

Subject Title:	EXERCISE THERAPY II
Subject Code:	1PT1010203
Year:	Second Year
Pre-requisite Subject	- NONE -

Objectives of course:

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

1. Describe the biophysical properties of connective tissue and the effect of biomedical loading and factors which influence the muscle strength and mobility of articular and periarticular soft tissue.
2. Acquire the skill of assessment of isolated and group muscle strength subjectively and objectively.
3. Analyze normal human posture and its associated problems, its management.
4. Analyze the various normal musculoskeletal movements during breathing, gait and daily living activities and in terms of biomechanical and physiological principles.
5. Describe and demonstrate various therapeutic exercise with its technique: including chest P.T. on self and also acquire the skill of application on model.
6. To demonstrate general fitness, exercise and shall gain fitness for oneself

Teaching Scheme (Hours)			Evaluation Scheme (Marks)					
Lecture	Practical	Total	Theory(T)		Practical(P)		Total Marks	
			University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	Theory	Practical
150	100	250	80	20	80	20	100	100

Subject Contents			
Sr. No.	Topic	Total Hours	Weight (%)
1	Passive movements: Definition, types, technique, effects and uses, CPM unit, comparison of active with passive movements for all joints of extremities, neck and trunk. Stretching: Definitions related to stretching, types of contractures and differentiation properties of soft tissues affecting elongation and aims of stretching, manual and mechanical stretching, cycle mechanical stretching, indications and aims of stretching, principles and contraindications, MFR (Myo Facial Release) Traction: types, effects, principles of application for cervical and lumbar spine, traction to soft tissues of joints – gliding movements		
2	Mobilization: causes of restriction of R.O.M., prevention of restrictions, techniques of mobilization of various joints of limbs to mobilize joint R.O.M. through functional diagonal patterns, joint mobilization; manipulation-definition, types; joint shapes, types of motion; stretching, glides, compression, traction, indications, contraindications, precautions and conditions for special precautions.		

3	M.M.T.: need of M.M.T., uses, fundamental principles, anatomical and physiological basis, Oxford scale of muscle gradation, principles of isolation, substitution, stabilization, grading procedure for muscles of extremities, neck and trunk. Voluntary control of movement gradation by Bobath, Brunnstrom.		
4	Posture, types, factors influencing posture, regulation of posture and posture mechanism, pelvic tilt and postural deviations of spine and its treatment Crawling exercises: principles, types, effects and uses of Clapp' crawl		
5	Strengthening of muscles(PRE): Principles involved to prevent muscle wasting, Rood's technique of initiating muscle contraction, progressive strengthening of muscles (loads assisted and resisted exercises), use of equipments, reeducation of muscles and restoration of functions, practice of strengthening of muscles of limbs, neck, trunk and face, emphasis on hand and foot muscles, quadriceps, glutei, triceps, deltoid and face muscles, use of annual and mechanical resistance, contraindications, isometric and isokinetic exercises regime, plyometrics, MET (Muscle Energy Techniques)		
6	Proprioceptive Neuromuscular Facilitation: Introduction, responses of NM mechanism, basis techniques of PNF patterns of arm, leg, neck, head and trunk (emphasis on straight patterns), specific techniques of emphasis-repeated contractions – slow reversal, contract and relax, hold and relax, rhythmic stabilization, inhibitory techniques, Bobath Rood's and Kabat.		
7	Relaxation: muscle tone, postural tone, general and local relaxation techniques of relaxation		
8	Neuro Muscular coordination: Factors governing co ordination, principles of re education, Frenkel's exercises and its techniques		
9	Functional Reeducation: Mat activities for re education of hemiplegics, paraplegics and cerebral palsy, walking re education in neurological and orthopedic conditions.		
10	Aerobic exercises: Physiological effects and therapeutic uses, fitness testing, stress testing for healthy and convalescent individuals.		
11	Breathing exercises: Mechanisms of normal breathing, muscles of respiration, changes in thoracic cage during the process of respiration, segmental and diaphragmatic breathing exercises, pursed lip breathing, FET, breathing mechanisms and postural drainage, assistive measures, techniques, indications and contraindications		
12	Hydrotherapy: physiological properties of water and hydrodynamics, physiological and applications of Bad Ragaz Technique, indications and contraindications		
Total Hours		250	