

<p>Course Name: KNPE 397/3.0</p> <p>Special Topics in Kinesiology I Topic ID: Experiments in Neuromechanics</p>	<p>Course Instructor: Dr. Jessica Selinger</p>	<p>Learning Hours: 120 (36L;84P)</p>						
<p>Course Description:</p> <p>This laboratory course will focus on advanced principles and techniques used in experiments in Neuromechanical Kinesiology, including applications in biomechanics, motor control, and neurophysiology. The objective of the course is to provide students with hands on experience in scientific study design, human instrumentation and data collection, signal processing and data analysis, and scientific report writing. These skills are intended to prepare students interested in pursuing careers involving the collection and/or interpretation of human data, be it research, clinical, or industry settings.</p>		<p>Prerequisite: Restricted to students in a KINE program Level 3 or above. KNPE 153, KNPE 254, KNPE 261</p>						
<p>Learning Outcomes:</p> <ul style="list-style-type: none"> • Describe the technologies used to investigate human neuromechanics during movement • Collect, process, analyze and interpret human neuromechanical data • Develop problem solving and critical thinking skills through coding and data analysis • Develop teamwork skills through group laboratory work • Communicate scientific findings through written lab reports 		<p>Exclusion: None</p> <p>Course Evaluation:</p> <table data-bbox="927 1008 1557 1125"> <tr> <td>Group Assignments (1 x 5% + 4 x 12.5%)</td> <td>55%</td> </tr> <tr> <td>Individual Assignments (5 x 4%)</td> <td>20%</td> </tr> <tr> <td>Independent Study</td> <td>25%</td> </tr> </table>	Group Assignments (1 x 5% + 4 x 12.5%)	55%	Individual Assignments (5 x 4%)	20%	Independent Study	25%
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<p>Course Outline</p>								
<p>Data Acquisition and Signal Processing</p>	<p>Standing Stability and Force Plates</p>							
<p>Muscle Mechanics and Electromyography</p>	<p>Gait Mechanics and Motion Capture</p>							
<p>Reflexes and Nerve Conduction Velocity</p>	<p>Activity Monitoring and Wearable Sensors</p>							