



## UNIVERSITY OF CANBERRA RESEARCH INSTITUTE FOR SPORT & EXERCISE YEARS 11 & 12 EDUCATION PROGRAM

The University of Canberra Research Institute for Sport and Exercise (UCRISE) is a research and innovation institute which brings together staff, from a wide variety of academic disciplines based in the university's Faculties and other research centres, around the central uniting theme of sport.

UCRISE offers an education program for schools with students enrolled in a PE or Exercise Science program. Each session has been tailored to provide students with unique practical experiences that directly complement classroom content using the state-of-the-art facilities and equipment at UCRISE.

### Session outlines

#### Sport Performance

Students will participate in a fitness testing battery for a number of physical qualities including power, speed, agility, flexibility and endurance. This session will cover the following concepts:

- Definitions of fitness and different fitness qualities
- Methods of measuring physical fitness
- Athlete preparation for fitness testing

- Fitness test selection
- Factors that can influence test results
- Analysis of results from fitness testing

#### Exercise Physiology

Students will participate in a laboratory demonstration of the acute response to physical activity during a graded exercise test and a bout of short steady state exercise. Additionally students will examine the effect of heat and altitude on exercise performance through a practical exercise task completed in the normal conditions and repeated in the UCRISE environmental chamber. This session will cover the following concepts:

- Oxygen uptake during exercise including maximal oxygen uptake ( $\text{VO}_{2\text{max}}$ )
- Blood lactate response to exercise including resting blood lactate, lactate threshold and peak blood lactate
- Gas exchange during exercise
- Heart rate response to exercise
- Ventilatory response to exercise including breath rate, tidal volume and minute ventilation.
- Acute effects of altitude and heat on exercise performance

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### Biomechanics

In this session students will complete a number of practical activities to examine fundamental biomechanical theories. The biomechanics session can cover the following concepts:

- Newtons laws; inertia, acceleration and the law of action-reaction
- Summation of forces
- Accuracy
- Projectile motion
- Base of support, balance and stability

### Sport Psychology

In this session students will explore and experience a number of strategies used in the mental preparation of athletes for competition. This session will cover the following concepts:

- Motivation
- Goal setting
- Arousal
- Visualisation and imagery
- Relaxation

### Why UCRISE?

UCRISE is home to a state of the art facility including physiology and biomechanical laboratories, as well as an environmental chamber that can simulate the conditions of some of the world's harshest environments. Our facilities are fully appointed with the latest equipment and technology, and all of our education program instructors are post graduate students specialising in sport and exercise science. Your students will be exposed to world's best practice in a comfortable and engaging learning environment that is sure to enrich their knowledge and skill.

### Session Bookings

You can book your school into a UCRISE education session at any time throughout the year to suit the sequence of studies implemented within your classroom. To book a session for your class please phone or email us at (02) 6206 8882 and [brad.clark@canberra.edu.au](mailto:brad.clark@canberra.edu.au).

### Further Information

For further information please contact us at:

P: (02) 6206 8882,

E: [brad.clark@canberra.edu.au](mailto:brad.clark@canberra.edu.au)

W: [canberra.edu.au/research/institutes/ucrise](http://canberra.edu.au/research/institutes/ucrise)

