

## New Course Development: Foundations in Therapeutic Exercise

This change will go into effect for spring, 2013, following the inclusion of A & P 1 as a pre-requisite.

**Course Title:** Foundations in Therapeutic Exercise

**Course Number:** PTAS-204

**Placement in Curriculum:** First Year, Second semester

**Credit Distribution:** 3 credits [2 didactic, 2 laboratory (3 hours)]

**Pre-Requisites:** PTAS-100, PTAS-101, PTAS-203

**Co-Requisites:** PTAS-200, PTAS-201, PTAS-202

**Course Description:** This course presents the theory, physiological effects, and applications of therapeutic exercise in the physical therapy setting. Topics will include range of motion, stretching, resistance and cardiovascular/aerobic activity. Application will include demonstration and skill development of common therapeutic exercises for the regions of the human body.

### **The student should develop an understanding of:**

### **The student should be able to:**

I. The general concepts of Therapeutic Exercise

- a. Define therapeutic exercise and its impact on physical function.
  - b. Compare the terminology of the three models of disablement.
  - c. Discuss the Guide to Physical Therapist Practice, how it is organized, and how it is used in clinical decision-making during the delivery of PT services.
  - d. Describe the five basic components of the patient management model.
  - e. Discuss why it is important for the PTA to understand and be able to articulate (verbally or in written form) the inter-relationships among pathology, impairments, functional limitations and disability.
  - f. Discuss practical elements of effective patient education that are appropriate for various patient populations.
- a. Compare and contrast the indications, goals and limitations of passive range of motion (PROM), active-assisted range of motion (AAROM) and active range of motion (AROM), as well as the precautions and contra-indications for each type.
  - b. Demonstrate competency and efficiency in the fundamental skills of PROM, AAROM and AROM, applying good body mechanics.
  - c. Supervise the application of AROM to a "Patient" in a mock clinical setting.

II. Range of Motion

**The student should develop an understanding of:**

**The student should be able to:**

III. Stretching techniques

IV. Resistance exercise

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- d. Identify and appropriately use various equipment in range of motion exercise (e.g., CPM, overhead pulley, powder board, UBE).
  - e. Competently perform PROM with a "patient" in prone, side-lying and supine.
  - f. Progress the "patient" from PRON to AAROM and AROM and determine the effects of gravity and the effort required in these positions compared to that in the supine position.
  - g. Compare the ROMs of the hip, knee and ankle when each of the two-joint muscles is elongated over its respective joint versus when each is slack.
  - h. Demonstrate the appropriate application of patient, PTA and hand positioning in the performance of PROM for upper and lower extremity joint movements.
- a. Describe the mechanical properties of contractile and non-Contractile tissue.
  - b. Identify factors that contribute to restricted range of motion.
  - c. Contrast differences between Golgi tendon organs and muscle spindles and discuss how this relates to stretching soft tissue.
  - d. Apply the variables associated with proper stretching technique (e.g., stabilization, intensity and mode of stretch) to achieve desired outcomes.
  - e. Apply different neuromuscular inhibition techniques (e.g., hold-relax, contract-relax, and hold-relax with agonist contraction) in a stretching program and discuss benefits of each.
  - f. Select and apply appropriate adjuncts to stretching interventions (e.g., heat, massage, relaxation training).
  - g. Select an appropriate mode of stretching intervention based on patient diagnosis and goals as established by the PT.
  - h. Given a PT goal, design and implement an effective series of self-stretching exercises for a home exercise program.
- a. Compare and contrast the basic principles of resistance training (e.g., SAID, overload, reversibility).
  - b. Describe the potential benefits of resistance exercise and how they relate to the three elements of muscle performance (e.g., strength, power, endurance).
  - c. Describe variables that can influence muscle adaptation (e.g., energy stores, fatigue, age, motivation, recovery).
  - d. Describe physiological adaptations to resistance exercise.
  - e. Apply the variables associated with proper strengthening techniques to achieve desired outcomes.
  - f. Contrast concentric, eccentric and isometric contractions.
  - g. Define open and closed chain exercises and identify various exercises as either.