Module (Course Syllabus) Catalogue
2023-2024

College/ Institute	**Erbil Technical Health**	
Department	**Physiotherapy**	
Module Name	**Physical Therapy Intervention**	
Module Code	PII305	
Semester	**4th**	
Credits	**6 ECTS**	
Module type	**Prerequisite** ☐ **Core** 1 **Assist.** ☐	
Weekly hours		
Weekly hours (Theory)	**(2)hrs Class**	**( )hr Workload**
Weekly hours (Practical)	**(4)hrs Class**	**( )hr Workload**
Lecturer (Theory)	**Sardar Qader Othman** **Nawroz Ismail Hasan**	
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Lecturer (Practical)	**Sardar Qadr Othman** **Nawroz Ismail Hasan** **Govar Sarbaz** **Hardi** **Hawar**	
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Course Book

Course Description	This course serves as a foundation for other medical Rehabilitation courses of the program. It is designed to provide Physiotherapy students with the knowledge of the basic principles of the Physiotherapeutic agents used in the medical rehabilitation field, via providing all the required skills for using these agents and devices in the right way and for the right cases. The course emphasizes the aim of the physical therapy and its classification according to the use. This course also provides laboratory guided experience which helps the physiotherapy students to develop skills needed for the correct use of the available devices on a safe and helpful base. The course focuses on development of skills related to the aim of using the physiotherapy device; the technique of using each

	physical agent; main indications and contraindications of each single device, and their side effects. Throughout this course the students will develop. their knowledge and skills concerning the physiotherapy devices and the method of using them, as a preparation for their practical performance to be safest and most efficient in dealing with this crucial part of medical rehabilitation through their commencing practical life.
Course objectives	On completion of this course the student will be able to: • • Understand development and basic principles of physiotherapeutic modalities and devices. • • Understand the aim of using physiotherapy devices. • • Describe the classification of the physiotherapeutic modalities. • • Recognize the basic indications and contraindication of each physical modality. • • Understand the physiological effects and mechanism of action of each physical modality on the body and their advantages and disadvantages. • • Understand the method and technique of use of each single physiotherapeutic device. • • Recognize the main side effects of the physical agents and how to avoid them. Develop skills for putting strategic plan for applying and utilizing the devices case by case.
Student's obligation	Students should attend the lectures Students should take all exams including daily quizzes and practical exam
Required Learning Materials	**Theory**: lecture halls with computers equipment for lecture presentations, white board, overhead projector. **Laboratory practice**: a laboratory equipped by all the with physiotherapeutic agents and devices for training issue, and to make the students familial with those devices and the way of using them, the main devices and agents include: Heat therapy devices ex. (Hot packs of different sizes and shapes, Paraffin bath, Infra-red and ultraviolet light radiation, Hydrotherapy,

	Ultrasound Diathermy device, Microwave diathermy and short wave Diathermy device), white board, computer with equipment for PowerPoint presentations, overhead projector, posters **General:** library, computer suite with internet access
Assessment scheme	16% Mid Term (Theory and practical) 4% Quiz 40% Assignment (report, paper, homework, seminar..) 25% final practical 15% final theory
Specific learning outcome:	1- Ability to develop general knowledge in physiotherapy and understand the subjects of the module 2- Ability to understand and use, of general physics in physiotherapy. 3- Demonstrate the ability to think critically and solve problems 4-Ability to apply knowledge in practice 5- Ability to make reasoned decision. 6-Demonstrates research skills to investigate, evaluate or problem solve.
Course References:	Key references: Electrotherapy Simplified by Basanta Kumar Nanda ▪ Useful references: Electrotherapy Simplified by Basanta Kumar Nanda, Introduction of Modern Physics in Medicine by Suzanne Amador Kane ▪ Magazines and review (internet):

Course topics (Theory)	**Week**	**Learning Outcome**

Week	**Outline**	**No. of Hours**
		Theory
1.	Electrical energy modalities	**1**

2.	Electricity 1 Definition and types 2 Therapeutic uses 3 Basic physics 4Working 5 Importance of current in treatment 6 Uses	**2**
3.	Basic concept in electric stimulation1 Resting Membrane Potential 2 Action Potential 1 Definition 2 Principles 3 Types –Low Frequency current and Medium Frequency current 4 Types of Low Frequency Current Interrupted Galvanic Current/Modified Direct Current/Interrupted Direct Current Faradic Type Current Tens Iontophoresis Sinusoidal Current High Voltage PulseGalvanic Stimulation (HVPGS) Diadynamic Current Functional Electrical Stimulation (FES) 5Types of Medium Frequency Current Interferential Current- .2 Pole IFC (Russian Current-2000HZ, 1Medium Frequency Current-4000HZ) 2.4 Pole IFC(4000HZ-4100HZ)- Classical &Vector	**3**

