PT 7611 – Foundations in Musculoskeletal Examination and Intervention

Winter 2018

Catalogue Course Description:
Principles and techniques of manual therapy intervention for the extremities are covered within this course. Clinical reasoning skills, evidence based practice and use of prior learning are emphasized.

Detailed Course 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. 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 extremity joints with an emphasis on manual therapy. Students will be challenged to apply prior knowledge as it relates to anatomy, tissue physiology, pathology, kinesiology, basic examination techniques, therapeutic exercise, and basic patient care skills. The student will take an active role in the interpretation of and progression of selected patient cases.

Course pre-requisites
Enrollment in this course requires admission to the Physical Therapy Program and successful completion of PT 552, PT 651 and PT 652.

Course Purpose:

1. To provide a learning environment that encourages students to develop the fundamental knowledge and skills required to manage basic orthopedic conditions,
2. To develop a basic understanding of orthopedic manual physical therapy examination and intervention techniques,
3. To provide structured laboratory experiences in orthopedic examination and intervention procedures and techniques,
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: 3

Course Instructor: John R. Krauss, PhD, PT, OCS, FAAOMPT

Laboratory Assistants:
Amanda Davis Berres, DPT, OMPT
Dhana Ponners, MPT, OMPT
Christie Booth Smith, DPT, OMPT
Jason Thomas, DPT, OMPT

Course Format: Approximately 98 hours of combined laboratory and lecture hours

Course Schedule: Tuesday & Thursday 1:00 p.m. – 4:30 p.m.

Rooms: 5002 Human Health Building

Office Hours: Tuesdays and Thursdays 12:00 p.m. – 1:00 p.m., also by appointment

Contact Number: (248) 364-8693

Email: krauss@oakland.edu

Course Expectations

Performance Expectations

- All practical examination scores must be 80.00% or higher to successfully pass this course regardless of didactic or cumulative scores. Students who do not successfully pass either practical examination will receive a 1.0 in the course.
- Unless otherwise stated, all didactic scores must comply with expected student performance as described in this course syllabus and your student handbook.

Professional Behavior Expectations

- To successfully complete this course the student will need to both demonstrate and facilitate professional qualities and behaviors that are consistent with those required of a physical therapist as specifically described in your student handbook and this syllabus.
- Unacceptable professional behaviors will result in dismissal from this course regardless of didactic standing, and as determined by due process.

Safety Expectations

- Proper therapist and patient safety are mandatory requirements of this course. Unsafe practice patterns or behaviors resulting in potential or actual harm are referred to as critical safety incidents as determined by course instructors and proctors. Critical safety incidents are subject to dismissal from this course regardless of academic standing, and as determined by due process.

Methods of Student Evaluation/Grading

Component Breakdown		Evaluation Tool	Percent
Academic Component 90%	Written Examinations	• Written Exam 1 • Written Exam 2 (Cumulative)	20% 20%
	Practical Examination	• OSCE • Comprehensive Final Practical	20% 25%
		• Literature Review	5%
Professionalism 10%		• Class Participation & Attendance • Professionalism	5% 5%

Grading Scales

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:
Both written and practical examinations will focus on materials presented in this class as well as content presented in prior curriculum. Prior content will be tested to a lesser extent and will be pertinent to topics being addressed in orthopedics at or during the time of a given examination. 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 curriculum should be addressed through self-learning and is the responsibility of the student. Questions regarding prior content will not be entertained during scheduled class hours. No written makeup quizzes or exams are given. Only hospitalization or severe emergency will allow the student to retake a written exam or quiz. The written exams will be comprised primarily of multiple choice and short answer questions.

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

1. Content may not be reproduced in part or 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 review sessions.

4. All notes made during an examination should be made on the examination packet only.

5. Students found in possession of unauthorized examination content will receive a grade of 0.0 in this course.

Practical Exams:
Two practical examinations will be given in this course. The first exam will be an OSCE (Objective Structured Clinical Examination) format (typically consisting of three stations, with two to three psychomotor questions per station). The second will be a comprehensive practical exam involving a patient examination and intervention including progression of treatment and prognosis. Students are expected to take the practical examination dressed in proper clinical attire.

Practical examinations must be passed with a grade of 80.00% or higher. One opportunity (per practical exam) to repeat a failed practical examination is available during the semester. If a student fails to report for a remedial examination or attempts to reschedule with less than 24 hours' 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:
The OSCE and final practical examinations will include extremity examination and intervention techniques as discussed above.

