

PT 8860 Advanced Orthopedics I

**Oakland University – Program in Physical Therapy
Orthopedic Physical Therapy Certificate Program**

Orthopedic Manual Physical Therapy Program

Course catalog description:

This course is designed to introduce basic orthopedic science, orthopedic practice principles, and treatment techniques required in the day-to-day management of patients with movement impairments, functional limitations, and disabilities due to musculoskeletal pathologies of the extremities. Student must be admitted to one of Oakland University's post-graduate physical therapy programs or have permission of department. Two years of clinical experience is recommended.

Description:

Clinically related orthopedic sciences including anatomy, biomechanics, pathology and radiology will serve as the foundation for technique application and overall patient management. Practice principles will include evidence based practice, clinical decision making skills, clinical hypothesis building, treatment planning and progression. The technique portion includes physical examination and interventions for the *extremities* including advanced active and passive motion examination including translatory motion analysis. Soft tissue, articular and therapeutic exercise interventions for the extremities will be emphasized.

Course pre-requisites

Enrollment in this course requires admission to Orthopedic Certificate or Orthopedic Manual Physical Therapy Certificate Program, or permission of the instructor.

Course Purpose

1. To provide a learning environment that encourages students to develop the fundamental knowledge and skills required to manage basic orthopedic conditions in the extremities;
2. To review and expand upon the theoretical basis provided in entry level physical therapy education relating to orthopedic physical therapy clinical practice including functional anatomy, biomechanics, pathology, and principles of patient examination and intervention as related to the extremities;
3. To provide structured laboratory experiences in orthopedic examination and intervention procedures and techniques for the upper and lower extremities;
4. To interpret selected patient cases and develop functional and goal oriented treatment plans;
5. To demonstrate clinical decision making skills, including clinical reasoning, clinical judgment, and reflective reasoning; and
6. To promote continued professional growth and development.

Credit Hours

2

Instructor of Record

Melodie Kondratek, PT, DScPT, OMPT

Associate Professor - Physical Therapy; Oakland University

Office Hours

Fridays 12:00-1:00pm, before or after class meeting times; or by appointment

Contact Number

(248) 364-8697

E-mail

mdkondra@oakland.edu

Laboratory Assistants/Co-instructors

Laboratory Assistants as needed

Course Format

Approximately 26 hours of distance/online instruction and approximately 56 lab hours

Course Schedule

Select Friday afternoons (1:00-4:00pm); Saturday and Sundays (8:00 am- 4:00 pm), Winter 2018.
See Program Schedule for more detail

Room(s)

5002 or 5035 Human Health Building

Methods of student evaluation/grading

Component Breakdown	Evaluation Tool	Percent
Written Examinations	□ 2 – Quizzes (Feb 9 & March 9) 1 - final exam (April 13)	60%
Practical Examination	□ 2 OSCE (March 9 & April 13)	40%

Grading Scale

Numerical Equivalent	Alphabetic Equivalent	Percentage (%)		Numerical Equivalent	Alphabetic Equivalent	Percentage (%)
4.0	A	100-97		3.0	B	80
3.9	A	96		2.9	C	79
3.8	A	94		2.8	C	78
3.7	A	92		2.7	C	77
3.6	A	90		2.6	C	76
3.5	B	89		2.5	C	75
3.4	B	88		2.4	C	74
3.3	B	86		2.3	C	73
3.2	B	84		2.2	C	72
3.1	B	82		2.1	C	71
3.0	B	80		2.0	C	70
2.9	C	79				

Written Exams

Written and practical examinations will focus on materials presented in this class, or covered in the required readings. Students should also be prepared to answer questions relating to content covered in their entry level education as it relates to materials covered during this course. For example, if the treatment of the shoulder joint is being covered and/or tested, the student should also be prepared to entertain questions related to, but not inclusive to: anatomy, kinesiology, basic evaluation, therapeutic exercise, therapeutic procedures and basic patient care skills. Integration of prior entry level information should be addressed through self-learning and is the responsibility of the student. The form of the written exam and quizzes will be multiple choice, and short answer questions.

Regarding Written Exam Content

Written examinations are considered as protected evaluation instruments and are subject to the following guidelines:

1. Content may not be reproduced in part or in whole, stored in a retrieval system, or transmitted in any form or by any means, electrical, mechanical, photocopying or otherwise.
2. Exams may be reviewed only under supervision.
3. All exam booklets must be accounted for after an examination as well as after any review sessions.
4. All notes made during an examination should be made on the examination packet only.
5. A student(s) found in possession of unauthorized examination content will receive a grade of 0.0 in this course and will be charged with academic dishonesty.
6. Any unauthorized use of resources, whether or not identified in this course syllabus, constitute academic dishonesty and are subject to actions as specified in the Oakland University "Student Due Process Policy".

