

Overview

Programme Code	35902
Programme Title	Exercise Physiology
Awarding Institution	Liverpool John Moores University
Programme Type	Masters
Language of Programme	All LJMU programmes are delivered and assessed in English
Programme Leader	Jatin Burniston
Link Tutor(s)	

Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Master of Science - MS	See Learning Outcomes Below
Alternative Exit	Postgraduate Diploma - PD	Engage with advanced levels of theories and practice in relation to the field of Exercise Physiology Identify and apply appropriate research methodologies Take an informed position in relation to the field of Exercise Physiology Demonstrate personal skills in critical analysis, reflection and contextual awareness in a wide range of modules associated with the field of study.
Alternative Exit	Postgraduate Certificate - PC	Engage with advanced levels of theories and practice in relation to the field of Exercise Physiology Explore and test appropriate research methodologies Demonstrate appropriate levels of critical analysis, reflection and contextual awareness in focused areas of study

Alternate Award Names	
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External Benchmarks

Subject Benchmark Statement	
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Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length
Full-Time, Face to Face	September	LJMU Taught	1 Years

Aims and Outcomes

Educational Aims of the Programme

The programme aims to deliver contemporary training for careers in sport and exercise physiology. Our philosophy is that completion of the MSc should be a tangible stepping stone bridging the gap between an undergraduate foundation in sports science and employment in principal onward careers in academic research and applied practice. Our aim is to develop confident independent-thinkers that are equipped with the knowledge and skills to drive the evolution of the exercise physiology sector through their contributions to impactful research and research-led practice. Our graduates will display mastery of complex knowledge in exercise physiology, including the theoretical underpinnings of human exercise performance and the application of advanced technical skills to enable research or professional activity in the field of exercise physiology. The MSc in Exercise Physiology also aims to develop high-level cognitive skills and personal skills that will enable graduates to continue their own development. We hope the content of this course will serve to stimulate interest, such that students are eager to delve deeper into the topics using an investigative mind and critical appraisal. Above all, we hope to engender a strong proactive approach to postgraduate learning and students should perceive this course as an opportunity to read widely, take advantage of the world-class facilities and expertise available to them, and invest heavily in self-learning to develop their career.

Learning Outcomes

Code	Description
PLO1	Critically evaluate the appropriateness of a research design
PLO2	Discuss the underpinning theory and critically evaluate the assumptions and limitations of a key physiological performance test
PLO3	Demonstrate fundamental laboratory competencies, including, formulating molar solutions and manual pipetting
PLO4	Critically appraise literature regarding the signal transduction hypothesis of adaptation
PLO5	Construct a detailed rationale for an experiment employing molecular techniques to test a hypothesis relevant to exercise physiology
PLO6	Critically evaluate the reliability of wearable technology methods used to prescribe, quantify or monitor exercise volume and intensity
PLO7	Critically evaluate and define the parameters of or limitations to the application of wearable technology to the assessment and monitoring of sport- and/or health-related activity
PLO8	Apply and critically evaluate the use of technology in the assessment, prescription and management of exercise training using traditional and /or technological solutions

Code	Description
PLO9	Demonstrate understanding of muscle substrate utilisation at different exercise intensities across different human populations, and integrate the molecular and endocrine regulatory mechanisms that control fuel selection as function of exercise intensity and duration
PLO10	Synthesise information to demonstrate understanding of the musculoskeletal adaptations to exercise training and critically evaluate the underlying molecular and metabolic mechanisms
PLO11	Appraise established state-of-the-art research methodologies used to measure the fuel mixture used during exercise and the impact of various training modes on major health and performance outcome measures
PLO12	Critically evaluate data analysis procedures
PLO13	Accurately communicate complex scientific information in a concise illustrative form (i.e. infographic)
PLO14	Evaluate scientific information and construct arguments that integrate and extend knowledge
PLO15	Critically evaluate appropriate literature relating to the contemporary research topics under consideration
PLO16	Apply, report and interpret a range of data analysis procedures
PLO17	Produce a piece of independent empirical research in journal article format.
PLO18	Critically evaluate the concepts, methodologies and associated literature underpinning the research.
PLO19	Assimilate, integrate and critically discuss empirical research findings
PLO20	Demonstrate competency in ethical principles of research and critically discuss the research and research process
PLO21	Conduct a key laboratory test of physiological performance encompassing either aerobic and anaerobic capacity or muscle strength and be able to produce a report and disseminate this to the client in a timely manner
PLO22	Assess the precision and validity of physiological measures and perform difference testing using appropriate within- and between-subject designs

Programme Structure

Programme Structure Description

Students that gain 180 credits are eligible for the Master of Science (MSc) award, classified based on their average grade weighted by module credit rating.

