A. **Course Description**

- **Credits:** 3.00
- **Lecture Hours/Week:** 2.00
- **Lab Hours/Week:** 1.00
- **OJT Hours/Week:** 0
- **Prerequisites:** None
- **Corequisites:** None
- **MnTC Goals:** None

This course will present an overview of the most important concepts for coaches, fitness instructors, or practitioners in a health-science field. It is not the intent to study each topic in depth. This course will feature laboratory activities, demonstrations, and hands-on learning experience, and from these activities, conclusions will be discussed regarding concepts.

B. **Course Effective Dates:** 8/21/03 – Present

C. **Outline of Major Content Areas**

As noted on course syllabus

D. **Learning Outcomes**

1. Age-dependent development for athleticism and exercise
2. Learn about acute effects of exercise
3. Learn about the topics for exercise prescription
4. Learn chronic effects of exercise-Supercompensation
5. Study overview of physiological changes that occur immediately during and exercise bout
6. Understand acclimatization
7. Understand cardiovascular changes that increase efficiency and work capacity
8. Understand central and peripheral nervous activity during exercise
9. Understand central and peripheral neural adaptations and motor learning
10. Understand concept of thermoregulation
11. Understand concepts behind ergogenic aids, supplements, and drugs
12. Understand concepts of cardiovascular, hematological, and respiratory changes
13. Understand concepts of metabolic, hormonal, and enzymatic changes
14. Understand concepts of safe training and pushing people beyond their comfort zones
15. Understand concepts of weight loss, weight gain and increasing muscle mass
16. Understand muscular activity; contraction/relaxation, proprioception, metabolism
17. Understand muscular adaptation to training; anatomic, neuro-muscular, and biochemical changes
18. Understand periodization
19. Understand respiratory and chemical compensations
20. Understand skeletal adaptations, bones, tendons, and ligaments
21. Understand specificity: neuro-muscular and metabolic specificity
22. Understand the concepts of speed, power, endurance, coordination, balance, rhythm and agility
23. Understand the geometric facts of life of exercising in the heat and cold
24. Understand the role of dehydration in the etiology of heatstroke and cognitive impairment
25. Understand transport of metabolites, delivery of fuels, and removal of waste products

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

F. Learner Outcomes Assessment
   As noted on course syllabus

G. Special Information
   None noted