		
	<ul style="list-style-type: none"> • Lifting techniques, wheel chair modifications, adaptive devices 			MK		
	<ul style="list-style-type: none"> • Ergonomic advice for prevention / rehabilitation & parents / care givers education about handling of a patient. 			MK		
	Section II:					
9.	Physiotherapy management for the following conditions: <ul style="list-style-type: none"> • Hemiplegia 	10 Hrs	20 Hrs	MK		
	<ul style="list-style-type: none"> • disorders of cerebral circulation & space occupying lesions such as cortical, thalamic & Brain-stem lesions 					
	<ul style="list-style-type: none"> • Types of movement disorders and physiotherapy treatment 					
	<ul style="list-style-type: none"> • Cranial nerves-emphasis on 5th & 7th & 8th nerves. 					
	<ul style="list-style-type: none"> • Cerebral Palsy. -Neurological Rehabilitation in Pediatrics, skills such as Rood's approach, Vojta techniques etc. 					
	<ul style="list-style-type: none"> • Neurological Rehabilitation in adult includes head injury along with other conditions in the syllabus 					
	<ul style="list-style-type: none"> • Principles of pre and post-surgical assessment and management in common Neurosurgery conditions- Surgeries of Head and Neck, Traumatic Brain Injuries, Stroke, Space occupying lesions, Subdural haematoma 					
	<ul style="list-style-type: none"> • Principles of pre and post-surgical assessment and management in Neurosurgery conditions- for Hydrocephalus, Myelomeningocele, C.V. junction anomalies, Syringomyelia 				DK	
	<ul style="list-style-type: none"> • Principles of pre and post-surgical assessment and management in Neurosurgery conditions- for Parkinsonism-Deep brain stimulations. 					NK
	<ul style="list-style-type: none"> • birth injuries, • hydrocephalus 					

	<ul style="list-style-type: none"> • Disease of meanings, 					
	<ul style="list-style-type: none"> • Neuro-syphilis, 					
	<ul style="list-style-type: none"> • Tabes dorsalis, 					
	<ul style="list-style-type: none"> • H.I.V. infection 					
	<ul style="list-style-type: none"> • Viral infection of nervous system-encephalitis 					
	<ul style="list-style-type: none"> • Herpes, 					
	<ul style="list-style-type: none"> • poliomyelitis, 					
	<ul style="list-style-type: none"> • Viral meningitis. 					
	<ul style="list-style-type: none"> • Demyelinating diseases of the nervous System-Multiple sclerosis 					
	<ul style="list-style-type: none"> • Lesions of Extra-pyramidal system & Basal ganglia, Parkinsonism, 					
	<ul style="list-style-type: none"> • spasmodic torticollis, 					
	<ul style="list-style-type: none"> • Athetosis, 					
	<ul style="list-style-type: none"> • Chorea, 					
	<ul style="list-style-type: none"> • Dystonia. 					
	<ul style="list-style-type: none"> • Congenital & Degenerative disorders, 					
	<ul style="list-style-type: none"> • M.N.D. 					
	<ul style="list-style-type: none"> • Herediatry Ataxia, 					
	<ul style="list-style-type: none"> • Peroneal muscle atrophy 					
	<ul style="list-style-type: none"> • S.M.A. 					
	<ul style="list-style-type: none"> • Disorders of spinal cord-paraplegia, 					
	<ul style="list-style-type: none"> • syringomyelia, 					
	<ul style="list-style-type: none"> • Transverse myelitis 					
	<ul style="list-style-type: none"> • Spinal Dysraphysm. 					
	<ul style="list-style-type: none"> • Deficiency disorders- 					
	<ul style="list-style-type: none"> • Sub-acute combined degeneration of spinal cord. 					
	<ul style="list-style-type: none"> • Disorders of peripheral nerves, tumors traumatic, 					
	<ul style="list-style-type: none"> • infective infective& 					
	<ul style="list-style-type: none"> • Metabolic lesions of nerves. 					
	<ul style="list-style-type: none"> • Disorders of voluntary muscles-Dystrophies & 					
	<ul style="list-style-type: none"> • Neuro—muscular junction disorders. 					
	<ul style="list-style-type: none"> • Disorders of Autonomic nervous system 					
	<ul style="list-style-type: none"> • Psycho-somatic Pain & Paralysis. 					
10.	<ul style="list-style-type: none"> • Assistive Device technology, Digital and pervasive technologies for neurological conditions 					

	a) Orthosis :-spine, upper & lower limb	7 Hrs				
	b) Orthosis Planning & Prescription for Adult and Pediatric Neurorehabilitation	8Hrs				
11.	Clinical: <ul style="list-style-type: none"> • Evaluation & Treatment planning, its presentation & documentation of minimum two cases each in • 1) U.M.N. lesion, • 2) L.M.N. lesion, • 3) Pediatric neuro case. 	10 Hrs	20 Hrs	MK		

