Spinal Biomechanical Engineering Syllabus

Dr. David Borges, MD Dr. Mark Studin, DC

16 hours

PART 1

Hours 1- 2 - Module 1: Spinal Biomechanical Engineering: Cartesian Coordinate System (2 hours) — Dr's. Studin, Borges

Hours 3-4 - Module 2: Spinal Biomechanical Engineering: Cervical Pathobiomechanics (2 hours) — Dr's. Studin, Borges

Hours 5-6 - Module 3: Spinal Biomechanical Engineering: Lumbar Pathobiomechanics (2 hours) — Dr's. Studing, Borges

Hours 7-8 - Module 4: Spinal Biomechanics in Trauma (2 hours) — Dr's. Studin

PART 2

Hours 9-10 - Module 1: Spinal Biomechanical Engineering & Organizational Analysis (2 Hours) — Dr's. Studin

Hours 11-12 - Module 2: Spinal Biomechanical Engineering: Cervical Digital Analysis (2 Hours) — Dr's Studin

Hours 13-14 - Module 3: Spinal Biomechanical Engineering: Lumbar Digital Analysis (2 Hours) — Dr's. Studin

Hours 15-16 - Module 4: Spinal Biomechanical Engineering: Full Spine Digital Analysis (2 Hours) — Dr's. Studin

How hours will be monitored: Each video cannot be fast-forwarded and a post-test must be completed for each 1-2 hour section.

Course Objectives: Explain Spinal Biomechanical Engineering: Full Spine Digital Analysis, *Digitalizing and analyzing the full spine images to diagnose pathobiomechanics as sequellae to trauma in relation to ligamentous failure and disc and vertebral pathology as sequellae.. Review of case studies for analysis of pathobiomechanics using a computerized/numerical algorithm along with corrective guidelines.*

Course Goals: Following this course doctors will be able to *identify ligament instability/failure/pathology using numerical values and models. This includes anterior and posterior vertebral body elements in rotatioal analysis with neutral, left and right lateral bending in conjunction with gate analysis*

Guest Speaker(s): William J. Owens DC, DAAMLP, Zair Fishkin, MD, Raymond Weigand DC