

Branch Name:	BACHELOR OF PHYSIOTHERAPY
Program Code:	PT101
Course Title:	EXERCISE THERAPY I & SOFT TISSUE MANIPULATION
Course Code:	2PT1010104
Pre-requisite Course:	- NONE -

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)			Credit	Evaluation Scheme (Marks)					
Lecture	Tutorial	Practical		Theory(T)		Practical(P)		Total Marks	
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	Theory	Practical
04	-	04	12	80	20	80	20	100	100

COURSE OUTCOMES:

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

1. Understand the basic mechanical principles and effect of exercise, therapeutic modality in the restoration of physical function.
2. Describe and acquire the skills of application and demonstration of the use of various tools of the therapeutic gymnasium and various starting and derived positions.
3. Describe the physiological and therapeutic effect of various movements and demonstrate in various anatomical planes.
4. Acquire the skills of application of various massage manipulations and describe the physiological effects, therapeutic uses, merits – demerits of the same.
5. Demonstrate and acquire the skill of relaxation.

EXERCISE THERAPY – I

Subject Contents:

Sr. No.	Topic	Total Hours
1	Introduction to exercise therapy.	05
2	Physiological effects and uses of exercise.	05
3	a) Definition of strength, power & work, endurance, muscle actions. b) Physiology of muscle performance: structure of skeletal muscle, chemical & mechanical events during contraction & relaxation, muscle fiber type, motor unit, force gradation. c) Causes of decreased muscle performance d) Physiologic adaptation to training: Strength & Power, Endurance	05
4	Use of apparatus in exercise therapy.	02

5	Fundamental starting positions and its muscle work a) Derived positions and its muscle work b) Effects and uses of starting and derived positions c) Pelvic tilt	15
6	Joint movement a) Terminology b) Normal Range c) Axes and planes of movement d) Levers, e) Measurement of joint movements (goniometry) f) Principles of Goniometry g) Types of goniometer including Universal, bubble and gravity goniometer. h) Methods of measuring joint range of each joint	30
7	a) Causes of restriction of range of movement - Distinguish between skin, muscles, b) Capsular contractures.	05
8	Movement	
	8.1 Classification of movements	02
	8.2 Active movements a) Definition, b) Types c) Techniques Effects and uses.	15
	8.3 Passive movements a) Causes of immobility, b) Classification of Passive movements, c) Specific definitions related to passive movements, d) Principles of giving passive movements e) Types f) Techniques of applications of relaxed passive movements g) Uses h) Comparison of active and passive movements i) Techniques of mobilization for stiff joints	20
9	Group work-Criteria of selection of patients, advantages and disadvantages of group class exercises.	05
10	a) Home exercises b) Trick movements	03
11	Suspension therapy a) Definitions of suspension b) Point of suspension, c) Types of suspension, d) Pulleys and use of pulleys in suspension therapy, e) Application of suspension therapy either to increase the joint range or to increase muscle power	15

12	12.1 Breathing a) Mechanism of breathing (normal) b) Muscles of respiration c) Changes in thoracic cage during process of respiration.	07
	12.2 Breathing Exercises a) Diaphragmatic and segmental breathing b) Principles and techniques c) Therapeutic effects d) Exercises for bronchial hygiene, coughing and huffing, home program e) Pursed lip breathing f) Glossopharyngeal Breathing - significance.	15
13	Normal gait cycle – Phases of gait	07
14	14.1 Walking with walking aids - Crutch walking / Walking with walker, rollator etc a) Types of crutch walking, b) Group of muscles responsible during crutch walking c) Use of parallel bars in pre-crutch walking stage d) Balance exercises as pre-gait training e) Phase of walking in terms of walking with walking aids f) Gait training g) Progression in crutch walking h) Crutch - walking on even surface, slopes, climbing up the stair case 14.2 Measurement of crutches and other walking aids like canes, walkers, tripods other types of crutches.	20
15	a) Measurement of limb length b) Methods of measurements	10
16	Free, Active and Active assisted Exercises a) Classification b) Techniques c) Effects and Uses d) Indications and Precautions e) Application for all the joints f) techniques of mobilization for stiff joints	05
17	Resisted Exercises a) Techniques b) Types of resistance c) How to measure resistance d) SET system (Heavy resisted exercises) e) Oxford method f) Delorme method g) Macqueen's method. h) DAPRE	20
18	Application of resistance to develop endurance and power a) Progression of exercises b) Angle of pull c) Types of muscle work d) Exercises - free resisted, assisted - use of gadget apparatus	10

19	a) Maintenance of record and documentation volume, range of motion, resistance, limb length b) Anthropometric Measurements: Muscle girth – biceps, triceps, forearm, quadriceps, calf	03
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SOFT TISSUE MOBILIZATION:

Sr. No.	Topic	Hours
1	Introduction-brief history, definition, classification.	75
2	Physiological effects and therapeutic uses, contra - indications	
3	Preparation of patient, basic points to be considered before and during massage procedure.	
4	Technique, effects and uses of each manipulation and contraindications.	
5	Specific effects of certain manipulations.	
6	Massage for arm, leg, neck and upper back face.	
7	Massage for edema, scar, tendinitis, fibrosis (tight fascia)	
8	Practice of soft tissue manipulation in subjects	
9	Mobilization of soft tissues, joints and fluid collection.	

List of References:

Text Books:

1. Principles of Ex. Therapy – Dena Gardiner 4th edition.
2. Massage for Therapist- Margaret Hollis 3rd edition.
3. Practical Exercise Therapy - Margaret Hollis & Cook 4th edition.
4. Guide line for Goniometry by Cynthia Norkin & Joyce white- 6th edition.

Reference Books:

1. Therapeutic Exercise foundation and techniques- Kisner 8th edition.
2. Clinical Kinesiology for physical therapist Assistants- published by JP Bros 2nd edition.
3. Dictionary of Physiotherapy, Lakhau Sujata, 2nd Edition.
4. Textbook of Physiotherapy, Nanda, Basantakumar, 1st Edition.
5. Daniles and Worthingham's Muscle testing: Techniques of manual examination and Performance Testing, Avers, Dale Brown, 1st Edition.

List of Open Source Software/learning website:

- [k-hub.in e library/A single platform for all e resources](#) (K-hub, E Resource)
 - User Name- KB4605VNG
 - Password- BL@69BX!
- [knowledgegainer.delnet.in](#) (Delnet, E Resource)
 - User Name-gjspum
 - Password- spu10924

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	To understand the basic Principles and apparatus used in Exercise Therapy.	1 Remembering 2 Understanding 3 Applying
CLO2	Understand the basic biomechanical principles in Physiotherapy.	1 Remembering 3 Applying
CLO3	Describe the physiological and therapeutic effects of various movements.	1 Remembering 2 Understanding 3 Applying
CLO4	Demonstrate and acquire the skills of different Physiotherapy techniques.	1 Remembering 2 Understanding 3 Applying
CLO5	Acquire the skills of application of various massage manipulation and describe the physiological effects, therapeutic uses, merits & demerits of the same	1 Remembering 3 Applying
CLO6	Understanding the ethical principles of exercise therapy, including confidentiality, patient rights, and scope of practice.	1 Remembering 2 Understanding 3 Applying

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Outcomes (POs)								Program Specific Outcomes (PSOs)							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CLO1	M		M						M							
CLO2					M					M				M		
CLO3		M												H		H
CLO4			H		H		M			M	L	L				M
CLO5				L		L							M			M
CLO6								M					M		M	M

H= High M=Medium L=Low