CLINICAL

Evaluation & Treatment planning, its presentation & documentation of minimum two case each in

- 1) U.M.N. lesion,
- 2) L.M.N. lesion,
- 3) Pediatric neuro case

TEXT BOOKS

- 1) Cash's Text book for physiotherapy in Neurological disorders-Jaypee bros.
- 2) Proprioceptive Neuro muscular Facilitation – by Herman Kabat
- 3) Practical Physical Therapy – Margaret Hollis
- 4) Therapeutic exercise – by O'Sullivan
- 5) "Right in the middle" – by Patricia Davis 6) Stroke rehabilitation – by Margaret Johnson

REFERENCE BOOK

1. Therapeutic exercise – by Basmajian – 5 th edn.
2. Physical Rehabilitation – by Krusen
3. Brain's disorders of Nervous system

SCHEME OF EXAMINATION

Practical Examination: Total 80 Marks

1. Long case: Based on the History 10 marks, Evaluation 10 marks, Treatment plan on Patients 20 marks total (40 marks)
2. Short case: simulated case (20 marks)
3. Five spots: Spots based on EMG/NCV Studies / Orthosis & neuro assessment scale, etc 3 minute & 3 marks each (3x5 = 15 marks)

4. Journal (5 marks)

Theory Examination: Total 80 Marks

Section A

Q.1: MCQ: (20 X 1=20marks)

Section B

Q.2: BAQ: (10 X 2=20marks)

Q.3: SAQ: Answer any 4 out of 5 (4X5=20marks)

Section C

Q.4: LAQ: (2X10=20marks)

1. Should be compulsory
2. Should have one Optional question (i.e. OR)

MCQ's : 20	BAQ's: 20	SAQ's: 20	LAQ's: 20
MK – 12 DK – 06 NK – 02	MK – 06 DK – 03 NK – 01	MK – 02 DK – 02 NK – 01	MK – 02 DK – 01 NK – 00
LEVEL I: 14	LEVEL I: 06	LEVEL I: 03	LEVEL I: 02
LEVEL II: 06	LEVEL II: 04	LEVEL II: 02	LEVEL II: 01

Internal Assessment marks: 20 Marks

(Theory & Practical each rounded of to 20 Marks)

2 Theory Examinations (Terminal & Preliminary): 80 Marks each exam

2 Practical Examinations (Terminal & Preliminary): 80 Marks each exam



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“DEEMED TO BE UNIVERSITY”, KARAD.

KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-43: PHYSIOTHERAPY IN GENERAL MEDICINE AND SURGICAL CONDITIONS

- Didactic Theory Hours - 60 Hours
- Clinical - 150 Hours
- Total - 210 Hours

OBJECTIVES:

At the end of at the course, the candidate will:

1. Identify, discuss & analyze cardio-vascular & pulmonary dysfunction, based on patho-physiological principles, & arrive at the appropriate functional diagnosis.
2. Acquire knowledge of rationale of basic investigative approaches in the medical system & surgical intervention regimes related to cardio-vascular & pulmonary impairment.
3. Acquire the skill of evaluation & interpretation of functional capacity, using simple exercise tolerance tests, such as 6 minutes walk test, symptom limited test.
4. Be able to select strategies for cure care & prevention; adopt restorative & rehabilitative measures for maximum possible functional independence of a patient at home, work place & in community.
5. Be able to execute the effective Physio Therapeutic measures (with appropriate clinical reasoning) with special emphases to Breathing retraining, nebulization humidification, bronchial hygiene, General Mobilization& Exercise conditioning.
6. Acquire Knowledge of the overview of patients care at the Intensive care area, artificial ventilation suctioning, positioning for bronchial hygiene & continuous monitoring of the patient at the Intensive care area.
7. Acquire the skill of basic Cardio-pulmonary resuscitation.
8. Be able to execute the effective physiotherapeutic measures with appropriate clinical reasoning to improve general surgical and medical condition.

