

# Junior Researcher Mentoring Programme

2023

<b>Code:</b>	JRMP2023_04
<b>School / Department:</b>	Department of Building and Real Estate
<b>Name of Research Team Member(s):</b>	Dr Shahnawaz Anwer, Research Assistant Professor Dr Shuai Han, Research Assistant Professor Dr Mohammed Abdul Rahman, Post-Doctoral Fellow
<b>Research Topic:</b>	Assessment of Foot Plantar Pressure and Gait Parameters Following Experimentally Induced Lower Limb Muscle Fatigue
<b>Short Description of the Research Project:</b>	<p>Muscle fatigue can lead to alterations in gait patterns, which could contribute to acute or overuse injuries. However, these effects are dependent on the muscles that are fatigued. This study aims to examine the distinct effects of proximal (i.e. quadriceps) and distal (i.e. calf) lower limb muscle fatigue on foot plantar pressure and gait characteristics. Fifteen healthy adult males and females will be recruited to participate in this study. Participants will be asked to perform fatigue tasks to experimentally induce fatigue in lower extremity muscles (i.e. quadriceps and calf muscles). Pre- and post-test data of foot plantar pressure and gait characteristics will be measured using a pair of wearable insole sensors. Data will be analysed using appropriate statistical tests. The findings from this study could be useful for helping people who are adapting to joint fatigue, whether it is in their proximal or distal joints. Differentiating between proximal and distal muscle fatigue responses may have significant consequences for risk assessment on construction sites.</p> <p>The participating students will learn how to conduct an experimental study in a laboratory setting. They will learn the</p>

	process of research, data collection, analysis, and research outcome. They will also understand the research setting, instrumentation used, and experimental procedures.
<b>No. of Places Offered:</b>	3
<b>Frequency of Meetings:</b>	Monthly
<b>Special Requirement(s):</b>	Students with science backgrounds are preferred.

*\* The information presented above is subject to change.*