

<p><b>Course Name:</b>  <b>KNPE 449/3.0</b></p> <p>Advanced Protein Metabolism</p>	<p><b>Course Instructor:</b></p> <p>Dr. Chris McGlory</p>	<p><b>Contact Hours:</b></p> <p>Lectures: 1 x 3 hrs / 12 weeks</p>										
<p><b>Course Description:</b></p> <p>The aim of this course is to provide a basic understanding of the biological factors that regulate the size of human skeletal muscle. Specific emphasis will be placed on how nutrition and exercise affect skeletal muscle growth/loss in both the athletic and clinical setting. Students will be provided with insight into the use of isotopic labeling of amino acids and other contemporary laboratory-based techniques used to study human skeletal muscle protein turnover.</p>		<p><b>Prerequisite:</b></p> <p>Level 4 in a KINE Plan and (HLTH 331/3.0 or KNPE 349/3.0)</p> <p><b>Exclusion:</b></p> <p>KNPE 493 topic ID: Advanced Protein Metabolism (W'20; W'21)</p>										
<p><b>Learning Outcomes:</b></p> <ul style="list-style-type: none"> <li>Identify key factors affecting human skeletal muscle protein turnover and gain a cursory knowledge of experimental methods used to study skeletal muscle growth.</li> <li>Critically evaluate strengths and weaknesses of study designs related to experimental research.</li> <li>Independently develop an experimental approach to address an existing knowledge gap in the nutritional and exercise sciences.</li> <li>Apply advanced knowledge translation skills in the form of scientific presentations.</li> </ul>		<p><b>Course Texts:</b></p> <p>NOTE: Nutrition software package: estimated cost \$75.</p> <p><b>Course Evaluation:</b></p> <table border="0"> <tr> <td>Mid-term 1</td> <td>15%</td> </tr> <tr> <td>Journal Club Article</td> <td>25%</td> </tr> <tr> <td>Mid-term 2</td> <td>15%</td> </tr> <tr> <td>Grant Proposal</td> <td>25%</td> </tr> <tr> <td>Presentations</td> <td>20%</td> </tr> </table>	Mid-term 1	15%	Journal Club Article	25%	Mid-term 2	15%	Grant Proposal	25%	Presentations	20%
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<p><b>Course Outline</b></p>												
<p>Introduction and course overview</p>	<p>Fatty acids and skeletal muscle</p>											
<p>Amino acids and metabolic tracers</p>	<p>Molecular control of skeletal muscle mass</p>											
<p>Resistance exercise and protein nutrition</p>	<p>Mitochondria and skeletal muscle</p>											
<p>Exercise, Sex, and Hormones</p>	<p>Muscle atrophy</p>											