Section I:

The following topics are applicable to all the adult & pediatric conditions related to Cardio-respiratory conditions & Peripheral vascular diseases included in the Clinical subjects of IIIrdBPTh. program.

1. Assessment of Respiratory & haemo-dynamics, by means of assessment of breath sounds interpretation of dysfunction by, spirometry / Exercise tolerance test / assessment of thoracic mobility & breathing pattern.
2. Interpretation of radiological & Biochemical investigations & co-relate the same with clinical findings.

3. Functional diagnosis of cardio-respiratory dysfunction & associated Movement dysfunction.
4. Planning short / long terms goals with clinical reasoning – documentation of the conditions given.
5. Application of appropriate skills for breathing re-training & bronchial Hygiene, as preventive (used specifically in preoperative care), restorative & rehabilitative measures.
6. Prescription of appropriate therapeutic exercise program for conditioning.
7. Prescription of home program & ergonomic advice/parents education in case of Pediatric cases with reference to energy cost.
8. Importance of life style modification in prevention of IHD.
9. Use, application of electro therapeutic modalities for relief of pain, swelling and wound healing.
10. Cardio respiratory changes associated with ageing and fitness Programme.
11. Familiarization with concept of quality of life.
12. Active Cycle Breathing Technique.
13. Assessment and Haemo-dynamics, of cardiac surgeries with patients of Heart Transplantation its ICU care management and physiotherapy treatment.

SYLLABUS:

Sr. No	CONTENT	NO OF HOURS		MUST TO KNOW	DESIRABLE TO KNOW	NICE TO KNOW
		60 Hrs	150 Hrs			
1.	Identify, discuss & analyze cardio-vascular & pulmonary dysfunction, based on patho-physiological principles, & arrive at the appropriate functional diagnosis.	3Hrs	5 Hrs	MK		
2	Acquire knowledge of rationale of basic investigative approaches in the medical system & surgical intervention regimes related to cardio-vascular & pulmonary impairment.	3Hrs	5 Hrs	MK		
3	Acquire the skill of evaluation & interpretation of functional capacity, using simple exercise tolerance tests, such as 6 minutes walk test, symptom limited test.	3Hrs	8Hrs	MK		
4	Be able to select strategies for cure care & prevention; adopt restorative & rehabilitative measures for maximum possible functional independence of a patient at home, work place & in community	3Hrs	8Hrs	MK		

5	Be able to execute the effective Physio Therapeutic measures (with appropriate clinical reasoning) with special emphases to Breathing retraining, nebulization humidification, bronchial hygiene, General Mobilisation & Exercise conditioning	3Hrs	8Hrs	MK		
6	Acquire Knowledge of the overview of patients care at the Intensive care area, artificial ventilation suctioning, positioning for bronchial hygiene & continuous monitoring of the patient at the Intensive care area.	3Hrs	8Hrs	MK		
7	Acquire the skill of basic Cardio-pulmonary resuscitation.	1Hr	5 Hrs	MK		
8	Be able to execute the effective physiotherapeutic measure with appropriate clinical reasoning to improve general surgical and medical condition.	2Hrs	8Hrs	MK		
9	Assessment & haemo-dynamics, of cardiac surgeries with patients of Heart Transplantation its ICU care management and physiotherapy treatment .	2Hrs	8Hrs	MK		
10	Interpretation of radiological & Biochemical investigations & co-relate the same with clinical findings.	2Hrs	6 Hrs	MK		
11	Functional diagnosis of cardio-respiratory dysfunction & associated Movement dysfunction.	2Hrs	6Hrs	MK		
12	Planning short / long terms goals with clinical reasoning – documentation of the conditions given.	2Hrs	4Hrs	MK		
13	Application of appropriate skills for breathing re-training & bronchial Hygiene, as preventive (used specifically in preoperative care), restorative & rehabilitative measures	2Hrs	4Hrs	MK		
14	Prescription of appropriate therapeutic exercise program for conditioning.	2Hrs	4Hrs	MK		
15	Prescription of home program & ergonomic advice/parents education in case of Pediatric cases with reference to energy cost.	1Hr	5 Hrs	MK		
16	Importance of life style modification in prevention of IHD.	1Hr	2Hrs		DK	
17	Use, application of electro therapeutic	1Hr	2Hrs			NK