Failure to comply with academic honesty standards will result in dismissal from this course and in formal recommendation for dismissal from the Program and University.

Practical Exams

Two practical examinations will be given in this course. Both will be given in an OSCE (Objective Structured Clinical Examination) format. Practical examinations must be passed with a grade of 80.00% or higher. One opportunity (per OSCE) to repeat a failed practical examination is available during the course of the semester. If a student fails to report for a remedial examination or attempts to reschedule with less than a 24 hour notice, an additional opportunity is not guaranteed and the student may forfeit their ability to continue in the course. Retakes will be taken in front of two instructors unless otherwise stated. The highest grade that can be obtained on a retake practical examination is 80.00%. Individual and combined practical examination grades must be equal to or greater than 80.00% to successfully pass this course, regardless of didactic and/or professional standing. **Failing of either OSCE will result in a 0% on the practical and subsequently will result in the student failing the course with a grade of 1.0.**

Practical Exam Content

Both OSCE examinations will include extremity examination and intervention techniques as presented throughout the course.

Feedback

All quizzes, written exams and practical exams will be graded as soon as possible. If the instructors teaching this course feel a student is in need of individual feedback regarding above average or below average performance, the student will be notified and any issues/concerns will be addressed. Student concerns with any component of this course should be addressed with the primary instructor as soon as possible.

Attendance Policy

Due to the voluntary nature of this program it is expected that all attendees are invested in acquiring the information provided within this course. While attendance is required for this course the instructors understand that students are adult learners and have additional family and work responsibilities which may sometimes conflict with course scheduling. With that said, it is expected that students will inform the primary instructor of scheduling conflicts and will arrange to obtain any course handouts. Students are also expected to meet with fellow classmates to review techniques taught in laboratory sessions. Students who are excused from class are expected to meet the same performance standard as other class participants, and instructors are in no way obligated to review materials taught during the normal laboratory session. Excessive absenteeism will result in dismissal from this course.

Academic conduct statement

Students are expected to adhere to the procedures for Academic Conduct described in the University Graduate Catalog. Please read and refer to the University Graduate Catalog, Policy on Academic Conduct. This policy states that "All members of the academic community . . . are expected to practice and uphold standards of academic integrity and honesty. Academic integrity means representing oneself and ones work honestly. Misrepresentation is cheating since it means students are claiming credit for ideas or work not actually theirs and are thereby seeking a grade that is not actually earned." Examples of cheating include "cheating on exams, using books and/or notes when not authorized to do so, copying from someone else's work or ideas without giving that person credit . . . Both direct quotations and paraphrases must be documented. Even if students rephrase, condense, or select from another person's work, the ideas are still the other person's and failure to give credit constitutes plagiarism of another's idea." This policy will be applied in this and all courses in the Physical Therapy Program. Students found guilty of academic misconduct by the university will be subject university sanctions and to sanctions from the program by the Physical Therapy Promotion and Honors Committee including probation, suspension or dismissal.

Required References

Primary course documents and handouts are available in the Extremity Orthopedics Lab Manual and Companion DVD. Black and white printed copies of these materials are available upon request. Additional course handouts will be provided or posted on Moodle as needed.

Recommended References

1. Kaltenborn, Freddy. Manual Mobilization of Extremity Joints: Basic Examination and Treatment Techniques, 6th Edition. 2002. Olaf Norlis Bokhandel: Oslo, Norway.
ISBN: 8270540439. OTP: 1-800-367-7393.
2. Evjenth, O. and Hamberg, J. Muscle Stretching in Manual Therapy: A Clinical Manual, Volume 1. Alfta Rehab Forlag: Alfta, Sweden, 1998. ISBN: 91-85934-02-X.
OTP: 1-800-367-7393.
3. Magee, D. Orthopedic Physical Assessment, 5th edition. W.B. Saunders, 2008. ISBN 0 7216-0571-0.

Required Reading

The required reference and recommended texts are organized by either topic and/or sections of the appropriate body region. Please read the text related to the body region to be covered on a

given date. Additional material will be distributed as it is developed and should also be considered required reading. Selected journal articles may also be assigned.

Required supplies

To be announced if required.

Lab Attire

Laboratory attire consisting of shorts and tank tops are required for all on-sight sessions. Shoes that may be easily donned and doffed for frequent switching between patient and therapist are encouraged.

