

**OAKLAND UNIVERSITY  
SCHOOL OF HEALTH SCIENCES  
PROGRAM IN PHYSICAL THERAPY  
CERTIFICATE IN ORTHOPEDIC MANUAL PHYSICAL THERAPY  
Winter 2018**

**[PT 8871 Applied Movement Sciences:](#)**

**Course Catalog Description:**

This course focuses on symptomatic and activity limiting movement disorders associated with common orthopedic conditions. Students will perform therapeutic exercises interventions in a lab setting and based on instruction and presentations made by the instructor of record. Rationale for exercise prescription will be based on the orthopedic condition, condition acuity, stage of tissue healing, and grade of arthritic (cartilaginous) and discogenic degeneration. Student must be admitted to a Physical Therapy post-professional program or have permission of department.

**Detailed Course Description:**

This course is designed to enhance student understanding of the therapeutic exercise management of the pain, postural, weakness, stiffness and laxity (hypermobility/instability) impairments that are often associated with common orthopedic spinal, extremity conditions. Exercise for IVD degeneration, tendon and cartilaginous degeneration and injury are an emphasis of this course.

Common orthopedic conditions will be briefly discussed in class and more comprehensive Power Points addressing these conditions and associated impairments will be posted on Moodle. Therapeutic exercises that assist in the management of impairments commonly found during the physical examination of a patient with one of these orthopedic conditions demonstrated and practiced in class.

Clinical reasoning regarding exercise prescription and exercise modification will be discussed. Examples of exercise modification may include changing or altering therapeutic position, loading, arc, type, or speed of a therapeutic motion. The participant's own body awareness and movement performance of all therapeutic exercises will be tested and discussed.

Therapeutic exercise including spinal and extremity stabilization exercises, active and passive self-mobilization/stretching exercises, exercises for temporary pain relief and muscle, tendon, cartilage and intervertebral disc protection will be presented demonstrated, and practiced in a lab based setting.

**Course pre-requisites**

Student must be admitted to one of Oakland University's post-graduate Physical Therapy programs or have permission of department.

**Credit hours:**

2

**Instructor of Record:**

Doug Creighton MS DPT OCS FAAOMPT  
Associate Professor Oakland University Program in Physical Therapy  
Senior Instructor, Orthopedic Manual Physical Therapy Program  
[creight@oakland.edu](mailto:creight@oakland.edu)  
248-364-8696

**Course Instructor:**

Jeff Annis PT OMPT CSCS Instructor  
Clinical Instructor Graduate Certificate in Orthopedic Manual Physical Therapy  
248-691-4700  
[annisfamily@comcast.net](mailto:annisfamily@comcast.net)

**Office Hours**

3172 Human Health Building (HHB)  
Tue and Thur 12:00-1:00 and by appointment for quiz prep, quiz discussion and practicing therapeutic exercises.  
[creight@oakland.edu](mailto:creight@oakland.edu)  
248-364-8696

**Course Format**

Lecture, Lab, Group discussion, Group exercise prescription and performance sessions.

**Location and Meeting Date(s):**

5035 Human Health Building (Therapeutic Exercise Lab)  
Fridays 8:00AM-12:30PM  
January 12, February 9, March 9, April 6, 2018.  
Class begins at **7:30am** with a quiz on February 9, March 9, and April 6. Instruction of new material will begin at 8:15am

**Required Text:**

Therapeutic Exercise: Exercise Techniques for Patients with Common Orthopedic Conditions. Second Edition By: Creighton. This text and companion DVD should be purchased prior to the first class meeting. It is available at Zip Publishing: The Educational Publisher; toll free at 866-880-5373, Amazon.com and the Oakland University book center.

**Required Readings:**

Moodle posts such as research articles, course handouts, and assigned chapters in Therapeutic Exercise: Exercise Techniques for Patients with Common Orthopedic Conditions. Check Moodle often for new posts.