	modalities for relief of pain, swelling and wound healing.					
18	Cardio respiratory changes associated with ageing and fitness Programme.	1Hr	2Hrs		DK	
19	Familiarization with concept of quality of life.	1Hr	2Hrs	MK		
20	Cardiac disorders (Congenital, Acquired, Rheumatic, Rhythm Disturbances IHD, Post Cardio- thoracic surgeries)	1Hr	2Hrs	MK		
21	Pulmonary disorders (Obstructive, Restrictive, Occupational & Pediatric, pulmonary infective.) Precautions with HIV.	1Hr	2Hrs	MK		
22	Peripheral Vascular Diseases.	1Hr	2Hrs	MK		
23	Diabetes (Wound, Ulcer, Glycemic control with exercise)	1Hr	2Hrs	MK		
24	Obesity	1Hr	2Hrs		DK	
25	Burns	1Hr	2Hrs	MK		
26	General Surgery (Mastectomy & Abdominal surgery)	1Hr	2Hrs	MK		
27	Surgical Oncology-Cancer- Definition, Types, Clinical manifestations of Cancer, staging of Cancer, Surgical procedures involved in the management of cancer.- 3Hrs	1Hr	2Hrs		DK	
28	Physiotherapy Technique to increase Lung Volume-Controlled, mobilization, positioning, breathing exercises, Neurophysiological facilitation of Respiration, Mechanical Aids- Incentive Spirometry, CPAP, IAAP	1Hr	7 Hrs	MK		
29	Intensive care unit suctioning, measures to improve Bronchial Hygiene, Positioning for Bronchial Hygiene, Continuous monitoring of the patient, general mobilization.	2Hrs	4Hrs	MK		
30	Skill to palpate all pulses, rhythm, rate, volume & Heart rate / pulse rate discrepancy.	1Hr	2Hrs	MK		
31	Skill to assess B.P. at various sites, & its Physiological variation, & to assess Ankle Brachial Index	1Hr	2Hrs			NK
32	Skill of exercise testing a) 6/12 min walk, b) symptom limited.	1Hr	2Hrs	MK		
33	Interpretation of a. Treadmill & Ergo-cycle test findings. b. ECG, I.H.D. & Blocks, c. Biochemical analysis-serum enzymes, C.P.K. Levels, L.D.H., S.G.O.T., S.G.P.T., TropominT, Lipid profile, electrolyte balance. d. Chest x-ray	2Hrs	4Hrs		DK	

	e.P.F.T. obstructive/restrictive/reversibility f. A.B.G. g. R.P.E. Borg's scale h. Quality of life questionnaires					
34	Evaluation & treatment planning, presentation & documentation of ONE Case Each in : a. Medical Respiratory condition b. Paediatric respiratory condition c. Thoracic Surgical condition d. Cardiac Medical condition e. Cardiac Surgical condition f. Peripheral vascular disorders g. Abdominal surgical condition h. Mastectomy / Amputation.	2Hrs	6Hrs	MK		
35	Active Cycle Breathing Technique	1Hr	1 Hr	MK		
36	Assessment and Haemo-dynamics, of Cardiac surgeries with patients of Heart Transplantation its ICU care management and physiotherapy treatment.	2 Hrs	6 Hrs	MK		
37	Introduction to Evidence based Physiotherapy practice in medical and surgical conditions.	1 Hr			NK	

TEXT BOOKS:

1. Cash's Textbook of Chest, Heart and Vascular Disorders for Physio Therapists- Jaypee
2. Cash's Textbook of Medical & Surgical Conditions for Physio Therapists- Jaypee
3. Tidy's Physiotherapy- Ann Thomson Alison Skinner Joan Piercy
4. Therapeutic exercise – by O' Sullivan
5. Physiotherapy for Respiratory and Cardiac Problems-Jennifer A Pryor, Ammani Prasad
6. CardioPulmonary Physical Therapy -Donna Frownfelter, Elizabeth Dean

REFERENCE BOOK:

1. Chest X-Ray made easy –Jonathan Mary Carroll Ivan Brown
2. Cardio-Pulmonary –Scott Irwin
3. Clinical Cardio-Respiratory- P J Mehta
4. Managing COPD- Richard EK Russell, Paul A Ford

SCHEME OF EXAMINATION

Practical Examination: Total 80 Marks

1. Long Case: based on the History 10 marks, Evaluation 10 marks, Treatment Plan on Patient 20 marks (Total: 40 marks)
2. Short Case: Simulated (20 Marks)
3. Five spots: spots based on, X – ray (Chest), ICU Equipments, Nebulizers, ABG Analysis, Pulmonary Function Testing, ECGetc 3 minutes each spot and 3 marks per spot (3x5 = 15 Marks)
4. Journal (5 Marks)