All taught modules are mandatory to the MSc award. Modules 7108SPOSCI, 7161SPOSCI and 7162SPOSCI are delivered in Semester 1 only. Modules 7163SPOSCI, 7164SPOSCI and 7165SPOSCI are delivered in Semester 2 only.

The Research Project 7109SPOSCI is year-long. Research Methods (7108SPOSCI) is prerequisite to completion of the Research Project.

Students that gain 120 credits are eligible for a Post-Graduate Diploma (PgDip) and those achieving 60 credits are eligible for a Post-graduate Certificate (PgCert).

There is no requirement for specific modules to be completed for either the PgDip or PgCert exit awards.

Programme Structure - 180 credit points	
Level 7 - 180 credit points	
Level 7 Core - 180 credit points	CORE
[MODULE] 7108SPOSCI Research Methods Approved 2022.01 - 20 credit points	
[MODULE] 7109SPOSCI Research Project Approved 2022.01 - 60 credit points	
[MODULE] 7161SPOSCI Physiological Assessment Approved 2022.02 - 20 credit points	
[MODULE] 7162SPOSCI Molecular Exercise Physiology Approved 2022.01 - 20 credit points	
[MODULE] 7163SPOSCI Wearable Technology for Exercise Prescription Approved 2022.01 - 20 credit points	
[MODULE] 7164SPOSCI Integrative Physiology and Metabolic Regulation Approved 2022.02 - 20 credit points	
[MODULE] 7165SPOSCI Contemporary Research in Exercise Physiology Approved 2022.02 - 20 credit points	

Module specifications may be accessed at <https://proformas.ljmu.ac.uk/Default.aspx>

Teaching, Learning and Assessment

The MSc in Exercise Physiology encompasses a broad selection of teaching, learning and assessment strategies. Overall our philosophy has been to maximise opportunities for students to gain practical experience and, secondly, to assist students in developing the skills required to continue their own academic and professional development. The taught modules of the programme provide opportunities for students to experience practical training in lab-based or field-based physiological techniques, wet-lab biochemistry, computer practicals in statistical analysis and interactive scientific debates. The remaining taught delivery consists of student-centred learning strategies, including task-based and problem-based learning either individually or in small groups, and interactive lectures. Timetabled taught provision is supplemented with directed studies and tutorial support, and the delivery of each module includes instances of diagnostic and formative feedback to help students prepare for summative assessments. Our approach to assessment is similarly diverse and encompasses practical assessment in exercise physiology and an array of written scientific essays, laboratory reports, an examination and assessments based on communication to lay and scientific audiences.

Opportunities for work related learning

Principal onward careers include, doctoral research, exercise physiology assessment and performance-orientated training. The MSc dissertation process and practical modules provide training, mentorship and experience in work-related environments, including (i) laboratory based physiological and biochemical assessment, (ii) Field-based physiological assessments using wearable technologies, and (iii) scientific research environment.

Entry Requirements

Type	Description
Other international requirements	Overseas students whose first language is not English will require an IELTS score of 6.5 or above with a minimum of 5.5 in each component. Admission is made in line with the current equal opportunities regulations adopted by the University.
Alternative qualifications considered	Candidates would normally be expected to have a good honours degree (first class or upper second class) in sport science, or a related discipline with a substantial physiology component at level 6. The MSc Exercise Physiology programme typically enrolls 20 students per year. Demand for places is high and applicants are selected on merit, in some instances interviews may be conducted at the discretion of the Programme Leader. Within the application, the Personal Statement should be regarded as an important opportunity to evidence (i) passion for exercise physiology, (ii) ability to make the most of opportunities and (iii) autonomy/ motivation to go beyond minimum requirements. In addition, applicants may be required to provide copies of their research dissertation or equivalent evidence of their scientific training or experience.

Extra Entry Requirements