

ADVANCED THERAPEUTICS

Course Title	Advanced therapeutics	
Course Code	PT601	
Course Credit	Lecture:6	
	Practical/Clinical training : 2	
	Total: 8	
<b>Course Objectives:</b>		
<ol style="list-style-type: none"> <li>1. In this subject, the student will learn in detail about advanced therapeutics and its application besides exercise therapy and electrotherapy.</li> <li>2. Students should be in expertise in hands on skill and clinical decision making for treatment purpose.</li> <li>3. Update the knowledge of advance and implement in clinical practice.</li> <li>4. To learn the applied aspect of the subject for physiotherapy practice.</li> </ol>		
#	Name of chapter and Details	Hours
SECTION – I		
1	<b>Introduction to Advance Therapeutics Principals and practice of various exercises with hands on skill, clinical reasoning and evidence based practice.</b>	3
	Prescription and Dosimetry for Exercise therapy	2
2	<b>Advance Therapeutics in Exercises Therapy Instruments:</b> Principles, Indications, Contra-indications, Method of application of the following exercise/instruments:	2
	Vestibular Ball, thera bands, thera tubes, malleable materials	2
	Continuous Passive Motion Machine	2
	Treadmill and Bicycle Ergometer	2
	Dynamometer, Isokinetic devices	1
3	<b>Advance Therapeutics in Exercises Therapy With hands on skill, clinical reasoning and evidence based practice.</b>	4
	<b>Advance therapeutics in basic components of Exercises therapy stretching, strengthening and mobilisation</b>	6
	<b>Stretching</b> PNF, etc.	6
	<b>Strengthening</b> PRE, Functional Strengthening, PNF	6
	<b>Mobilisation</b>	12

	Terminology, Principles, Method of application of the following techniques in Brief on Mulligan, McKenzie, Maitland, Neurodynamics, Kaltenborn, Cyriax, Positional Release Techniques, Muscle Energy Techniques, Myofascial Release techniques, and others	
4	<b>Advance therapeutics for balance and coordination</b>	
	Balance exercise, Exercise for weakness, Exercise for movement strategies, Static balance exercise, Dynamic balance exercise, Balance exercise for vestibular dysfunctions, etc...	3
	Advance coordination exercises	3
5	<b>Aerobic exercises:</b>	
	Physiological effects and therapeutic uses	2
	Fitness testing – exercises tolerance tests (ETT) Stress testing for healthy and convalescent individuals Test to identify the physical fitness for athletes, sedentary people and patients recovering from illness - rehabilitation.	2
	<b>Therapeutic exercises – interval training program</b> Exercises to improve the physical performance Interval training, circuit training, individual exercises program, functional training program	4
	Energy Conservation Techniques	1
	<b>Special therapeutic approaches for special groups conditions</b> Children, adult, elder, women's,	4
6	<b>Special therapeutic approaches for specific conditions</b> General fitness program Cardiac fitness program Geriatric fitness program Weight management program – over or under wright Arterial verses venous insufficiency, Lymphatic Disorders Pelvic Floor Exercises, Exercise For, etc...	4
7	<b>Respiratory exercises :</b>	
	Chest expansion Exercises, Breathing exercises Postural Drainage, etc...	4 5
<b>SECTION II (ELECTROTHERAPY)</b>		
8	<b>Introduction of advance therapeutics in Electrotherapy</b>	1
	<b>Introduction to Advance Therapeutics in electrotherapy</b> <b>Principals and practice of various Electrotherapy with hands on skill, clinical reasoning and evidence based practice.</b>	4
	Prescription and Dosimetry for electrotherapy	2

	<b>High – Low and Medium frequency currents including:</b> SWD, US, LASER, TENS, IFT, Microwave therapy	10
	Physical agents: IR, UVR, Cryotherapy, moist heat, electrical stimulation, etc...	8
9	<b>Long Wave Therapy and Shock Wave Therapy</b>	2
	Definition, characteristics and mechanism of production, Method of applications, etc...	10
10	<b>LASER</b>	
	Definition, characteristics and mechanism of production, Method of application	6
	Types of LASER, Parameters: Penetration, Duration and Frequency of treatment	4
	Effects: Physiological effects and therapeutic effects.	3
	Indications and Contraindications, Dangers and Precautions, etc...	2
11	<b>Functional Electrical Stimulation</b>	5
12	<b>Biofeedback : Sensory and Motor</b> Normal individual: stress management, etc... Biofeedback in various applied sciences Musculoskeletal science Neuromuscular science Cardiovascular and pulmonary sciences Special conditions	6
	<b>Combined Therapy</b>	
	Principles, Techniques of application	4
	Physiological effect and Therapeutic effects	4
	Indications, Contraindications, Dangers, etc...	2
14	<b>Computerization in electrotherapy</b>	2
15	<b>Combination of exercises and electrotherapy in Practice Prescription, modification e.g. pain and loss of function,</b>	5
<b>Instruction Method</b>		
<ol style="list-style-type: none"> <li>Teaching and training sessions will be carried out through active learning. Active participation and contribution in group discussion and seminars are mandatory for students</li> <li>Lectures to be conducted with the help of black board and/or audio-visual aids that includes multi-media projector, OHP, etc.</li> <li>Problem based and/or case based assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval.</li> <li>The course includes a laboratory where the students have an opportunity to</li> </ol>		

build and appreciation for the concepts being taught in lectures.

5. Instruction method will be integrated with clinical training, bedside / class room teaching and tutorials as necessary.

#### **Textbooks**

1. Practical Exercise Therapy by Margaret Hollis, 4th Edition; Blackwell Sciences Publication
2. Therapeutic Exercise: 6<sup>th</sup> edition. Carolyn K; Kolby. Jaypee Brothers Medical Publishers
3. Clayton's Electrotherapy (theory and practice): 8<sup>th</sup> edition. Forster A; Palastanga N, AIBS publication.
4. Electrotherapy: Evidence Based Practice: 11<sup>th</sup> edition. Sheila Kitchen. Churchill Livingstone

#### **Reference Books**

1. Therapeutic Exercise: Treatment Planning for Progression. Huber FE. Saunders Publication 2006
2. Hydrotherapy: Principles and Practice: 2<sup>nd</sup> edition. Campion MR; Pattman JA. Butterworth-Heinemann 2007
3. Physical Agents in Rehabilitation: From Research to Practice: 4<sup>th</sup> edition. Cameron MH. Saunders.
4. Therapeutic Exercise Moving Toward Function: 3<sup>rd</sup> edition. Carie MH; Brody LT. Lippincott Williams and Wilkins.



# SYLLABUS