California State University, Northridge  
Department of Kinesiology  

KIN 652 - Seminar in Exercise Physiology of Skeletal Muscle  

Dr. Ben B. Yaspelkis, III  
Office: RH 282  
Office Hours: T 12:00-1:00 PM, Th 3:00-4:00 PM and by appointment  
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E-mail: ben.yaspelkis@csun.edu  
http://www.csun.edu/~bby44411  

Prerequisites: KIN 446/446L.  

Course Objectives: This course will expose the student to advanced topics and theories in the physiological, anatomical, morphological and biochemical structure of skeletal muscle and adaptations that occur in skeletal muscle in response to exercise training.  

Textbooks:  

Recommended Supplemental Texts  

Course Schedule  

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>9/5</td>
<td>Introduction</td>
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Section I  

<table>
<thead>
<tr>
<th>9/12</th>
<th>Ultrastructure of Skeletal Muscle</th>
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<tbody>
<tr>
<td></td>
<td>• SMMM, Chapter 1, 2, 3</td>
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</table>
9/19  Motor Units, the Size Principle and Muscle Force

- SMMM, Chapter 4, 5, 7

9/26  Mechanics of Muscle Contraction and Mechanisms of Fatigue

- SMMM, Chapter 9, 10

10/3  Regulation of Glycolysis and Mitochondrial Oxidation

- SMMM, Chapter 6

10/10  Adaptability of Skeletal Muscle: Aerobic Exercise Training

- SMMM, Chapter 11

10/17  Aerobic Exercise-induced Intracellular Signals and Protein Expression in Skeletal Muscle


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**10/24** MID-TERM EXAM

Section II –Topics and Articles

**10/31** Skeletal Muscle Hypertrophy

- SMMM, Chapter 14


**11/7** Carbohydrate Metabolism in Skeletal Muscle: Insulin Signaling and Glucose Transport


**11/14**

**Effects of Exercise Training on Skeletal Muscle Carbohydrate Metabolism**


**11/21**

**Defects in Skeletal Muscle Carbohydrate Metabolism**


11/28 Effects of Exercise on Skeletal Muscle Lipid Metabolism


12/5 Skeletal Muscle Pain, Damage and Disease

• SMMM, Chapters 12, 15


12/12 General Topics


• Additional topics to be determined

12/19 Final Exam, 5:30 - 7:30 PM
Fall 2006

**GRADING**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tr>
<td>Mid Term</td>
<td>100</td>
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<tr>
<td>Final</td>
<td>100</td>
</tr>
<tr>
<td>Discussion Participation</td>
<td>50</td>
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<tr>
<td><strong>Total</strong></td>
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**Grade Scale**

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<tbody>
<tr>
<td>A</td>
<td>94-100%</td>
<td>C</td>
<td>70-73</td>
</tr>
<tr>
<td>A-</td>
<td>89-93</td>
<td>C-</td>
<td>67-69</td>
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<tr>
<td>B+</td>
<td>84-88</td>
<td>D+</td>
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<tr>
<td>B</td>
<td>80-83</td>
<td>D</td>
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<td>D-</td>
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<tr>
<td>C+</td>
<td>74-76</td>
<td>F</td>
<td>&lt;56</td>
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*Exams:* There will be a Mid-Term and Final each worth 100 points. The Mid-Term will cover material from the first 7 classes. The final will cover material from the second 6 classes.

*Cheating:* Any student caught cheating will automatically fail the course and may be subject to more severe University discipline.