

Biomechanics

(RHAB817)

Pathways, programmes/specialisations the course is attached to

Postgraduate Certificate in Health Science, Master of Health Science, Postgraduate Diploma in Health Science, Master of Health Practice

Am I eligible to enrol in this course?

The paper is for health professionals who will normally have completed the requirements of one of the following in a relevant field from a New Zealand tertiary institution or equivalent:

- A Bachelor of Health Science
- A Graduate Diploma in Health Science
- Relevant professional practice or experience deemed by the university to be equivalent to a bachelor's degree.

Where entry qualifications do not meet the criteria for study at postgraduate level, completion of transitional studies may be required before the applicant is admitted to the programme.

What is this course about?

Fosters the advanced study of mechanical principles and their association with the musculoskeletal system. Includes muscle architecture, electromyography, viscoelasticity and the effect of internal and external forces on body tissues. Focuses on applied biomechanical factors that influence damage to tissues and the treatment of dysfunction.

What can I expect to learn?

- Muscle architecture and mechanics:
 - morphological changes following injury and rehabilitation
- External and internal forces acting on the body:
 - measurement techniques
 - magnitudes
- Elasticity and viscosity:
 - measurement techniques
 - stress/strain
 - visco-elastic properties
- Kinematics:
 - measurement techniques
 - kinematics and joints
- Electromyography:
 - apparatus, detection of signals, recording techniques
 - description and analysis of the electromyographic signal

How is this course taught?

The teaching process will include lectures and laboratory sessions, the latter reinforcing the former and allowing the students to collect data and analyse it in a similar way to that presented in the literature.

How will I be assessed?

1. Written assignment (3000 words)
2. Laboratory Exercises (3500 words)

Who will be teaching me?

Course Coordinator: Professor Peter McNair

Across his academic career, Professor Peter McNair has published over 190 peer reviewed journal papers in the fields of orthopaedics, rehabilitation, biomechanics and rheumatology. He has been an invited speaker in these areas at numerous international conferences, and has international collaborations with research groups in Australia, France, Belgium, Denmark

and Canada. Professor McNair's work has been recognised with over 20 national and international research awards. Professor McNair has had editorial and advisory board roles on five international journals in areas related to biomechanics and rehabilitation. In 2020, Professor McNair was awarded an Honorary Fellowship from Physiotherapy New Zealand for accomplishments related to research and development of postgraduate education.

Other lecturers:

Dr David Rice, Dr Grant Mawston, Prof Mark Boocock,

Fees

Information about course tuition fees may be found at:

<http://www.aut.ac.nz/study-at-aut/fees-scholarships-and-finance/fees/postgraduate-fees>

Enrolment and enquires

Please contact Debra Spinetto for any enquiries about enrolment. Further information about our postgraduate offerings may be found online.

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