

# Biomechanics

(RHAB817) 15 points

## Pathways, programmes/specialisations the paper is attached to

Postgraduate Certificate in Health Science, Postgraduate Diploma in Health Science and Master of Health Practice in the Rehabilitation and Musculoskeletal Physiotherapy specialisation areas, and Master of Health Science.

## Am I eligible to enrol in this paper?

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's degree
- Professional qualification recognised by the university as being equivalent to a bachelor's degree
- Evidence of professional 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 paper 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 paper taught?

<b>Location:</b>	On campus at North Campus, AUT
<b>Teaching Period(s):</b>	Semester 1
<b>Block Course:</b>	Yes
<b>Online:</b>	Online learning tasks incorporated

## How will I be assessed?

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

## Who will be teaching me?

**Paper Coordinator:** Peter McNair, PhD, Professor of Physiotherapy and Dr. David Rice, PHD, Senior Lecturer.

Peter McNair's research focuses on biomechanics of lower limb pathologies, particularly joint injuries and osteoarthritis, where he has a specific interest in exercise rehabilitation, and the extensibility of the soft tissues such as muscle and tendon. David Rice's research focuses on the rehabilitation of joint injury and arthritis, the mechanisms and management of chronic pain conditions and enhanced recovery after orthopaedic surgery.

## Fees

Information about paper tuition fee for papers may be found at:

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

## Enrolment and enquires

New to AUT? Please submit an application for a programme on the AUT website - <https://www.aut.ac.nz/study/applying>.

When you are a confirmed student you will be able to indicate your paper selection. Any questions about applying to AUT please contact Debra Spinetto – [fhes.enquiries@aut.ac.nz](mailto:fhes.enquiries@aut.ac.nz)

Current students will receive an re-enrolment email each year – any enquiries please contact [fhes.administration@aut.ac.nz](mailto:fhes.administration@aut.ac.nz)

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