

**Course Outline for:** EXSC 2900 Athlete and the Environment**A. Course Description**

1. Number of credits: 1
2. Lecture hours per week: 1
3. Prerequisites: EXSC 2305 or BIOL 1102 or BIOL 2042
4. MnTC Goals: None

This course introduces students to acute and chronic physiological adaptations, injuries and illnesses associated with exercise in a variety of environmental conditions. This information will be directly related to health and fitness conditioning for athletes and understanding athletic performance limitations in outdoor settings.

**B. Date last reviewed/updated:** April 2022**C. Outline of Major Content Areas**

1. Adaptations to aerobic and anaerobic training pertaining to environmental conditions
2. Exercise in hot and cold environments
3. Exercise at altitude
4. Exercise below sea level
5. Environmental effects on children and adolescents
6. Environmental effects on aging populations

**D. Course Learning Outcomes**

Upon successful completion of the course, the student will be able to:

1. Demonstrate understanding of aerobic and anaerobic physiological responses to hot, cold, hyperbaric and hypobaric environments
2. Demonstrate knowledge of physiological responses to hot and cold environments during exercise
3. Describe the thermoregulatory control system of hyperthermic and hypothermic environments
4. Define and recognize the stages of, prevention and treatment of heat and cold exertion
5. Identify the importance and effects of hydration and salt intake during physical exertion
6. Demonstrate understanding of physiological responses and adaptations to hyperbaric and hypobaric environments during exercise
7. Recognize signs and symptoms of specific illnesses and injuries occurring during exercise at altitude and during underwater immersion
8. Define the short-term and long-term adaptations to altitude exposure
9. Gain an understanding of the effects of environmental conditions on children, adolescents, and aging populations during exercise

**E. Methods for Assessing Student Learning:**

At the discretion of the Instructor, students will be evaluated on daily attendance and participation in lecture and group activities; literary research skills and class presentation; practical hands-on activities; quizzes and final exam.

**F. Special Information**

None