

**FUNCTIONAL BIOMECHANICS OF THE
LOWER QUARTER:**

Implications for Movement Dysfunction and Musculoskeletal Injury

Saturday & Sunday, June 6-7, 2026

A.T. Still University, Mesa, AZ

Presented by:

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Hosted by the Orthopedic Physical Therapy Residency Program

Course Overview:

Altered lower quarter mechanics are frequently implicated as being contributory to various musculoskeletal conditions. An understanding of how abnormal limb function can contribute to the mechanisms of specific joint dysfunction is essential for the evaluation and treatment of common orthopaedic disorders. This evidence-based course will review the anatomy and mechanics of the lower kinetic chain, particularly in relation to specific pathologies of the ankle, knee and hip. Emphasis will be placed on current research findings in the areas of gait analysis, lower limb function, and joint biomechanics. Implications for the evaluation and treatment of various musculoskeletal conditions also will be addressed.

Course Objectives/Learning Outcomes:

At the conclusion of the course the participant will be able to:

1. Describe the normal anatomy and biomechanics of the foot/ankle, knee and hip.
2. Describe the normal interaction of the hip, knee, ankle and foot during functional movements.
3. Describe common movement impairments during functional movements
4. Describe the current research literature related to the mechanisms of lower extremity injury.
5. Plan appropriate treatment interventions based on a biomechanical assessment of the lower extremity.

Course Schedule:

Day 1 - Saturday, June 6, 2026

8:00-9:00	Introductions & course overview
9:0-10:00	Pathomechanics of the lower quarter
10:00-10:15	Break
10:15-12:00	Pathomechanics of the lower quarter (cont.)
12:00-1:00	Lunch
1:00-2:00	Functional evaluation of lower quarter pathomechanics
2:00-3:00	Ankle joint: Pathomechanics of injury and treatment considerations
3:00-3:15	Break
3:15-5:00	Knee joint: Pathomechanics of injury and treatment considerations

Day 2 - Sunday, June 7, 2026

8:00-10:00	Patellofemoral joint: Pathomechanics of injury and treatment considerations
10:00-10:15	Break
10:15-11:15	Hip joint: Pathomechanics of injury and treatment considerations
11:15-12:00	Influence of hip muscle weakness on spine mechanics
12:00-1:00	Lunch
1:00-3:00	Intervention strategies for lower chain dysfunction
3:00-3:15	Break
3:15-5:00	Therapeutic exercise and progression: A proximal approach