Feedback
All written 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:
Absenteeism: Attendance is required in compliance with departmental policies. Absenteeism is excused if consistent with departmental policies. Additional excuses will be entertained on a case by case basis, during office hours and at the discretion of the primary instructor. The student should be advised that an additional excuse, if accepted, would be per occurrence and does not infer nor imply precedent. In the event of absenteeism, please contact the department as soon as possible. Also in the event of absenteeism, the student is responsible for obtaining the information that was missed**.** Unexcused absenteeism will result in a reduction in grade. Excessive absenteeism, both excused and unexcused will result in dismissal from this course.

Tardiness: Students should arrive for class on time.
Disruption of lecture or lab after it has started will be reflected in both grading of attendance and professionalism. Three or more occurrences of tardiness will result in a 5% reduction in a student's overall grade. Greater than 7 occurrences of tardiness will result in dismissal from this course. Please note that I will address global causes of tardiness on a per incident basis.

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 Program in Physical Therapy. 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.

Assignments & Class Participation:
Full credit for assignments and class participation may be achieved by:
1. Actively participating during lecture and laboratory.
2. Attending all class and lab sessions.
3. Turning in / completing all class and lab assignments.
4. Demonstrating professional, "clinic-like" behavior during all labs.
5. Scheduling as needed meeting(s) with your primary instructor to discuss class performance and to give / receive feedback regarding this course.

Professionalism:
Students are expected to demonstrate professional qualities and behaviors that are consistent with those required of a physical therapist. Inappropriate or disruptive behaviors directed towards faculty or fellow students may result in dismissal from the class.

Examples of attributes, characteristics, and / or behaviors include, but are not limited to the following:
1. Commitment to learning
2. Communication skills (verbal and non-verbal)
3. Interpersonal skills
4. Effective use of time and resources
5. Use of constructive feedback
6. Problem solving
7. Responsibility
8. Critical thinking

Examples of student responsibilities include but are not limited to the following:
1. To be prepared for class.
2. To accept responsibility for actions and academic performance.
3. To demonstrate respect for other students and faculty.
4. To give constructive feedback in a timely fashion.
5. To seek help when needed.
6. To be responsible for self learning.

Specific "generic abilities" or "attributes" as well as the opinions of the primary and laboratory instructor will determine the point totals for the course requirement. We will be looking for overt behaviors and/or characteristics that are reproduced and/or repeated by the student on more than 2 to 3 occasions. The criteria include both professional as well as non-professional abilities/behaviors. Full credit for this course requirement is 10 points and implies expected professional behaviors, not above average professional behaviors.

Examples of behaviors/attributes that will be assessed include, but are not limited to:
1. The student's ability to contribute to the class in an open forum / discussion.
2. The student's apparent level of preparation for lecture and laboratory.
3. Immediately limiting discussion at the start of class and avoiding all discussion during lecture.
4. Staying on task during laboratory sessions and limiting conversation to the topic on hand.

Dishonesty Disclaimer:
All forms of cheating, plagiarism and 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".

Required References

1. Krauss & Evjenth. Extremity Orthopedics Lab Manual 2nd Edition. Lakeview Media LLC: Rochester, MI, 2014.
2. Kaltenborn, Freddy. Manual Mobilization of Extremity Joints: Basic Examination and Treatment Techniques, 8th Edition. Olaf Norlis Bokhandel: Oslo, Norway. ISBN: 82-7054-043-9. OPTP: 1-800-367-7393

Strongly Recommended References

1. 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. OPTP: 1-800-367-7393
2. Evjenth, O. and Hamberg, J. Auto Stretching. Alfta Rehab Forlag: Alfta, Sweden, 1997. ISBN: 91-85934-05-4. OPTP: 1-800-367-7393.

Additional Recommended References

1. Magee, D. Orthopedic Physical Assessment. W.B. Saunders, 2003. ISBN 0-7216-9325-0

Required Reading:

- Required texts are well organized by either topic and/or sections out of the appropriate body region. Please read the text related to the body region to be covered on a given date.
- The introductory sections out of all texts are required and should be completed by the end of week two.
- Additional material will be distributed as it is developed and should also be considered required reading.
- Selected journal articles may be assigned. If assigned one copy will be provided for placement in the student lounge.

Class Clean up:
Each student is responsible for clean up of his or her work area following each class. Tables should be lowered, and chairs straightened. Please remove any trash from the area before leaving the lab.

Required Supplies: To be announced if required.

Lab Attire:
Each student should **ALWAYS** have proper lab attire available. If uncertain if lab attire is needed, please consult the course syllabus prior to asking the instructor.

As the primary instructor teaching this course, I reserve the right to change the components of this syllabus if needed. In the event of a global change, an addendum to the syllabus will be distributed in a timely fashion.

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 106 North Foundation Hall. For information or to make an appointment call 370-3266.

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.

