HLTH 3015 RESISTANCE TRAINING AND PHYSIOLOGY

Credit Points 10

Legacy Code 400890

Coordinator Paul Marshall (https://directory.westernsydney.edu.au/search/name/Paul Marshall/)

Description In 2016, this unit is replaced by 401148 - Strength and Conditioning. Resistance Training and Physiology presents the growing body of research evidence supporting specific methods of resistance exercise and training, as well as the role of resistance exercise in disease prevention and health promotion. Students gain an increased understanding of the energetics and physiology of resistance exercise by also completing laboratories focussed on the research of important applied concepts in resistance exercise and training. Students also experience resistance training.

School Health Sciences

Discipline Human Movement

Student Contribution Band HECS Band 4 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) HLTH 2004 AND
BIOS 2037 AND
BIOS 3003

Restrictions Students must be enrolled in program 4658 - Bachelor of Health Science (Sport and Exercise Science).

Learning Outcomes

On successful completion of this subject, students should be able to:

1. a detailed understanding of the energetics of muscle contractions during different intensities of resistance exercise;
2. a detailed understanding of the molecular biology of muscular strength and hypertrophy;
3. knowledge of the systemic physiological responses to different intensities of resistance exercise;
4. knowledge of the differences in force and power development between different types of muscle contractions: isometric, isotonic, isokinetic;
5. understanding of the changes to repetitions and sets performed in resistance exercise, and how specific changes in either component can change the training stimuli for either of muscular strength, power or endurance;
6. knowledge of the roles of resistance exercise and training to sports performance, as well as disease prevention and rehabilitation;
7. developed skills for developing and supervising quality resistance training programs specific to certain desired outcomes;
8. mastered techniques required for safe and optimal resistance training of specific muscles and/or muscle groups using free weights and weight machines;
9. Explain the reasoning behind discipline specific OH&S procedures and systems;
10. Perform all practical skills and activities safely and in compliance with standard operating procedures and laboratory rules.

Subject Content

1. The research-based evidence for specific types of resistance training for specific outcomes; such as strength, power and endurance.
2. The cellular response mechanisms to resistance training for stimulation of muscle anabolism and hypertrophy.
3. The neural components of increased muscular strength.
4. Gender differences in strength and responses to resistance training.
5. Different equipment used in resistance training, and how they differ in promoting specific resistance training outcomes.
6. Training paradigms used in resistance training.
7. Potential abuse of pharmacological and nutritional ergogenic aids in resistance training, as well as their performance and health consequences.
8. The roles of resistance exercise and training in sports and athletics.
9. The roles of resistance exercise and training in disease prevention and rehabilitation.
10. Designing resistance exercise training programs.
11. Experiencing resistance exercise training.

Special Requirements

Legislative pre-requisites

Prior to enrolling in this subject, students must have:

1) submitted a Student Undertaking Form and have applied for a National Police Certificate;
2) submitted Working with Children Check Student Declaration;
3) possess a current WorkCover Authority approved First Aid Certificate.

Teaching Periods