Course Name: C-621 Lower Extremity

Faculty: All credentialed faculty

Clock Hours: Twenty-one (21) contact hours

Audience: This course is for licensed physical therapists (copy of physical therapy license required) that are intermediate learners in the field of orthopedic manual physical therapy.

Pre-requisites: None.

Course Description:
This course will utilize case-based instruction to illustrate select conditions of the lower extremity and their detailed, specific biomechanical and neurophysiological assessment. Participants will assemble an all-source evidence-informed approach to evaluation and management through consideration of normal, abnormal and applied lower extremity anatomy, physiology, biomechanics, and pathology. Coursework will focus on reason-based development of individualized examination sequences aimed at patient/client classification into - management of an initial diagnosis, progression to a focused regional examination, symptom/intervention/rule-based classification groupings, or referral to another health-care provider. Participants will compare the concepts of health, functioning, pain behaviors and their manifestations, and their role in total patient/client management. Procedural interventions will include education, manual therapy techniques, and individualized neuromuscular rehabilitation prescription, with the goal of restoring normal function and preventing disability. Interventions will include thrust joint manipulation.

Teaching methods/learning experiences:
A variety of active learning methods will be incorporated into the case-based presentation of course material, including lecture, laboratory, independent problem assignments, group-based activities, and role-playing.

Overall Course Objectives:
Upon completion of this three 21-hour module, the participant should be expected to:
1. Apply knowledge of tissue health and tissue repair to select pathologies of the components of the lower extremity.
2. Apply the principles of kinematics and kinetics to the assessment.
3. Outline a specific biomechanical and neurophysiological assessment of the components of the lower extremity.
4. Integrate all-source evidence-based tests and measures into an overall assessment.
5. Formulate an all-source evidence-informed management plan including education, manual therapy, and individually dosed neuromuscular rehabilitation techniques.
6. Demonstrate thrust joint manipulation techniques to the joints of the lower extremity.

Specific Course Objectives:
Affective Domain:
Upon completion of this 21-hour module, students should be expected to:
1. Accept that a strong understanding of the basic sciences of normal, abnormal and applied anatomy, physiology, biomechanics, and pathology are essential to the practice of orthopedic manual physical therapy.
2. Recognize the vital role that all-source evidence-informed clinical reasoning plays in the evaluation and management of orthopedic manual physical therapy patients/clients.
3. Realize that all orthopedic manual physical therapy patients/clients present with certain unique signs and symptoms that require an individualized approach to the evaluation.
4. Accept the concept of patho-anatomical diagnosis as the important goal in the evaluation of the orthopedic manual physical therapy patient/client.
5. Accept the importance of Selective Tissue Tension Testing (STTT) to the evaluation and management of the orthopedic manual physical therapy patient/client.
6. Identify patients who are more appropriately classified using other criteria (Clinical Prediction Rules, Symptom/Intervention based systems).
7. Internalize the importance of prognosis as a central factor in the evaluation and management of orthopedic manual physical therapy patients/clients.
8. Display the judgment required to make decisions that take into account, and are in the best interests of, the overall health and function of the individual.
Recognize the importance of all-source evidence-informed practice and balance all sources (clinical experience, literature, and patient preference) in search of best practices.

**Cognitive Domain:**

Upon completion of this 21-hour module, students should be expected to:

1. Analyze the current understanding of the normal, abnormal and applied anatomy, physiology, and biomechanics of the lower extremity.
2. Interpret the biomechanics of the knee, foot, and ankle as they relate to the specific biomechanical and neurophysiological assessment of combined movements.
3. Discuss concepts of osteokinematics and arthrokinematics as they apply to the biomechanics in the lower extremity.
4. Describe the concept of tissue health and the various stages of tissue healing.
5. Apply the principles of advanced kinematics and intermediate level kinetics to the interpretation of the assessment in the lower extremity.
6. Identify condition (illness) scripts for select diagnoses of the lower extremity:
   a. Conditions of the bone
   b. Conditions of the cartilage
   c. Conditions of the soft-tissue (contractile and non-contractile)
   d. Conditions of the vasculature
   e. Conditions of the nerve
   f. Biomechanical dysfunction
   g. Neuromuscular dysfunction
   h. Symptoms referred to the lower extremity
7. Question the initial hypothesis through targeted subjective questioning.
8. Interpret red and yellow flag presentations and discuss the decisions that need to be made about the management of these patients.
9. Recognize the unique ‘Peripheral joint examination’, and differentiate the relative worth of its potential components as applied to lower extremity presentations:
   a. Observation
   b. Range of motion (functional, active, passive, combined, overpressure)
   c. Resisted testing
   d. Tests of pain provocation (bone, nerve, ligament, soft tissue)
   e. Tests of joint stability
   f. Tests of accessory joint motion (joint glides)
   g. Palpation
   h. Special tests (including tests of motor control and coordination)
   i. Symptoms referred to the knee, ankle, and foot
   j. Repetitive injury conditions in the lower extremity
   k. Complex Regional Pain Syndrome (CPRS)
   l. Common surgical procedures related to the knee, ankle, and foot
10. Identify individual all-source evidence-based tests and measures that are relevant to the diagnosis.
11. Assemble all-source evidence-informed, reasoned, and individualized examination sequences specific to lower extremity condition (illness) scripts.
12. Modify individual examination sequences to take into consideration the varying levels of severity and irritability in patient/client presentation.
14. Formulate an accurate, detailed and individual prognosis for each patient/client presentation.
15. Discuss specific indications and contraindications for orthopedic manual physical therapy intervention.
16. Utilize case examples to discuss specific, all-source evidence-informed, individualized management plans, taking into account the overall health and function of the individual.

**Psychomotor Domain**

Upon completion of this 21-hour module, students should be expected to:

1. Demonstrate the relevant components of a peripheral joint examination for the lower extremity:
   a. Observation
   b. Range of motion (functional, active, passive, combined, overpressure)
   c. Resisted testing
   d. Tests of pain provocation (bone, nerve, ligament, soft tissue)
   e. Tests of joint stability
f. Tests of accessory joint motion (joint glides)
g. Palpation
h. Special tests (including tests of motor control and coordination)
2. Demonstrate a modified examination sequence to take into consideration the varying levels of severity and irritability in patient/client presentation.
3. Demonstrate the ability to provide education to a patient/client, including prognosis, activity modification, and postural adaptation.
4. Demonstrate orthopedic manual physical therapy intervention techniques:
   a. Manual therapy techniques
      i. Localized joint mobilizations
         • Joints of the hip
         • Joints of the knee
         • Joints of the tibia/fibula
         • Joints of the ankle
         • Joints of the foot
      ii. Thrust joint manipulation
         • Joints of the hip
         • Joints of the knee
         • Joints of the tibia/fibula
         • Joints of the ankle
         • Joints of the foot
      iii. Joint distraction
      iv. Techniques in various positions in the joint range
      v. Interventions utilizing various combinations of techniques
   b. Soft tissue techniques
   c. Rehabilitation techniques
      i. Neuromuscular rehabilitation of the lower extremity
      ii. Strength, mobility, and endurance training
   d. Stabilization strategies (including external tape, body mechanics training)
   e. Neurodynamic intervention
   f. Neural de-sensitizing intervention
5. Demonstrate modified variations of the above interventions to take into consideration the varying levels of patient/client severity, irritability, and patient/client/therapist body type.

*Please note that specific course content will vary according to faculty assessment of the specific skill levels and needs of the course participants, as well as to remain in full compliance with individual state physical therapy practice acts.*