



Module (Course Syllabus) Catalogue 2023-2024

College/ Institute	Erbil Technical Health and Medical College	
Department	Physiotherapy	
Module Name	THERAPEUTIC EXERCISE	
Module Code	THE303	
Semester	3 rd	
Credits	8 ECTS	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	6 hour	
Weekly hours (Theory)	(2)hr Class	()hr Workload
Weekly hours (Practical)	(4)hr Class	()hr Workload
Lecturer (Theory)	Dr. Mahdi Khaled Qadir	
E-Mail & Mobile NO.	mahdiqader@epu.edu.iq	
Lecturer (Practical)	Mardin Salim Adham+ Lawin Shwan	
E-Mail & Mobile NO.		

Course Book

Course Description	<p>This course is concerned with developing theoretical and practical skills in the application of basic exercise techniques including those specifically related to upper, lower limbs and trunk.</p> <p>The course wills techniques and clinical uses of the various techniques of muscle testing and evaluation through practical demonstration and practice sessions. Attention of the students will be drawn to the specific clinical application of each test, position of patient, body mechanics, effect of muscle weakness and contracture, and muscle anatomy.</p>
Course objectives	<ul style="list-style-type: none">• On completion of this course the student will be able to:• Mention the basic principles and procedures relating to some of the therapeutic exercise modalities.• Select the proper type of exercise depending on patients diagnosis• Know the importance and clinical benefits of test and measurements• Know how to prepare environment, equipment and patient for evaluation procedures.• Know the difference between muscle weakness and contracture.• Know the difference between gross and individual muscle testing.• Classify and identify different grades of muscle evaluation.• Apply accurate positions, grasp, stabilization and fixation. testing and take the proper precautions.

Student's obligation	<ul style="list-style-type: none"> • Students should prepare their materials. • Lab coat required during lab. • Preparation of seminar, poster, report.
Required Learning Materials	Hall, projector, lab materials
Assessment scheme	<p>25% Mid Term (Theory and practical)</p> <p>8% Quiz</p> <p>2% class activity</p> <p>10% Assignment (report, paper, seminar..)</p> <p>10% Lab activity and Report</p> <p>5% homework</p> <p>20% final practical</p> <p>20% final theory</p>
Specific learning outcome:	<p>1- Explain The physiological and therapeutic effects of the different therapeutic exercise modalities</p> <p>2- Define and enumerate indications, contraindications, dangers and precautions including techniques of applications</p> <p>3- Demonstrate and acquire meaningful communications for instruction to the patient and ensure his/her comfort throughout the treatment</p> <p>4- Apply accurate positions, grasp, stabilization and fixation.</p> <p>5- Recognize and be able to carry out basic techniques of muscle</p>
Course References:	<p>Therapeutic Exercise: Foundations and Techniques, 6th Edition 6th Edition by Carolyn Kisner PT MS (Author), Lynn Allen Colby PT MS</p> <p>▪ Useful references:</p> <ul style="list-style-type: none"> - Daniels and Worthingham's Muscle Testing: Techniques of Manual Examination and Performance Testing (Daniels & Worthington's Muscle Testing (Hislop)) 9th Edition by Helen Hislop PhD ScD FAPTA (Author), Dale Avers PT DPT

	<p>PhD (Author), Marybeth Brown PT PhD FACSM FAPTA</p> <p>- Measurement of Joint Motion: A Guide to Goniometry 5th Edition by Cynthia C. Norkin DPT EdD (Author), D. Joyce White PT D.Sc</p>	
Course topics (Theory)	Week	Learning Outcome
<p>SUBJECT DESCRIPTION- After the course on exercise therapy student will be able to understand the different types of exercise for the benefit of patient in different situations and conditions both in health and disease or disorder.</p> <p>1. Specific exercise regimens</p> <p>a. Isotonic: de Lormes, Oxford, MacQueen, Circuit weight training</p> <p>b. Isometric: BRIME (Brief Resisted Isometric Exercise), Multiple Angle</p> <p>c. Isometrics Isokinetic regimens</p>	1	1,2,5
<p>2. Proprioceptive Neuromuscular Facilitation</p> <p>a. Definitions & goals</p> <p>b. Basic neurophysiologic principles of PNF: Muscular activity, Diagonals patterns of movement: upper limb, lower limb</p> <p>c. Procedure: components of PNF</p> <p>d. Techniques of facilitation</p> <p>e. Mobility: Contract relax, Hold relax, Rhythmic initiation</p> <p>f. Strengthening: Slow reversals, repeated contractions, timing for emphasis, rhythmic stabilization Stability: Alternating isometric, rhythmic stabilization</p> <p>g. Skill: timing for emphasis, resisted progression Endurance: slow reversals, agonist reversal</p>	2	1,2,4,5
<p>3. Suspension Therapy</p> <p>a. Definition, principles, equipments & accessories, Indications & contraindications, Benefits of suspension therapy</p> <p>b. Types of suspension therapy: axial, vertical, pendular Techniques of suspension therapy for upper limb Techniques of suspension therapy for lower limb</p> <p>.</p>	3	1,2,5
4. Functional Re-education	4	1,2,5