Accommodations /Disability support services statement:

Any student with a documented disability needing academic accommodations is required to speak with the Office of Disability Support Services to make arrangements. The office is located in room 103A North Foundation Hall. Call 370-3266 for information or to make an appointment,

Emergency Preparedness:

All students are encouraged to become familiar with the Oakland University Emergency Preparedness Website, Policies and Procedures.

See: <http://www4.oakland.edu/?id=5410&sid=188> In particular, students are strongly encouraged to:

- 1) Take the 15-minute *Violence Prevention Training Course* available on the site
- 2) Sign up to receive text message alerts in the event of a major campus emergency by visiting the **Emergency Notification** Web site (Grizz ID and valid OU e-mail address required) 3) Know how to contact the OUPD in the event of an emergency:
 - Call **911** from any campus phone
 - Call (248) 370-3333 from a cell phone
 - Text the dispatch office at **911@oakland.edu**
 - E-mail the dispatch office at **911@oakland.edu**
- 4) Know how to **submit anonymous tips** online in non-emergency situations.

Student Objectives:

General

1. **Communication skills, documentation and the patient interview:**

- a. Demonstrate effective verbal and nonverbal communication skills.
- b. Describe a complete treatment plan including the progression from the first day of treatment through discharge.

2. **Therapist and patient safety:**

- a. Describe indications, contraindications and precautions to orthopedic physical examination and interventions.
- b. Demonstrate safe and functional postural habits during patient examination and treatment.
- c. Demonstrate a functional awareness of the patient's position in space.
- d. Modify patient positioning, tests and measures, and interventions based on specific patient limitations.

- e. Demonstrate the ability to educate/instruct your patient in appropriate postural habits/ body mechanics.
- f. Inspect all equipment for damage prior to use.
- g. Keep the treatment area clear of all obstacles.

3. Differential diagnosis and understanding of orthopedic conditions:

- a. Organize examination findings into clusters, syndromes, or categories.
- b. Identify and describe specific pathological conditions/syndromes/disorders.
- c. Identify when a referral to another health care professional(s) is indicated.

4. Critical thinking skills:

- a. Describe age normative and transcultural expectations as they relate to examination and treatment techniques.
- b. Describe abnormal and normal examination findings.
- c. Describe possible reasons/mechanisms for variations from normal values.
- d. Describe typical compensations and alternations in normal function as they relate to common pathological conditions and injuries.
- e. Demonstrate clinical decision making skills, including clinical reasoning, clinical judgment and reflective reasoning.
- f. Demonstrate the integration of specific treatment techniques across varied patient populations, pathologies and body regions.
- g. Select appropriate physical therapy interventions for selected case studies.
- h. Discuss progression of intervention, rationale, and expected functional outcomes for selected case studies.

5. Professionalism:

- a. The following professional qualities and behaviors are expected to be present in all students entering this program. While this is not formally measured in this course it is expected that students are mature adult learners who will exhibit these qualities and behaviors during all instructor and peer interactions. (based on the Generic Abilities, UWM, 1996)
 - Identifying/locating appropriate resources to complete course requirements.
 - Demonstrating a positive attitude toward learning.
 - Offering thoughts and ideas in class.
 - Prioritizing information needs.
 - Accepting that there may be more than one correct answer to a problem.
 - Maintaining a professional demeanor in all classroom and clinical situations.
 - Respecting cultural and personal differences of others.
 - Communicating with others in a respectful manner.
 - Respecting the personal space of others.
 - Maintaining confidentiality in all clinical interactions.

- Assuming responsibility for his/her actions.
- Using existing resources effectively.
- Using unscheduled time effectively.
- Completing assignments in a timely fashion.
- Actively seeking feedback and help when necessary.
- Demonstrating a positive attitude toward feedback.
- Developing a plan of action in response to feedback.
- Assessing his/her performance accurately.
- Abiding by the APTA Code of Ethics and Standards of Practice.
- Projecting a professional image in the classroom and clinical setting.
- Demonstrating dependability.
- Accepting constructive feedback.

