### Course Name:
KNPE 225/3.0

### Course Instructor:
Dr. Michael Tschakovsky

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

### Prerequisite:
- KNPE 125/3.0
- Level 2 or above in a HLTH, KINE or PHED plan.

### Exclusion:
No more than 6.0 units from KNPE 125/3.0; KNPE 225/3.0, PHGY 210/6.0, PHGY 212/6.0, PHGY 214/6.0

### Course Description:
This course is designed to develop an understanding of the concept of homeostasis and the integrated control of cellular and organ responses involved in regulation and maintenance of homeostasis. Special emphasis will be placed on the systems that respond to exercise stress.

### Course Texts:
The Top Hat interactive learning platform provides a “mini-textbook” consisting of 6 chapters that are key original resources for development of your understanding and skill in understanding principles of physiological function and building physiological system models that enable physiological problem solving. These are required reading. When you register for Top Hat for the course, you will be provided with instructions for the purchase of these chapters.

(Recommended Resources)

### Intended Student Learning Outcomes:
At the conclusion of this course students should be able to:
- Identify and Describe what a given component in a physiological system IS and DOES to facilitate “physiological literacy”

### Course Evaluation:
- Assignments (6) 45%
- Tests (5) 35%
- Final Exam 20%
- Explain and illustrate the key principles guiding physiological function and homeostatic regulation to guide building physiological system models
- Explain and Illustrate integrated physiological models to inform their application in understanding changes in any physiological variable
- Develop and Apply physiological models based on key principles of physiological function for several different physiological systems to solve physiological problems

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<thead>
<tr>
<th>Course Outline</th>
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<tbody>
<tr>
<td>The concept of homeostasis</td>
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<tr>
<td>Basics of regulation – feedback systems</td>
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<tr>
<td>Regulation of muscle metabolism</td>
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<td>Control of ventilation</td>
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<td>Regulation of blood oxygen and carbon dioxide</td>
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<td>Regulation of acid/base balance</td>
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