a. Lying to sitting: Activities on the Mat/Bed, Movement and stability at floor level; Sitting activities and gait; Lower limb and Upper limb activities.		
5. Aerobic Exercise a. Definition and key terms; Physiological response to aerobic exercise, Examination and evaluation of aerobic capacity – Exercise Testing, Determinants of an Exercise Program, The Exercise Program, Normal and abnormal response to acute aerobic exercise, Physiological changes that occur with training, Application of Principles of an Aerobic conditioning program for patients – types and phases of aerobic training.	5	1,2,5
6. Stretching a. Definition of terms related to stretching; Tissue response towards immobilization and elongation, Determinants of stretching exercise, Effects of stretching, Inhibition and relaxation procedures, Precautions and contraindications of stretching, Techniques of stretching.	6	1,2,4,5
7. Manual Therapy & Peripheral Joint Mobilization a. Schools of Manual Therapy, Principles, Grades, Indications and Contraindications, Effects and Uses – Maitland, Kaltenborn, Mulligan b. Biomechanical basis for mobilization, Effects of joint mobilisation, Indications and contraindications, Grades of mobilization, Principles of mobilization, Techniques of mobilization for upper limb, lower limb, Precautions.	7	1,2,4,5
8. Balance - Definition a. Physiology of balance: contributions of sensory systems, processing sensory information, generating motor output b. Components of balance (sensory, musculoskeletal, biomechanical) c. Causes of impaired balance, Examination & evaluation of impaired balance, Activities for treating impaired balance: mode, posture, movement, Precautions & contraindications, Types Balance retraining	8	1,2,5
9. Co-ordination Exercise a. Anatomy & Physiology of cerebellum with its pathways Definitions: Co-ordination, Inco-ordination b. Causes for Inco-ordination, Test for co-ordination: equilibrium test, non-equilibrium test Principles of co-ordination exercise. c. Frenkel's Exercise: uses of Frenkel's exercise, technique of Frenkel's exercise, progression, home exercise.	9	1,2,5
10. Posture a. Definition, Active and Inactive Postures, Postural Mechanism, Patterns of Posture, Principles of re-education: corrective methods and techniques, Patient education.	10	1,2

11. Walking Aids a. Types: Crutches, Canes, Frames; Principles and training with walking aids	11	1,5
12. Hydrotherapy a. Definitions, Goals and Indications, Precautions and Contraindications, Properties of water, Use of special equipment, techniques, Effects and uses, merits and demerits	12	1,2,5
Practical Topics	Week	Learning Outcome
Starting position and Derived position.	1	1,2,5
General and local Relaxation techniques	2	1,2,4,5
Strengthening exercise	3,4	1,2,5
Stretching exercise	5,6	1,2,5
Open and Close Kinetic exercise	7	1,2,5
Suspension exercise to all major joints	8	1,2,4,5
Balance exercises	9	1,2,4,5
Massage – upper limb, lower limb, back, face Manual muscle testing of individual muscles	10	1,2,5
Range of motion (PROM, AROM, AAROM) exercises to all joints	11,12	1,2,5

Examples of exam questions:

Q: True and false questions (correct the false one):

1. <u>Standing Position effects and uses</u>
a. The hips are extended and slightly internally rotation.
b. The shoulders are down and back
c. The knee are slightly flexed.
d. It is used as <u>starting position</u> for a number of free- <u>standing exercises</u>

Q: Single Choice Questions:

1. Stretching is the.....

- a. Slow and sustained forced passive movement
- b. Sudden but controlled forced passive movement
- c. Relaxed passive movement
- d. Manipulation

2. For goniometry is done first.

- a. Align the fixed arm with the proximal segment
- b. Align the movable arm with the distal segment
- c. Align the axis over the anatomical axis of the joint
- d. None of the above.

Q: fill with appropriate words: (10 marks)

- 1. Coordination refers to using the right muscle, at the right time with the right intensity.

Q: Match the following statements in the column (A) with appropriate definitions in the column (B):

Answers	A	B
	1. Roll	a. Example: pronation/supination
	2. Spin	b. Passive joint movement for increasing joint mobility
	3. <i>Manipulation</i>	c. Skilled manual therapy interventions
	4. Joint manipulative techniques	d. Decrease in space between two joint surfaces
	5. Compression	e. Example: Femoral condyles rolling on tibial plateau

Q: Enumerate the following:

1. Goals of Stretching

- 1-
- 2-
- 3-

Q:What types of exercise you chose for these cases:

patient with muscular problem and the power muscle is 2:

Extra notes:

External Evaluator

This course book is so beneficial and it included what is important for physiotherapist regarding therapeutic exercises and methods and it is well organized and there is well integration between theoretical and practical sessions.

Regard

Dr. Zekra Ali Aziz
MSc. Rheumatology and Medical Rehabilitation