Course Objectives:

Review of Literature
In the duration of this course, the learner will be assigned topic areas relevant to this course and will:
1. Conduct a literature search on the assigned topic and retrieve relevant peer reviewed literature.
2. Assess the importance of information relevant to a given topic.
3. Organize important aspects of the literature.
4. Develop a concise handout relevant to a given topic to assist your peers in the understanding of assigned topics.
5. Briefly present selected literature to peers and course instructors.
6. Briefly explain questions relevant to a completed literature search.

Patient Positioning and Body Mechanics
During the duration of this course the student will:
1. Develop a functional awareness for your patient's position in space.
2. Demonstrate safe and functional postural habits during all laboratory and simulated patient experiences.
3. Demonstrate the ability to educate/instruct your patient in appropriate postural habits/body mechanics.

Posture Examination and Evaluation
During the duration of this course the student will:
1. Describe all common postural deviations presented in laboratory sessions.
2. Demonstrate an understanding of normal static and dynamic postures during applicable laboratory sessions.
3. Demonstrate a basic static posture examination and evaluation as presented in laboratory sessions.
4. Evaluate and understand factors that contribute to dysfunctional postural habits.

Therapist and Patient/Client Safety

In order to successfully complete this course the student will demonstrate the ability to:
1. Describe indications, contraindications and precautions for all examination procedures and interventions covered in this course.
2. Demonstrate safe and functional postural habits during laboratory and all patient examinations as determined by course instructors and proctors.
3. Demonstrate a functional awareness for your patient's position in space as determined by course instructors and proctors.
4. Demonstrate the ability to modify patient positioning, testing procedures and treatment procedures based on specific patient limitations.
5. Demonstrate the ability to educate/instruct a patient in appropriate postural habits, positioning and body mechanics.
6. Demonstrate the ability to inspect all equipment for damage prior to use.
7. Demonstrate the ability to keep treatment areas clear of all obstacles.

Patient Education
During the duration of this course the student will:
1. Demonstrate the ability to instruct your patient in basic self-management skills/techniques, which will include but is not inclusive to: posture, positioning, body mechanics, basic ADL modification, basic patient/client safety, common spinal and extremity pathologies or disorders, and common spinal and extremity interventions, as determined by coursework, course instructors and proctors.

Communication skills, documentation and the patient interview:
In order to successfully complete this course, the student will demonstrate the ability to:

1. Demonstrate effective verbal and nonverbal communication skills.
2. Demonstrate effective communication techniques.
3. Obtain and develop a patient profile, which includes but is not limited to subjective findings, results of diagnostic tests, a review of systems and objective findings.
4. Gather additional information relevant to a person's condition, level of function, occupation and social history, etc.
5. Identify and document the critical characteristics of a patient's symptoms.
6. Write concise, comprehensive S.O.A.P. notes, including:
    A. Subjective and objective findings.
    B. Treatment goals.
    C. Treatment administered and method of administration.
    D. Patient response(s) to examination and intervention(s).
    E. Modification of examination and/or intervention based on patient response.
7. Discuss examination findings, physical therapy diagnosis, physical therapy progress, intervention options/approach, rehabilitation potential, factors that could potentially limit outcome, special circumstances/issues and referrals, with the patient, family members, and other health-care professionals, using both professional and appropriate terminology.
8. Describe a complete treatment plan including the progression from the first day of treatment through discharge.

Differential diagnosis and understanding of orthopedic conditions:
To successfully complete this course, the student will demonstrate the ability to:

1. Generate an orthopedic differential diagnosis list relevant to a variety of extremity patient cases both in paper format and in a simulated clinical environment.
2. Effectively identify when non-musculoskeletal conditions are present in isolation or in combination with existing orthopedic conditions. Examples include visceral, central nervous system and psychogenic conditions.
3. Organize examination findings into clusters, syndromes, or categories.
4. Identify and describe specific pathological conditions/syndromes/disorders.
5. Identify involvement/disorders of the autonomic nervous system.
6. Identify when a referral to another health care professional(s) is indicated.
7. Demonstrate an understanding of the roles of other health care professionals.

