Miami Dade College

Course Description

PHT1211 | Disabilities and Therapeutic Procedures 1 | 2.00 credits

This course introduces theory and practical applications of physical therapy biophysical agents. The physiologic effects, indications, contraindications, and intervention parameters of patient care interventions including electrotherapeutic agents, compression therapies, cryotherapy, hydrotherapy, superficial and deep thermal agents, traction, and therapeutic massage are presented. Prerequisites: BSC2085, BSC2085L, PHY1004, PHY1004L; Corequisites: PHT1102C, PHT1201, PHT1201L, PHT1211L

Course Competencies:

Competency 1: The student will understand the physical agents associated with Physical Therapy by:

1. Defining pain and edema
2. Defining analgesia hyperalgesia, paresthesia
3. Listing three ways the pain cycle may be physically blocked
4. Defining the sensory unit and location of "pain" fibers
5. Listing effects of edema on the status of the patient
6. Defining Trigger area
7. Defining psychosomatic pain
8. Listing medical or orthopedic disorders leading to the development of edema
9. Describing the physiological effects of local heating on tissue temperature, metabolism, vascular system, lymphatic system, and nervous system
10. Listing immediate and secondary responses of the body to heat and cold
11. Briefly describing how external heat affects the body's heat-regulating mechanisms
12. Identifying general indications and contraindications for the use of therapeutic heat
13. Identifying general indications and contraindications for the use of therapeutic cold
14. Defining the following methods of heat transmission: conduction, convection, radiation and conversion
15. Matching the source with the form of energy and the method of heat transmission when given a source of heat
16. Discussing the role of modalities in the total treatment plan of a patient with a specific disability

Competency 2: The student will understand Superficial Heating Agents by:

1. Describing the physiological effects, indications, contraindications and physical therapy procedures for the application of hot packs
2. Describing the physiological effects, indications, contraindications and physical therapy procedures for the application of paraffin
3. Describing the physiological effects, indications, contraindications and physical therapy procedures for the application of infrared
4. Describing the depth of penetration of infrared

Competency 3: The student will understand Cryotherapy by:

1. Listing some of the possible forms of cryotherapy treatment
2. Describing the physiological effects, indications, contraindications, and physical therapy procedures for application

Competency 4: The student will understand Hydrotherapy/Asepsis by:

1. Describing the physical properties of water
2. Listing the effects, indications, and contraindications for various hydrotherapy modalities
3. Listing indications for terminating a treatment prematurely
4. Defining asepsis
5. Defining infection and briefly explaining how infection is transmitted and controlled

6. Describing the indications and procedures for aseptic technique
7. Listing some common anti-bacterial agents used in the clinic

Competency 5: The student will demonstrate an understanding of ultrasound by:
1. Listing indications, contraindications, and precautions for the use of ultrasound
2. Explaining how the patient dosage is determined when applying ultrasound
3. Listing techniques for the application of ultrasound
4. Listing and describing the primary effects of ultrasound
5. Describing the procedure for the application of ultrasound
6. Comparing the physiological difference in the effects of pulsed ultrasound as compared to continuous ultrasound
7. Discussing indications for trigger-point technique in ultrasonic therapy
8. Listing indications, contraindications, precautions, and procedures for the application of phonophoresis

Competency 6: The student will understand Electromagnetic radiations by:
1. Listing the indications, contraindications, and precautions for the use of diathermy
2. Explaining the dosage scale used in short-wave diathermy
3. Listing the physiological effects of deep heating with short wave diathermy
4. Describing the procedure for applying diathermy
5. Listing the indications, contraindications, and precautions for the use of microwave
6. Describing the procedure for applying microwave
7. Listing contraindications and precautions for treatment with ultraviolet radiation
8. Listing the physiological effects of the erythemal doses of ultraviolet
9. Describing the penetration depth of ultraviolet rays
10. Discussing the factors which influence the production of U.V. erythemal
11. Describing the procedure for determining patient sensitivity to U.V. rays
12. Describing the procedure for ultraviolet application
13. Listing some medical and pathological conditions indicated for treatment with ultraviolet

Competency 7: The student will understand Electrotherapy by:
1. Defining motor unit, tension, tetanus
2. Describing the primary physiological mechanism of nerve conduction and muscle contraction
3. Defining direct current, interrupted direct current and alternating current, unipolar and bipolar stimulation
4. Describing how to decrease skin resistance to electrical current
5. Explaining how dosage is determined when giving electrical stimulation
6. Listing the indications, contraindications, precautions, and procedures for applying various electrotherapy modalities

Competency 8: The student will understand massage by:
1. Defining massage
2. Describing the mechanical effects of massage
3. Describing the physical effects of massage
4. Describing the general procedure(s) for performing a massage treatment
5. Listing indications and contraindications for massage in general
6. Describing the relationship of massage to the total treatment program
7. Observing proper body mechanics while performing a massage
8. Describing the various types of massage

<u>Learning Outcomes:</u>
- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Create strategies that can be used to fulfill personal, civic, and social responsibilities
- Demonstrate knowledge of ethical thinking and its application to issues in society
- Use computer and emerging technologies effectively