UNIVERSITY OF LIVERPOOL

MSc

Musculoskeletal Biomechanics

Study mode	Duration	
Full-time	12 months	Apply by: **29 August 2025** Starts on: **22 September 2025**

About this course

Biomechanics draws from a range of specialities such as functional anatomy, exercise physiology and mechanical engineering. The programme will build on the diverse range of skills and subject backgrounds of our students to provide them all with an advanced education in the mechanics of structure, function and motion of the musculoskeletal system.

Introduction

At its core, any animal or human body that moves, or performs a static task, has biomechanics involved. This MSc Musculoskeletal (MSK) Biomechanics programme draws from a range of specialities such as functional anatomy, exercise physiology and mechanical engineering. The programme will build on the diverse range of skills and subject backgrounds of our students to provide them all with an advanced education in the mechanics of structure, function and motion of the musculoskeletal system.

You will study how applying the principles of biomechanics can be applied in a variety of situations such as the clinic, industry, sports and veterinary settings that will be of relevance to their future career ambitions. The programme culminates in a research project where you will be able to explore a specific area of interest to you with supervision from an expert in the field.

Who is this course for?

There are a vast range of professional careers that directly or indirectly use biomechanics. Examples include: physiotherapists who want to go into clinical research, physiotherapists targeting a career in the industry (e.g. help develop new physio equipment, sports equipment or prosthetics), prospective orthopaedic surgeons (human and veterinary), etc. This course is designed for students with a relevant first degree who are interested in areas such as musculoskeletal physiotherapy, sports or clinical mechanics or animal biomechanics.

This programme is also open to intercalating clinical students.

What you'll learn

- Foundational principles of mechanics that underpin musculoskeletal function in humans and other animals
- Hands-on experience with all major musculoskeletal biomechanical techniques used in scientific research and clinical assessment. This includes advanced techniques and modelling approaches.
- Analyse and present biomechanical data.
- Design, plan, execute and communicate a biomechanical project.
- Transferrable skills such as biological data analysis and presentation.

Back to top

Course content

Discover what you'll learn, what you'll study, and how you'll be taught and assessed.

Semester one

MUBM001 Principles of Musculoskeletal Biomechanics

MUBM002 Experimental Methods in Biomechanics

LIFE707 Biological Data skills

Modules listed are subject to approval – the full module structure for this course will be available soon.

Modules

Compulsory modules	Credits
BIOLOGICAL DATA SKILLS (LIFE707)	15

Programme details and modules listed are illustrative only and subject to change.

Semester two

MUBM004 Biomechanical Modelling and advanced techniques,

MUBM003 Applications of Biomechanics

Modules listed are subject to approval – the full module structure for this course will be available soon.

Programme details and modules listed are illustrative only and subject to change.

Final project

ILCMS701 Research Project

Modules listed are subject to approval – the full module structure for this course will be available soon.

Programme details and modules listed are illustrative only and subject to change.

Teaching and assessment

How you'll learn

Teaching will be led by expert staff from our departments of Musculoskeletal and Aging Science, Physiotherapy and Engineering. Students will be taught by a mixture of seminars, extensive lab work and practical sessions, lectures, small group learning and online content. Students can expect to spend all of their third semester working on a research project that reflects their own area of interest.

How you're assessed

Assessments include:

- Portfolios
- Closed-book exam
- Lab reports
- Seminar reports
- Peer assessment
- Grant writing exercise (mimicking a real funding application process) or outreach/ educational projects following the student's main career focus
- Research project in the style of a research article (preparing students for academic and professional publication)

These tasks are designed to simulate the types of activities graduates will face in their professional or academic careers.

Liverpool Hallmarks

We have a distinctive approach to education, the Liverpool Curriculum Framework, which focuses on research-connected teaching, active learning, and authentic assessment to ensure our students graduate as digitally fluent and confident global citizens.

The Liverpool Curriculum framework sets out our distinctive approach to education. Our teaching staff support our students to develop academic knowledge, skills, and understanding alongside our **graduate attributes**:

- Digital fluency
- Confidence
- Global citizenship

Our curriculum is characterised by the three **Liverpool Hallmarks**:

- Research-connected teaching
- Active learning
- Authentic assessment

All this is underpinned by our core value of **inclusivity** and commitment to providing a curriculum that is accessible to all students.