## **PT 8871 Course Schedule:**

### January 12 Class

Read Introductory Chapters (1-9) in Therapeutic Exercise: Exercise Techniques for Patients with Common Orthopedic Conditions

Review Material and Tissue Biomechanics, Loading and Tissue Stress Response, and its Relationship to Therapeutic Exercise Power Point posted on Moodle

Read assigned research articles on the shoulder and cervical spine posted on Moodle

Cervical exercise interventions

Thoracic exercise interventions

### February 9 Class

**Quiz 1** – (30-40 points) over January class material and related Moodle posts

Lumbar exercise interventions

### March 9 Class

**Quiz 2** – (20-30 points) over February class material and related Moodle posts

Complete Lumbar exercise interventions

Hip and Knee exercise interventions

### April 6 Class

**Quiz 3** – (20-30 points) over March class material and related Moodle posts

Shoulder and elbow exercise interventions

Review key spinal exercise interventions

### Friday April 13 Final Practical 8:00AM

**Comprehensive Therapeutic Exercise Practical Examination** – 140 Points

The student will be required to instruct, demonstrate (perform) one UE, one LE and two spinal therapeutic exercises.

### **Course Requirements:**

1. Professional Conduct Grade: Come to class dressed in “workout” ready to participate and perform various therapeutic exercises. All exercises and exercise prescription will be continually performed until the course instructor moves onto the next topic area. No jeans, no slacks, no dress shoes. – **15 points.**
2. Three quizzes beginning at 7:30AM on 2/10, 3/10, 4/7/17. Scantron Form no. 882-E is required for each quiz. – **70-100 points**
3. Comprehensive exercise lab practical- **140 points**

### **Course Goals:**

1. To review and expand upon by way of course text reading, the student/professional physical therapist understanding of the history of therapeutic exercise, various types of exercise resistance, therapeutic motions, the advantages and disadvantages of certain exercise positions. This will be tested in a written quiz format.
2. To review and expand upon by way of course text reading, the student/professional physical therapist knowledge of the basic and clinical science with regards spinal pain and spinal posture. Students will be examined on this aspect of the course in a written quiz format.
3. By way of course text reading, the student/professional physical therapist will analyze the prescription of therapeutic motion or immobilization in relation to musculoskeletal injury. Students will be examined on this aspect of the course in a written quiz format.
4. By way of course text reading, the student/professional physical therapist will review and musculoskeletal tissue healing time frames and relate this to the prescription of therapeutic passive active assisted, active, and resisted motion. Students will be examined on this aspect of the course in a written quiz format.
5. To assist the student/professional physical therapist in his /her ability to control ROM, control tissue loading, and utilization of the effect of gravity when prescribing exercise for injured, degenerated or recently repaired tissues.
6. To assist the student/professional physical therapist in his/her application of manually applied therapeutic eccentric muscle training for tendon pain and degeneration.

7. To improve student/ professional physical therapist understanding of and prescription of segmental unloading, positional distraction and self-traction therapeutic exercises for the management of cervical, thoracic and lumbar disc degeneration with and without radiculitis and radiculopathy.

8. To assist the student/professional physical therapist understanding of and prescription of therapeutic exercise for disc degeneration and spinal muscular atrophy and the prescription of safe, non-symptom provoking and effective spinal stabilization exercise.

9. To discuss and improve student/professional physical therapist patient instruction, demonstration, and his/her psychomotor performance of active and spinal self-mobilization exercises in the management of arthritic degeneration, injury, and resultant changes in segmental motion.

10. To introduce and demonstrate reduced load exercises and their role in the management of symptomatic extremity joint arthritic change causing compressive load intolerance.

11. To introduce, demonstrate, and improve the course participants ability of prescribe therapeutic exercise for the management of symptomatic extremity joint hypermobility.

12. To introduce, demonstrate, and improve the course participants ability of prescribe therapeutic exercise for the management of symptomatic vertebral segmental hypermobility/instability.

13. To discuss and enhance student/professional physical therapist appreciation for the potential long term ramifications and potential for injury associated with repetitive, non-specific and loaded spinal movement patterns (exercises).

## Grading Criteria for Comprehensive Final Practical Examination

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| Patient position for exercise performance  | 1 | 2 | 3 | 4 | 5 |
| Therapist Position for observation/assistance  | 1 | 2 | 3 | 4 | 5 |
| Anatomical/Biomechanical description provided to the class/instructor                      | 1 | 2 | 3 | 4 | 5 |
| Lay description of therapeutic exercise provided to the patient                            | 1 | 2 | 3 | 4 | 5 |
| Demonstration of the therapeutic exercise to the patient                                   | 1 | 2 | 3 | 4 | 5 |
| Correct exercise selection   | 1 | 2 | 3 | 4 | 5 |
| Cueing/ manual contacts and guided/resisted motion, correction of observed exercise motion | 1 | 2 | 3 | 4 | 5 |

**Name :**

**Date :**

**Grade      /35**