Theory Examination: Total 80 Marks

Section A

Q.1: MCQ: (20 X 1=20marks)

Section B

Q.2: BAQ: (10 X 2=20marks)

Q.3: SAQ: Answer any 4 out of 5 (4X5=20marks)

Section C

Q.4: LAQ: (2X10=20marks)

1. Should be compulsory
2. Should have one Optional question (i.e. OR)

MCQ's : 20	BAQ's: 20	SAQ's: 20	LAQ's: 20
MK – 12 DK – 06 NK – 02	MK – 06 DK – 03 NK – 01	MK – 02 DK – 02 NK – 01	MK – 02 DK – 01 NK – 00
LEVEL I: 14	LEVEL I: 06	LEVEL I: 03	LEVEL I: 02
LEVEL II: 06	LEVEL II: 04	LEVEL II: 02	LEVEL II: 01

Internal Assessment marks: 20 Marks

(Theory & Practical each rounded of to 20 Marks)

2 Theory Examinations (Terminal & Preliminary): 80 Marks each exam

2 Practical Examinations (Terminal & Preliminary): 80 Marks each exam

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KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-44: PHYSIOTHERAPY IN COMMUNITY HEALTH SCIENCES

- Didactic Theory Hours - 70 Hours
- Clinical - 100 Hours
- Project – 40 Hours
- Total - 210 Hours

Subject	Didactic	Clinical
HEALTH PROMOTION & CBR	20 Hrs	25 Hrs
WOMEN’S HEALTH	20 Hrs	25 Hrs
GERIATRICS HEALTH	20 Hrs	25 Hrs
OCCUPATIONAL HEALTH (ERGONOMICS)	10 Hrs	25 Hrs
PROJECT:40 Hrs		

OBJECTIVES:

At the end of the course the candidate will:

A. Be able to describe:

- The general concepts about health, disease and physical fitness.
- Physiology of aging process and its influence on physical fitness.
- National policies for the rehabilitation of disabled – role of PT.
- The strategies to assess prevalence and incidence of various conditions responsible for increasing morbidity in the specific community – role of PT in improving morbidity, expected clinical and functional recovery, reasons for non-compliance in specific community environment solution for the same.
- The evaluation of disability and planning for prevention and rehabilitation.
- CBR in urban and rural set up.

B. Be able to identify with clinical reasoning the prevailing contextual {e.g. environmental and psycho-social cultural} factors, causing high risk responsible for various dysfunctions and morbidity related to sedentary life style and specific community like women, children, aged as well as industrial workers and describe planning strategies of interventional policies to combat such problems.

C. Be able to conduct as small project {cross sectional study / survey} to assess the prevalence of specific physical health problem and / or morbidity in specific community – which may be based at the institutional level or in field.

HEALTH PROMOTION

Sr.No	Contents	No of Hrs		Must Know	Desirable to Know	Nice to Know
		Didactic 10 Hrs	Clinical 10 Hrs			

1	W.H.O definition of health and disease.	3 Hrs	3 Hrs	MK		
2	Health delivery system – 3 tier.	3 Hrs	3 Hrs		DK	
3	Physical fitness definition and evaluation, Introduction to Evidence based Physiotherapy practice in community based rehabilitation	4 Hrs	4 Hrs	MK		
	i. Effect of growth					
	ii. Physical fitness in women-pregnancy, menopause.					
	iii. Physiology of aging neuromuskuloskeletal, CVS, metabolic and degenerative.					
	iv. Physiological effects of aerobic exercise – clinical reasoning for advocating aerobic exercise as preventive measure in obesity & its related conditions / in cardio-respiratory conditions / Aging/deconditioning effect after prolonged bed rest / Diabetes.					

