Introduction
This unit covers the knowledge an instructor needs about anatomy and physiology relating to exercise programming for a range of clients.

Format
This is a home study theoretical part of the course which is one of the four accredited units of the qualification. You will receive a manual and online learning access. There is also a mock paper that can be attempted to help you decide if you are ready for the exam. You do not need to submit any of the work completed for home study. Webinars available monthly too.

Content

Understand the heart and circulatory system and its relation to exercise and health
You will be able to:
- Explain the function of the heart valves
- Describe coronary circulation
- Explain the effect of disease processes on the structure and function of blood vessels
- Explain the short and long term effects of exercise on blood pressure, including the valsalva effect
- Explain the cardiovascular benefits and risks of endurance/aerobic training
- Define blood pressure classifications and associated health risks

Understand the musculoskeletal system and its relation to exercise
You will be able to:
- Explain the cellular structure of muscle fibres
- Describe the sliding filament theory
- Explain the effects of different types of exercises on muscle fibre type
- Name, locate and explain the function of muscles and their attachment sites for the major muscles of the body
- Identify the anatomical axis and planes with regard to joint actions and different exercises
- Describe joints/joint structure with regard to range of motion/movement and injury risk
- Describe the structure of the pelvic girdle and associated muscles and ligaments

Understand postural and core stability
You will be able to:
- Describe the structure and function of the stabilising ligaments and muscles of the spine
- Describe local muscle changes that can take place due to insufficient stabilization
- Explain the potential effects of abdominal adiposity and poor posture on movement efficiency
- Explain the potential problems that can occur as a result of postural deviations
- Explain the impact of core stabilisation exercise and the potential for injury/aggravation of problems
- Explain the benefits, risks and applications of the following types of stretching
Content Continued

Understand the nervous system and its relation to exercise
You will be able to:
- Describe the specific roles
- Describe nervous control and transmission of a nervous impulse
- Describe the structure and function of a neuron
- Explain the role of a motor unit as the functional contractile unit of a muscle
- Explain the process of motor unit recruitment and the significance of a motor unit’s size and number of muscle fibres
- Explain the function of muscle proprioceptors and the stretch reflex
- Explain reciprocal inhibition and its relevance to exercise
- Explain the neuromuscular adaptations associated with exercise/training
- Explain the benefits of improved neuromuscular coordination/efficiency to exercise performance

Understand the endocrine system and its relation to exercise
You will be able to:
- Describe the functions of the endocrine system
- Identify the major glands in the endocrine system
- Explain the function of hormones

Understand energy systems and their relation to exercise
You will be able to:
- Identify the contribution of energy
- Identify the by-products of the three energy systems and their significance in muscle fatigue
- Describe the effect of endurance training/advanced training methods on the use of fuel for exercise

Assessments
Externally set and assessed theory test in the form of a multiple choice written theory paper, externally set and marked by CYQ.

The time allocation for the theory paper is 50 minutes. The theory assessment will comprise 40 questions where learners must achieve a minimum of 28 marks overall to pass.

When you are ready to sit the exam, call or email and you will be advised on what dates and venues are available.

Certification (Units)
Anatomy and physiology for exercise and health (This unit is part of the Certificate in Personal Training)