

HKIN 562 Bioenergetics of Physical Activity

Instructor: Michael Koehle, MD PhD.

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When: Mon 5:00 - 8:00 (**Term 1, 2009**)

Where: WarMem Gym room 208

Course description

This course will initially explore the basic energy systems of the human body; primarily concentrating on the bioenergetics of the skeletal muscle cell, recovery from muscular work, substrate utilization, muscle fibre types, strength, endurance. We will then explore the relevant applied topics related to bioenergetics and performance.

Course text and materials

No text book. The course will be based on on-line materials, scientific research papers and review articles, and guest speakers.

Course requirements and evaluation

Students will be expected to:

- 1) come prepared to participate in the in-class discussions and debates
- 2) provide a presentation for the class relevant to both their own thesis/major paper work and the course
- 3) review or acquire basic exercise physiology concepts

Marks will be based on a combination of participation, in class presentations and a final examination.

Topics covered:

- 1) Energy Systems: Aerobic, Anaerobic Metabolism
- 2) Thresholds: Anaerobic, Lactate, and Ventilatory Thresholds
- 3) Performance Testing for Sport: aerobic, anaerobic, clinical populations
- 4) Nutrition for Sport
- 5) Doping and energy systems
- 6) Bioenergetics and special environments
- 7) Bioenergetics in special populations