CBR

Sr.No	Contents	No of Hours		Must Know	Desirable to Know	Nice to Know
		Didactic 10 Hrs	Clinical 15 Hrs			
1	Definition of international classification of Disability.	2 Hrs	3 Hrs	MK		
2	Disability- evaluation, types, prevention.	2 Hrs	3 Hrs	MK		
3	Rehabilitation- definition, types (institutional, reach out and CBR)	2 Hrs	3 Hrs	MK		
4	Team work of medical practitioner, PT/OT, AST, P&O, Clinical psychologist, and vocational counsellors and social workers. CBR – Role of PT. National policies for rehabilitation of disabled – Role of PT.	2 Hrs	3 Hrs			NK
5	*CBR strategies in	2 Hrs	3 Hrs	MK		
	A. Urban area e.g. i. UHC, community centre, clubs, mahilamandals, Social centers. ii. Schools, industries, sports centers. B. Rural area- by using PHC / rural hospital, district hospital / in infrastructure					

WOMEN'S HEALTH

Sr. No	Contents	No of Hrs		Must Know	Desirable to Know	Nice to Know
		Didactic 20 Hrs	Clinical 25 Hrs			
1	Women's Health – Women in India, Social issue having impact on physical Function, Legal rights and benefits.	2 Hrs	1 Hr			NK
2	Anatomical & Physiological variations associated with pregnancy & menopause.	2 Hrs	1 Hr	MK		
3	Antenatal & Postnatal care	3 Hrs	6 Hrs	MK		
4	incontinence and therapeutic interventions	3 Hrs				
5	Advice on labor positions,	2 Hrs	3 Hrs		DK	
6	Pain relief	3 Hrs	10 Hrs	MK		

7	Urogenital Dysfunction	3 Hrs	2 Hrs	MK		
8	Uterine Prolapse	2 Hrs	2 Hrs	MK		

GERIATRIC HEALTH

Sr.No	Contents	No of Hrs		Must Know	Desirable to Know	Nice to Know
		Didactic 20 Hrs	Clinical 25 Hrs			
1	Geriatrics – Senior citizens in India & NGOS, Differential diagnosis in Geriatric illness	3 Hrs	1 Hr		DK	
2	Legal rights, benefits	3 Hrs	1 Hr			NK
3	Institutionalized & Community dwelling elders	3 Hrs	3 Hrs	MK		
4	Physiology of ageing	3 Hrs	5 Hrs	MK		
5	Musculoskeletal & neuro / Cardio respiratory, metabolic changes	5 Hrs	5 Hrs	MK		
6	scheme of evaluation & role of PT in Geriatrics.	3 Hrs	10 Hrs	MK		

INDUSTRIAL HEALTH (ERGONOMICS)

Sr. No	Contents	No of Hrs		Must Know	Desirable to Know	Nice to Know
		Didactic 10 Hrs	Clinical 25 Hrs			
1	Principles of ergonomics in detail	2Hrs	5Hrs	MK		
2	Ability Management – Job analysis:- Job description, Job demand Analysis, Task Analysis, Ergonomics Evaluation, Injury Prevention, Employee Fitness Programme.	2 Hrs	5Hrs	MK		

3	Disability Management:- Acute care, Concept of Functional Capacity Assessment, Work Conditioning, Work Hardening.	2Hrs	10 Hrs	MK		
4	Environmental stress in the industrial area – accidents due to A. Physical agents e.g. heat/cold, light, noise, vibration, UV radiation, ionizing Radiation. B. Chemical agents- inhalation, local action and ingestion. C. Mechanical hazards-overuse/fatigue injuries due to ergonomic alternation and ergonomic evaluation of work place. Mechanical stresses per hierarchy. D. Psychological hazards e.g Monotonicity and Dissatisfaction in Job, Anxiety of work completion with quality, Role of PT. In industrial set up and stress management relaxation modes.	3Hr	11Hr			DK
5	Mechanical stresses per hierarchy I. Sedentary table work-executive’s clerk. ii. Inappropriate seating arrangement- vehicle drivers. iii. Constant standing- watchman, defence forces, surgeons. Iv. Over execution in labourers-stress management. v. Conditioning training and Group Therapy Exercises for specific occupational stressors:	1 Hr	4 Hrs			NK

TEXT BOOKS:

1. Physiotherapy in Gynaecological & Obstetrical conditions – by Poldon – Jaypee
2. Astrand P A Rodahe K-Text book of Work Physiology
3. Therapeutic Exercise – By Kisner
4. Text book of Community Medicine & Community Health – by BhaskarRao
5. Geriatrics Physiotherapy – By Andrew Guccione
6. Industrial Therapy – by Glenda Key

REFERENCE BOOKS:

1. Mural K F –Ergonomics: Man in his working environment
2. Exercise Physiology-by Mc’Ardle
3. Musculoskeletal Disorders in work place: Principle & Practice-by Nordin Andersons Pope
4. Indian Social Problem Vol 2 –by G R Madan
5. Disability 2000-RCI
6. Legal Rights of disabled in India-by GautamBannerjee
7. ICF –WHO Health Organisation 2001 publication
8. Preventive &Social Medicine –by Park
9. Training in the Community for the people with disability –by HallenderPadmini Mendes