Back to top

Careers and employability

Upon graduating from an MSc in Musculoskeletal Biomechanics students will be ready to continue onto careers including, but not limited to:

- academic research (e.g. PhD studies)
- industrial R&D (e.g. in prosthetics, functional footwear, etc.)
- further studies (e.g. musculoskeletal physiotherapy, surgery)
- clinical biomechanics (e.g. gait assessments in the clinic)
- sports biomechanics (e.g. technique coaching, injury prevention)

There are a vast range of professional careers that directly or indirectly use biomechanics. Examples include:

- Physiotherapists who want to go into clinical research
- Physiotherapists targeting a career in the industry (e.g. help develop new physio equipment, sports equipment or prosthetics)
- Prospective orthopaedic surgeons (human and veterinary)
- Academic researchers

Career support from day one to graduation and beyond

Career planning

From education to employment

Networking events

Back to top

Fees and funding

Your tuition fees, funding your studies, and other costs to consider.

Tuition fees

UK fees (applies to Channel Islands, Isle of Man and Republic of Ireland)

Full-time place, per year - £13,300

International fees

Full-time place, per year - £28,300

Fees stated are for the 2025-26 academic year.

Tuition fees cover the cost of your teaching and assessment, operating facilities such as libraries, IT equipment, and access to academic and personal support.

- You can pay your tuition fees in instalments.
- All or part of your tuition fees can be funded by external sponsorship.
- International applicants who accept an offer of a place will need to pay a tuition fee deposit.

If you're a UK national, or have settled status in the UK, you may be eligible to apply for a Postgraduate Loan worth up to £12,167 to help with course fees and living costs. **Learn more about paying for your studies.**.

Additional costs

We understand that budgeting for your time at university is important, and we want to make sure you understand any course-related costs that are not covered by your tuition fee. This could include buying a laptop, books, or stationery.

Find out more about the additional study costs that may apply to this course.

Back to top

Entry requirements

The qualifications and exam results you'll need to apply for this course.

Postgraduate entry requirements

We accept a 2:2 honours degree from a UK university, or an equivalent academic qualification from a similar non-UK institution. This degree should be in a relevant programme and/or specialisation, which can include (but is not limited to): Anatomy, Physiotherapy, Biomedical or Mechanical Engineering, Medicine, Zoology, Sports Sciences, Veterinary or Biomedical Sciences. All students will also be invited to interview.

For those who do not meet this requirement but hold significant professional experience in a relevant area we will consider applications on an individual basis.

International qualifications

Select your country or region to view specific entry requirements.

Many countries have a different education system to that of the UK, meaning your qualifications may not meet our entry requirements. Completing your Foundation Certificate, such as that offered by the University of Liverpool International College, means you're guaranteed a place on your chosen course.

English language requirements

You'll need to demonstrate competence in the use of English language, unless you're from a majority English speaking country.

We accept a variety of international language tests and country-specific qualifications.

International applicants who do not meet the minimum required standard of English language can complete one of our Pre-Sessional English courses to achieve the required level.

IELTS

6.5 overall, with no component below 6.0

TOEFL iBT

88 overall, with minimum scores of listening 19, writing 19, reading 19 and speaking 20. TOEFL Home Edition not accepted.

Duolingo English Test

125 overall, with writing not less than 125, speaking and reading not less than 115, and listening not below 110

Pearson PTE Academic

61 overall, with no component below 59

LanguageCert Academic

70 overall, with no skill below 65

PSI Skills for English

B2 Pass with Merit in all bands

INDIA Standard XII

National Curriculum (CBSE/ISC) - 75% and above in English. Accepted State Boards - 80% and above in English.

WAEC

C6 or above

Pre-sessional English

Do you need to complete a Pre-sessional English course to meet the English language requirements for this course?

The length of Pre-sessional English course you'll need to take depends on your current level of English language ability.

Pre-sessional English in detail

If you don't meet our English language requirements, we can use your most recent IELTS score, or the equivalent score in selected other English language tests, to determine the length of Pre-sessional English course you require.

Use the table below to check the course length you're likely to require for your current English language ability and see whether the course is available on campus or online.

Your most recent IELTS score	Pre-sessional English course length	On campus or online
6.0 overall, with no component below 6.0	6 weeks	On campus
6.0 overall, with no component below 5.5	10 weeks	On campus and online options available
6.0 overall, with no more than one component below 5.5, and no component below 5.0	12 weeks	On campus and online options available
5.5 overall, with no more than one component below 5.5, and no component below 5.0	20 weeks	On campus
5.0 overall, with no more than one component below 5.0, and no component below 4.5	30 weeks	On campus
4.5 overall, with no more than one component below 4.5, and no	40 weeks	On campus

Your most recent IELTS score	Pre-sessional English course length	On campus or online
component below 4.0		

If you've completed an alternative English language test to IELTS, we may be able to use this to assess your English language ability and determine the Pre-sessional English course length you require.

Please see our guide to Pre-sessional English entry requirements for IELTS 6.5 overall, with no component below 6.0, for further details.

Back to top