**Course Name:**
KNPE 427/3.0  
Exercise, Nutrition and Metabolism

**Course Instructor:**
Dr. Brendon Gurd

**Contact Hours:**
Lectures : 2 x 1.5 hrs/wk  x 12 weeks

**Prerequisite:**
KNPE 125/3.0 and KNPE 227/3.0; and KNPE 255/3.0  
KNPE 225/3.0 is recommended for Fall-Winter 12-13 but will be required in subsequent years. Level 3 or above in a KINE or PHED plan.

**Exclusion:**
No more than 3.0 units from KNPE 427/3.0; PHED 427/3.0; KINE 427/3.0

**Course Description:**
The focus of KNPE 427/3.0 is on aspects of skeletal muscle energy metabolism related to exercise and nutrition, with a particular emphasis on the regulation of carbohydrate and fat metabolism and the mechanisms regulating their use as substrates for muscle during rest and exercise. The use of nutrition and exercise in humans to assess the impact of these perturbations on whole body metabolism are considered.

**Course Texts:**
Required readings will be posted on Moodle and will also be available through Top Hat.

**Learning Objectives:**
- Advanced understanding of mechanisms underlying classic and current topics in exercise metabolism
- Gain a cursory knowledge of the methodology used in exercise metabolism
- Understand both results and methodologies presented in primary references from exercise metabolism:
  a. utilize primary articles as a reference material;
  b. efficiently extract study methodologies (subjects, experimental protocols, materials and methods);
  c. interpret results within the contexts of 427, exercise metabolism, and health.
- Independently learn and integrate information on selected topics in exercise metabolism

**Course Evaluation:**
- On-line quizzes 10%
- Three multiple choice tests 30%
- Video presentation 30%
- Final exam 30%

**Course Outline**

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<td>Review of metabolism and model of conservation of mass for ATP</td>
<td>Impact of detraining/ What exactly happens in sedentary muscle</td>
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<td>Exercise intensity and substrate utilization (Carbohydrate)</td>
<td>Oxidative stress in health and disease</td>
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<td>Exercise intensity and substrate utilization (Fatty Acid)</td>
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<td>Substrate Utilization and Training</td>
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