Exercise Science A / T

Exercise Science

Course content is based on the applied sciences of anatomy, physiology, and the biomechanical analysis of movement, including sporting activity. The course also focuses on sport performance and nutrition and certain areas of athlete mental preparation and physical rehabilitation.

Lake Ginninderra College utilises a vast range of platforms both theoretical and practical to deliver Exercise Science. Unit content is learned through interactive slideshows embedded in the Google environment. Students will complete workshops in the strength and conditioning facility and be shown the latest apps on smart devices to sharpen their knowledge of the human body. In addition, students will be provided opportunities to access and participate in the UC Rise program at the University of Canberra. This program uses state of the art facilities and provides exposure to laboratory testing to determine VO2 max performance and functional anatomy labs using cadavers.

Exercise Science A

This course is relevant to students who intend to pursue vocational study at institutions such as UC College and CIT. The course also provides students with skills to apply for traineeships or employment as assistants, administrators and support staff in the sports industry

Exercise Science T

This course is relevant to students who intend to pursue tertiary studies in teaching (physical education), nursing, biomedical science (medicine), human nutrition, physiotherapy, rehabilitation, sports science and exercise physiology.

Units

The units outlined below are semester length (value 1.0) and can be broken down further into term units (value 0.5). The units can be studied in any particular order, there is no prior knowledge required.

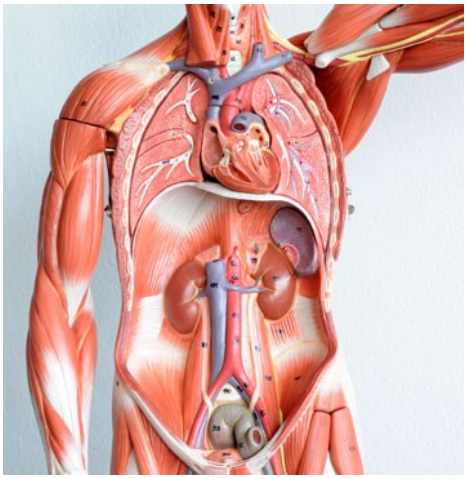
Units

The units outlined below are semester length (value 1.0) and comprise two half-semester units (value 0.5)

Anatomy and Physiology of the Human Body

Students study the basic organisation of the human body (cells, tissues, organs, systems) and then study in more depth the structure and function of the circulatory and respiratory systems.

Students become familiar with anatomical and movement terminology and study the structure and function of the skeletal, articular, muscular and nervous systems.



Movement analysis is then carried out through the study of muscles and the actions involved in specific exercises.

Factors Affecting Performance

Students will examine the physiological, psychological and behavioural theories that influence athletic performance. Students will be introduced to factors affecting performance and develop basic insights into the science underpinning the management of sports injuries and athletic mindset. Students will examine and explore how the extent and intensity of sports participation relates to the incidence of sports injuries and explore a range of technical and scientific approaches for maintaining the physical and mental well-being of athletes.

Preparation for Training and Performance

Students investigate the factors that influence sports performance. Students will critically analyse the effectiveness of training and nutritional guidelines and how they contribute to the improvement of athletic performance. Students will explore a variety of training and nutritional principles to develop an understanding of the varying needs of community target groups and elite athletes.

The Body in Motion

Students explore the biomechanical and physiological principles involved in ana-

lysing and interpreting the body in motion and energy production. Students will apply a variety of methods used to analyse movement patterns and examine the physiological adaptations to exercise. Students will investigate the biomechanical and physiological factors that influence athletic performance.