Course Specific

1. Orthopedic Physical Therapy:

In order to successfully complete this course the student must demonstrate the ability to:

- a. Specifically select, prioritize and implement orthopedic tests and measures based upon the patient's medical diagnosis, symptoms, clinical presentation, functional limitations, age, and ability to cooperate with the examination process.
- b. Effectively perform a physical examination which will include, but is not limited to: gross observation, static posture, dynamic posture/body mechanics, gait, active range of motion, passive range of motion, resisted range of motion, functional testing, joint play, passive joint movements, neurological screening, vascular screening, passive tissue mobility, flexibility screening, special testing, and palpation.
- c. Effectively correlate findings from the physical examination with the patient's clinical signs and symptoms.
- d. Evaluate/analyze examination findings and develop a working hypothesis and orthopedic physical therapy diagnosis.
- e. Specifically describe probable causes of current patient complaint/movement impairment based upon examination findings.
- f. Establish a specific treatment plan, including, but not limited to: expected duration of treatment, frequency of treatment, manual therapy techniques, exercise techniques and/or protocols, physical agents, adaptive or assistive devices, community resources and/or support programs and referrals to be made.
- g. Effectively utilize specific physical therapy tests and measures which include but are not limited to:
 - Anthropometric Characteristics
 - Ergonomics and Body Mechanics
 - Integumentary Integrity

- Joint Integrity and Mobility
 - Muscle Performance (Including Strength, Power, and Endurance)
 - Orthotic, Protective, and Supportive Devices
 - Pain
 - Range of Motion (Including Muscle Length)
- h. Effectively utilize specific physical therapy interventions which include but are not limited to:
- Manual therapy principles and techniques including massage/soft tissue mobilization, functional massage, manual muscle stretching, and basic joint mobilization.
 - Therapeutic exercise principles and training techniques to enhance muscle performance and coordination for select orthopedic conditions.
- i. Develop and prioritize a specific problem list based on clinical findings, functional limitations, rehabilitation potential, patient goals, pre-morbid function/habitual variations of patient's age, patient's gender, patient's body type, pertinent patient history and available resources.
- j. Establish a realistic physical therapy prognosis based on clinical findings, functional limitations, rehabilitation potential, patient goals, pre-morbid function/habitual variations of patient's age, patient's gender, patient's body type, pertinent patient history and available resources.
- k. Describe a comprehensive home exercise/self maintenance program.

2. Re-evaluation of orthopedic conditions:

In order to successfully complete this course the student must demonstrate the ability to:

- a. Identify subjective and objective measures that will serve as dependent variables to measure initial response to treatment.
- b. Identify subjective and objective measures that will serve as appropriate long-term goals and that can be assessed throughout the course of physical therapy treatment.

Laboratory Modules & Objectives

Module 1: E1- OMPT Examination and Intervention for the Muscles of the Upper and Lower Extremities

This course provides an in-depth and systematic orthopedic manual therapy approach to the examination and treatment of muscles of the upper and lower extremities. Evidence-supported manual therapy specialty skills presented in this course include symptom localization, muscle play and palpation, functional massage, manual muscle stretching, self-functional massage, and autostretching. Foundational sciences, clinical reasoning, orthopedic pathologies and patient cases will also be presented and discussed.

Objectives Discuss

1. Anatomy, kinematics, and biomechanics, of the neuromusculoskeletal system relating to upper extremity.
2. Common upper and lower extremity pathologies and related pathomechanics.
3. The use of the subjective examination as a guide to the selection of case specific tests and measures.

4. The development of a patient diagnosis based on the evaluation of examination findings.
5. The indications and contraindications for various upper extremity interventions including manual therapy. Demonstrate and perform
7. Selective upper extremity examination including: postural examination, active and passive movement examination including muscle performance testing and screening for involvement of the cervical spine.
8. Selective upper extremity treatment including: soft tissue mobilization (traditional & functional), and manual muscle stretching.

Module 2: E2 – Examination and Intervention for the Joints of the Upper and Lower Extremities

This course provides an in-depth and systematic orthopedic manual therapy approach to the examination and treatment of the joints of the upper and lower extremities. Evidence-supported manual therapy specialty skills presented in this course include symptom localization, joint play assessment, multidirectional translatory joint mobilizations, and an introduction to traction manipulations. Foundational sciences, clinical reasoning orthopedic pathologies and patient cases will also be presented and discussed.

Objectives Discuss

1. Anatomy, kinematics, and biomechanics, of the neuromusculoskeletal system relating to lower extremity.
2. Common upper and lower extremity pathologies and related pathomechanics.
3. The use of the subjective examination as a guide to the selection of case specific tests and measures.
4. The development of a patient diagnosis based on the evaluation of examination findings.
5. The indications and contraindications for various upper and lower extremity joint interventions including manual therapy. Demonstrate and perform
7. Selective upper and lower extremity examination including: postural examination, active and passive movement examination including joint play testing and screening for involvement of the lumbar spine.
8. Selective upper and lower extremity joint mobilization techniques.