Practical :

Week	**Outline**	**No. of Hours**
		Practical/Lab. Application
1.	Equipment’s used in electrotherapy, Introduction andclassification.	**2**
2.	Faradic Current Technique of application of Faradic Current Motor Point Preparation of apparatus (Assembling, Testing) Preparationof patient Stimulation of motor point	**6**
3.	Interrupted direct current Technique of application of IGC Motor Point Preparation of apparatus (Assembling, Testing) Preparation of patientStimulation of motor point	**6**

	4.	Electro diagnosis - Principles of electro diagnosis SD Curve Rheobase, Chronaxie Electromyography (EMG) Definition Recording electrodes Myoelectrical signal, amplifiers,display devices Basic wave pattern of an EMG signal Nerve Conduction Test (MCV, NCV) H reflex F WaveFaradic-IDC test Galvanic tetanus ratio - SD Curve Test Definition Type of current used, shape, frequency Procedure, Characteristic of curve (Normal, Partial, Complete denervation) Factors that affect accuracyof SD curve	**6**	
	5.	TENS Parameter of Tens-Waveform, Frequency, Pulse width,amplitude Type of Tens- 1. High Frequency Low Intensity Tens or Conventional Tens 2. Acupuncture like Tens 3. Brief Intense	**6**	
	6.	Sinusoidal current; It is similar in its effects in almost every respect to the faradic current. • However, it differs from the faradic current in that:		
	7.	Diadynamic current: Diadynamic currents are basically a variation of sinusoidal current. They are monophasic sinusoidal currents (rectified alternating current) with duration of 10 ms.		
	8.	Electromyography: Technique of recording the electrical activity of motor unit firing , Not muscle force per se, but the ECG electrical signal sent by the motor nerves to muscle fibers to create force.		
	9.	Traction: it is a medical application of balanced forces acting at the center of mass. Traction is the act of drawing or pulling and relates to forces applied to the body to stretch a given part or to separate two or more parts.		
	10.	Vibration: it is a physical factor that acts on the human body by transmission of mechanical energy from sources of oscillation. The biomechanical factors determining its intensity are amplitude, frequency, and magnitude of the fluctuations.		

ECTS Workload Form

Activity	Description	Activity Type	No	Time Factor	Workload
Course	Theory In Class	Face to face activity hours	12	2	24
Course	Preparation Theory	Household activity hours	12	3	36
Course	Practical	Face to face activity hours	12	2	24
Course	Preparation Practical	Household activity hours	12	2	24
Assignment	Homework	Household activity hours	2	2	4
Assignment	Report	Household activity hours	2	2	4
Assignment	Seminar	Household activity hours	1	5	5
Assignment	Class Activity	Face to face activity hours			It's only to set degree
Assessment	Quiz	Household activity hours	4	1	4
Assessment	Mid Term Thory	Face to face activity hours	1	2	2
Assessment	Mid Term Theory Preparation	Household activity hours	1	6	6
Assessment	Mid Term Practical	Face to face activity hours	1	1	1
Assessment	Mid Term Practical preparation	Household activity hours	1	4	4
Assessment	Final Theory	Face to face activity hours	1	2	2
Assessment	Final Theory Preparation	Household activity hours	1	8	8
Assessment	Final Practical	Face to face activity hours	1	2	2
Assessment	Final Practical preparation	Household activity hours	1	6	6
Site Visists and Lab Experiments	Lab. Reports & Activities	Household activity hours	3	1.25	3.75

Face to face huors/12 week	4.58	Face to face huors	55
Home huors/16 week	6.55	Home huors	104.75
Total huors/20 week	9.98	Total huors	159.75
ECTS (Total hours / 27)	5.916666667	Accepted	

Extra notes:

External Evaluator

The Course book comprehensively covers all electrotherapy. The theoretical part include the basic of electricity, the concepts of electric stimulation and the concept of physics behind the used therapeutic equipment and also the physiological benefit of the equipment. In addition, the course also provide practical sessions that enable student tolearn practically the procedures of using the equipment.

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Lecturer
Chiman Bakir Ismail