Prognosis
In order to successfully complete this course, the student will demonstrate the ability to:

1. Identify prognostic indicators for success or failure of physical therapy intervention on a per condition and per patient basis
2. Identify relationship between physical therapy intervention type and the patient prognosis

Orthopedic and Orthopedic Manual Therapy:
In order to successfully complete this course, the student must demonstrate the ability to:

1. 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.
2. 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, symptom localization, passive range of motion, manual muscle testing, neurological screening, task/sport specific testing, special testing, and palpation.
3. Effectively examine and describe the quantity of normal movement in each extremity joint.
4 Effectively correlate findings from the physical examination with the patient's clinical signs and symptoms.
5. Evaluate/analyze examination findings and develop a working hypothesis and orthopedic physical therapy diagnosis(es).
6. Specifically describe probable causes of current patient complaint/movement impairment based upon examination findings.
7. 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.
8. Effectively utilize specific physical therapy tests and measures which include but are not limited to:
    a) Anthropometric Characteristics
    b) Circulation
    c) Cranial and Peripheral Nerve Integrity
    d) Ergonomics and Body Mechanics
    e) Integumentary Integrity
    f) Joint Integrity and Mobility
    g) Motor Function (Motor Control and Motor Learning)
    h) Muscle Performance (Including Strength, Power, and Endurance)
    i) Orthotic, Protective, and Supportive Devices
    j) Pain
    k) Range of Motion (Including Muscle Length)
    l) Reflex Integrity
    m) Work, Community, and Leisure Integration or Reintegration
9. Effectively utilize specific physical therapy interventions which include but are not limited to:
    a. Principles and techniques for massage/soft tissue mobilization and functional massage.
    b. Principles and techniques for manual muscle stretching.
    c. Principles and techniques for joint mobilization and select joint manipulation techniques

10. 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 sex, patient's body type, pertinent patient history and available resources.
11. 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 sex, patient's body type, pertinent patient history and available resources.
12. Describe a comprehensive home exercise/self maintenance program.

Re-evaluation of orthopedic conditions:
In order to successfully complete this course, the student must demonstrate the ability to:

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

Critical thinking skills:

1. Describe age normative and transcultural expectations as they relate to examination and treatment techniques.
2. Describe abnormal and normal findings.
3. Describe possible reasons/mechanisms for variations from normal values.
4. Describe typical compensations and alternations in normal function as they relate to common pathological conditions and injuries.
5. Demonstrate clinical decision-making skills, including clinical reasoning, clinical judgment and reflective reasoning.
6. Demonstrate a functional integration of prior curriculum through, but not limited to: patient case studies, laboratory experiences, classroom participation and both written and practical examinations.
7. Demonstrate the integration of specific treatment techniques across varied patient populations, pathologies and body regions.
8. Select appropriate physical therapy interventions for selected case studies.
9. Discuss progression of intervention, rationale, and expected functional outcomes for selected case studies.
10. Identify patient personality types and psychosocial overlay as it relates to potential treatment outcomes.

Professionalism (Per student handbook)

1. Both demonstrate and facilitate professional qualities and behaviors that are consistent with those required of a physical therapist and as described above.
2. Practice ethical decision making that is consistent with applicable professional codes of ethics, including the APTA's Code of Ethics.
3. Both demonstrate and facilitate professional qualities and behaviors that are consistent with those required of a physical therapist including the following (based on the Generic Abilities, UWM, 1996)
   a) Identifying/locating appropriate resources to complete course requirements.
   b) Demonstrating a positive attitude toward learning.
   c) Offering thoughts and ideas in class.
   d) Prioritizing information needs.

e) Accepting that there may be more than one correct answer to a problem.
f) Maintaining a professional demeanor in all classroom and clinical situations.
g) Respecting cultural and personal differences of others.
h) Communicating with others in a respectful manner.
i) Respecting the personal space of others.
j) Maintaining confidentiality with all clinical interactions.
k) Assuming responsibility for one's own actions.
l) Using existing resources effectively.
m) Using unscheduled time effectively.
n) Completing assignments in a timely fashion.
o) Actively seeking feedback and help when necessary.
p) Demonstrating a positive attitude toward feedback.
q) Developing a plan of action in response to feedback.
r) Assessing one's own performance accurately.
s) Abiding by the APTA Code of Ethics and Standards of Practice.
t) Projecting a professional image in the classroom and clinical setting.
u) Demonstrating dependability.
v) Accepting constructive feedback.

As the primary instructor teaching this course, I reserve the right to change components of this syllabus if needed. In the event of a global change, an addendum to the syllabus will be posted on provided.

Tentative Course Schedule

Dates	Topics
Jan. 4	Course introduction Introduction to the PT-CISE Model, Review of the Orthopedic Examination (PT-CISE Sections A-C)
Jan. 9 - Feb 13	Extremity muscle examination and intervention
Feb 15	**OSCE & Exam 1 (Extremity muscle examination and intervention)**
Feb 17 – 25	Winter recess
Feb 27 – April 5	Extremity joint examination and intervention
April 10	**Exam 2 (Extremity articulations examination and intervention)**
April 12	**Open Lab**
April 17 & 19	**Cumulative practical examination**
April 24	**Practical Retakes (As Needed)**

The instructor of record reserves the right to change the order and content of the above schedule to meet the instructional needs of the course and course participants.