COURSE OUTLINE

HEFI 402 – Strength and Conditioning

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SCHOOL OF SCIENCE, HEALTH, AND CRIMINAL JUSTICE
Health and Fitness Promotion
MAY 2012
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HEFI 402 – Strength and Conditioning

A. **TITLE:** Strength and Conditioning

B. **COURSE NUMBER:** HEFI 402

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE:** No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
   3 hours of lecture

H. **CATALOG DESCRIPTION:**
   This course serves to provide students with advanced knowledge and skills to design and implement safe and effective strength and conditioning programs specifically for an athletic population. An in-depth study of resistance training is included, along with specialized topics such as bioenergetics, endocrine response to resistance exercise, and use of performance-enhancing substances. Aerobic and anaerobic exercise prescription for the athlete is discussed in detail. This course provides specific preparation for the student who wants to pursue certification as a Strength and Conditioning Specialist (CSCS) through the NSCA.

I. **PRE-REQUISITES/CO-COURSES:** Pre-requisite: HEFI 303

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

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<tr>
<th>Course Objective</th>
<th>Institutional SLO</th>
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<tr>
<td>a. Recommend ways to minimize injury risk during resistance training.</td>
<td>3. Prof. Competence</td>
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<tr>
<td>b. Analyze sports movements and recommend sport specific exercise prescription.</td>
<td>2. Crit. Thinking</td>
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<td>c. Develop training programs that demonstrate understanding of metabolic and endocrine responses to exercise.</td>
<td>2. Crit. Thinking</td>
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<td>d. Design appropriate anaerobic and aerobic training programs that optimize athletic performance.</td>
<td>2. Crit. Thinking</td>
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<td>e. Evaluate validity and reliability of various tests used to assess athletic performance.</td>
<td>2. Crit. Thinking</td>
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<td>f. Select and administer appropriate tests to help establish training program objectives.</td>
<td>2. Crit. Thinking</td>
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K. **TEXTS:**

L. **REFERENCES:**

L. **EQUIPMENT:** Technology enhanced classroom

N. **GRADING METHOD:** A – F.

O. **MEASUREMENT CRITERIA/METHODS:**
   - Quizzes
   - Written homework assignments
   - Lab skills
   - Strength and Conditioning program development project

P. **DETAILED COURSE OUTLINE:**

   I. Exercise Science Principles
      - A. Bioemechanics of Resistance exercise
      - B. Tissue Adaptation to Physical Activity

   II. Bioenergetics
      - A. Energy systems
      - B. Fatigue and Recovery
      - C. Metabolic specificity of training

   III. Endocrine Response to Resistance Exercise
      - A. Synthesis, Storage, Secretion of Hormones
      - B. Resistance exercise and hormonal increases
      - C. Adaptations in the Endocrine System
      - D. Anabolic and Adrenal Hormone Response to Exercise

   IV. Performance-Enhancing Substances
      - A. Types of Performance-enhancing substances
      - B. Anabolic steroids
      - C. Drug testing
      - D. Dietary supplements

   IV. Testing and Evaluation
      - A. Validity and Reliability
      - B. Selection and administration
      - C. Parameters of Athletic performance
      - D. Specific testing protocols

   V. Anaerobic Exercise Prescription
      - A. Sport-specific resistance training
      - B. Plyometric training
      - C. Speed and Agility training

   VI. Aerobic Exercise Prescription for the Athlete
      - A. Sport-specific aerobic endurance training
      - B. Special Issues in aerobic training
      - C. Periodization

   VII. Facility Management
      - A. Facility layout and scheduling
      - B. Facility policies and procedures
      - C. Facility maintenance and risk management

Q. **LABORATORY OUTLINE:** n/a