10. Disabled Village Children-by David Werner

11. Chorin C& M Desai, C Gonsalves, 1999, Women & the Law, Vol. I & II Socio - legal Information Centre Mumbai

SCHEME OF EXAMINATION

Practical Examination: Total 80 Marks

1. Long Case –Women’s Health /Geriatric/Industrial Health /Health Promotion (Marks 40)
2. Short Case –simulated based on community health problem (Marks 20)
3. Project Presentations and Viva (Marks 15)
4. Journal (Marks 5)

Theory Examination: Total 80 Marks

Section A

Q.1: MCQ: (20 X 1=20marks)

Section B

Q.2: BAQ: (10 X 2=20marks)

Q.3: SAQ: Answer any 4 out of 5 (4X5=20marks)

Section C

Q.4: LAQ: (2X10=20marks)

1. Should be compulsory
2. Should have one Optional question (i.e. OR)

MCQ's : 20	BAQ's: 20	SAQ's: 20	LAQ's: 20
MK – 12 DK – 06 NK – 02	MK – 06 DK – 03 NK – 01	MK – 02 DK – 02 NK – 01	MK – 02 DK – 01 NK – 00
LEVEL I: 14	LEVEL I: 06	LEVEL I: 03	LEVEL I: 02
LEVEL II: 06	LEVEL II: 04	LEVEL II: 02	LEVEL II: 01

Internal Assessment marks: 20 Marks

(Theory & Practical each rounded of to 20 Marks)

2 Theory Examinations (Terminal & Preliminary): 80 Marks each exam

2 Practical Examinations (Terminal & Preliminary): 80 Marks each exam

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KRISHNA COLLEGE OF PHYSIOTHERAPY

Bachelor of Physiotherapy B.P.Th: (4 ½ Years)

Program Code: 3101

3101-45 ETHICS & PRINCIPLES OF PHYSIOTHERAPY PRACTICE

(Didactic 40 Hrs)

OBJECTIVES:

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

1. Describe Management and its principles, branches, theories of management and management in health sector and its application in Physiotherapy.
2. Plan to organize a physiotherapy department
3. Acquire the knowledge of ethical code of professional practice, as well as its moral and legal aspects; & role of IAP, WHO & WCPT
4. Acquire the knowledge about evidence-based physiotherapy and its applications.

I. ETHICS (Didactic 15 Hrs)

Sr No	Topic	Teaching hours	Must know	Desirable to know	Nice to know
		Didactic 15 hours			
1.	Ethical Principles in health care:	1 Hr	MK		
2.	Ethical principles related to physiotherapy: Rules of professional conduct- a. Physiotherapy as a profession b. Relationship with patients c. Relationship at health care institution i.e. hospital, clinic etc. d. Relationship with colleagues and peers e. Relationship with medical and other professionals	4Hrs	MK		
3.	Scope of practice: Introduction, History & General Principles of ethics involving human participants. a. Ethical consideration in physiotherapy practice- State, National & international rules & regulations governing physiotherapy practice. b. Informed consent process c. Good clinical practices (GCP) d. Ethical codes and conduct	6 Hrs	MK		

	for physiotherapy profession. e. Influence of values & valuing on patient care f. Bioethics			DK	
				DK	
4.	Confidentiality and responsibility	1 Hr		DK	
5.	Malpractice and negligence	1 Hr	MK		
6.	Provision of services and advertising	1Hr			NK
7.	Legal aspects: a. Legal responsibility of physiotherapists for their action in the professional context understanding liability and obligations in case of medico legal action b. Consumer protection act	1 Hr			NK

RECOMMENDED BOOKS:-

1. Medical ethics - CM Francis
2. Professionalism in physical therapy: History, practice and development by Laura Lee Swisher and Catherine G. Page, (Elsevier publication 2005)
3. Current problems in medical ethics - M George, V Lobo
4. The Cambridge Textbook of Bioethics - Peter A. Singer

II. PRINCIPLES OF PHYSIOTHERAPY PRACTICE

(Didactic 25 Hrs)

