Human musculoskeletal anatomy
- Study of musculoskeletal human anatomy
- It is essential that the following areas of the human body have been studied - bones, joints, ligaments, muscles, blood vessels and nerves of the upper limb, lower limb, vertebral column, thorax and pelvis, as well as the bones, joints muscles and nerves of the head and face.
- It is desirable that applicants have also studied histological features of tissues of the musculoskeletal systems, to have used a regional approach to their study (i.e. studied the complete anatomy of the shoulder or hip or ankle and foot at one time before moving onto another body region) and to have attended laboratory classes in which human cadavers are studied.
- For examples of subjects that cover the necessary assumed knowledge, refer to the Unit of Study description of BIOS1168 Functional Musculoskeletal Anatomy A and BIOS1169 Functional Musculoskeletal Anatomy B in the Faculty of Health Sciences Handbook.

Human physiology/ Exercise physiology
- Study of the anatomy, histology, and physiology of the main systems of the human body.
- It is essential that that the anatomy and physiology of the following systems of the human body have been studied – cardiovascular, respiratory, renal, digestive, reproductive and endocrine.
- It is essential that applicants have studied 2 units of human physiology (or one unit over 2 semesters) OR 1 unit of physiology and 1 unit of exercise physiology.
- It is desirable that applicants have also studied pathophysiology of the systems described above
- It is desirable that applicants have also studied pharmacology, immunology
- It is desirable that applicants have also studied adaptations to the systems of the body during exercise and impact of exercise and exercise training on system function.
- For examples of subjects that cover the necessary assumed knowledge, refer to the Unit of Study description of BIOS1170 Body Systems: Structure and Function in the Faculty of Health Sciences Handbook.
Biomechanics

- Study of the application of mechanical principles to human movement and everyday human activities.
- Topics include: kinematics, vectors, Newton’s laws of motion, work, energy, power, and momentum; for both translational and rotational motion; and the influence of fluids on motion.
- It is essential that this study includes gait analysis or human kinematics/kinetics or motion analysis.
- For examples of subjects that cover the necessary assumed knowledge, refer to the Unit of Study description of EXSS1018 Biomechanics of Human Movement in the Faculty of Health Sciences Handbook.

Neuroscience

- Study of the anatomy and physiology of neural structures as well as fundamental concepts of nervous system functioning.
- It is essential that the anatomy of the brain and spinal cord have been studied.
- It is essential that applicants have also studied the structure of the nervous system and neurones as well as the basic electrical concepts underlying neural signals including signal transmission and communication.
- It is essential that the following systems/pathways have been studied:
  - spinal reflexes (e.g. stretch reflex)
  - somatosensory system (including receptors and pathways for sensations such as touch, temperature, proprioception and pain)
  - autonomic nervous system (including the sympathetic and parasympathetic pathways), and
  - the descending motor pathways (including the pyramidal and extrapyramidal systems).
- It is desirable that students have attended laboratory classes in which human cadavers are studied.
- For examples of subjects that cover the necessary assumed knowledge, refer to the Unit of Study description of BIOS1171 Neuroscience in the Faculty of Health Sciences Handbook.

Psychology

- Study, at an introductory level, of the major paradigms and methodological approaches of contemporary psychology.
- It is desirable to study these in relation to health and wellbeing.
- For examples of subjects that cover the necessary assumed knowledge, refer to the Unit of Study description of BACH1161 Introductory Behavioural Health Sciences in the Faculty of Health Sciences Handbook.

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Motor performance and learning
- Study of the acquisition and execution of skilled movements.
- It is essential that this study includes an examination of the features of the environment that can be manipulated to promote motor learning, including goal setting and feedback.
- It is desirable that this study includes both a behavioural and neurophysiological perspective of skilled movement.
- For examples of subjects that cover the necessary assumed knowledge, refer to the Unit of Study description of EXSS2025 Motor Control and Learning in the Faculty of Health Sciences Handbook.

Research Statistics
- Study of research design and methods of data analysis and interpretation.
- It is essential that applicants have studied quantitative methods of data analysis for nominal, ordinal and interval data and be familiar with some common data analysis tools such as SPSS, Sigmaplot, excel, or any statistics package.
- It is desirable that applicants have studied qualitative methods of data analysis.
- For examples of subjects that cover the necessary assumed knowledge, refer to the Unit of Study description of HSBH1007 Health Science and Research in the Faculty of Health Sciences Handbook.

Measurement of human performance
- Study of any aspect of measurement of the human body.
- Examples include – blood pressure, ECG, joint range of movement, muscle strength, psychometric tests, waist circumference, oxygen uptake, walking speed, skinfolds.
- This material is typically covered during Units of Study which cover human physiology, exercise physiology, biomechanics and psychology subject matter.