Sr No	Topic	Teaching hours	Must know	Desirable to know	Nice to know
		Didactic 15 hours			
	A) GENERAL PRINCIPLES OF PHYSIOTHERAPY PRACTICE: 5Hrs				
1.	Organization of Physiotherapy department: Planning, Space, manpower, innovative concepts and other basic resources.	2Hrs	MK		
2.	a. Documentation skills- History, examination, treatment planning, organization & execution. b. Theories of management, principles of health sector management, its application to	3 Hrs		DK	

	<p>physiotherapy</p> <p>c. Personal management- Policies, procedures, basic concepts including performance appraisal</p> <p>d. Financial issues- Including budget and income generation</p> <p>e. Hospital management: Hospital organization, staffing, information, communication and coordinator with other services of hospital, cost of services, monitoring and evaluation</p>				NK
	<p>B). EVIDENCE BASED</p> <p>PHYSIOTHERAPY PRACTICE: 20 Hrs</p>				
1.	<p>Introduction to Evidence Based Practice:</p> <ul style="list-style-type: none"> ▪ Definition ▪ Development of Evidence based knowledge ▪ Evidence Based Physiotherapy Practice ▪ Evidence Based Practitioner: The Reflective Practitioner, The E Model, Using the E Model ▪ Concepts of Evidence based Physiotherapy: Awareness, Consultation, Judgement, Creativity 	2 Hrs	MK	DK	NK
2	<p>Finding the Evidence</p> <ul style="list-style-type: none"> ▪ Measuring outcomes in Evidence Based Practice ▪ Measuring Health Outcomes ▪ Measuring clinical outcomes ▪ Inferential statistics and Causation 	2 Hrs	MK	DK	NK
3	<p>Searching for the Evidence</p> <ul style="list-style-type: none"> ▪ Different sources of evidence ,Electronic ▪ Bibliographic databases ▪ World Wide Web ▪ Literature search 	2 Hrs	MK		
4	<p>Assessing the Evidence</p> <ul style="list-style-type: none"> ▪ Evaluating the evidence ▪ Levels of evidence in research using quantitative 	2 Hrs	MK		

	<p>methods</p> <ul style="list-style-type: none"> ▪ Levels of evidence classification system ▪ critical review of research using qualitative methods 				
5	<p>Reviewing the evidence</p> <ul style="list-style-type: none"> ▪ Stages of systematic reviews ▪ Meta-analysis ▪ The CochHrane collaboration 	2 Hrs		DK	NK
6	<p>Economic evaluation of the evidence</p> <ul style="list-style-type: none"> ▪ Types of economic evaluation ▪ Conducting economic evaluation ▪ Critically reviewing economic evaluation ▪ Locating economic evaluation in the literature 	3 Hrs		DK	NK
7	<p>Practice guidelines:</p> <ul style="list-style-type: none"> ▪ Recent trends in health care, ▪ Clinical Practice Guidelines (CPG), ▪ Communicating evidence to clients, managers and funders: 	3Hrs	DK		NK
8	7. Research dissemination and transfer of knowledge:	2 Hrs	DK		

RECOMMENDED BOOKS:

1. American physical therapy association: Guide to physical therapy practice, 2nd edition 2001.
2. Evidence-Based Practice in Nursing and Health Care: A Guide to Best Practice, by Bernadette
3. Evidence-Based Rehabilitation: A Guide to Practice, by Mary Law
4. Achieving Evidence-Based Practice, by Susan Hamer, BA, MA, RGN, FETC (DIST),
5. Carolyn Hicks: Research for physiotherapists: project design and analysis, 2 Ed, Churchill Livingstone, New York, 1995.
6. Thomas JR, Nelson JK: Research Methods in Physical Activity. 4th Ed, Human Kinetics, New Zealand, 2001.
7. Hospital management, accounting, planning and control - Kulkarni GK
8. Principles and practice of management - Srinivasan R & Chunawalla SA

SCHEME OF EXAMINATION

[Theory – 40 marks + internal assessment – 10 marks]

Section A: Q-1, MCQ

Based on single best answer in MUST KNOW area (10x1= 10 marks)

Section B:

Q-2, BAQ To answer any FIVE out of six [5 X 2 = 10 marks]

Q-3, SAQ To answer TWO out of THREE [2 x 5 = 10 marks]

Q-4, LAQ To answer ONE out of TWO [1 x 10 = 10 marks]

INTERNAL ASSESSMENT – Two papers –

Terminal and Prelim examination of 40 marks each. TOTAL 80 MARKS

IA calculated for 10 marks.

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