

VALIDATION REPORT

1.	Title of Programme(s): (incl. Award Type and Specify Embedded Exit Awards)	MSc in Sport and Clinical Biomechanics (90 ECTS) Postgraduate Diploma in Science in Sport and Clinical Biomechanics (60 ECTS) Certificate in Science in Sport and Clinical Biomechanics (30 ECTS) The Postgraduate Diploma and Certificate also act as embedded exit awards for the Master's programme.
2.	NFQ Level(s)/ No. ECTS:	9 90 ECTS, 60 ECTS, 30 ECTS
3.	Duration:	1.5 years
4.	ISCED Code:	0510
5.	School / Centre:	School of Science and Computing
6.	Department:	Department of Sport, Exercise and Nutrition
7.	Type of Review:	New Programme
8.	Date of Review:	27 th April 2021
9.	Delivery Mode:	Blended
10.	Panel Members:	Dr Aileen Kennedy, Vice President for Academic Affairs and Registrar, MTU Kerry Campus (Chair) Dr Richard Bolger, Lecturer, Department of Health, Sport and Exercise Science, Waterford Institute of Technology Dr Mark Matthew, Lecturer in Sport Physiotherapy, Ulster University Dr Christopher Duke, Founder/CEO Edge Performance Analytics Ms Carmel Brennan, Assistant Registrar (Quality), GMIT (Secretary)
11.	Proposing Staff:	Dr Des Foley Dr Lisa Ryan Mr Ed Daly Dr Louise Cannon Dr Robert Mooney Dr Siobhan Leahy Dr John Duggan Dr Caoimhe Tiernan

12.	<p>Programme Rationale:</p>	<p>Biomechanics describes the analysis of human movement using the science of mechanics and provides practitioners in sports, exercise, physical activity and healthcare with tools to analyse, monitor and improve body movement and function. Rapid advances in technology in both sports and medical settings has led to an increased interest in, and need for, specialist upskilling and professional development in biomechanics and movement analysis. This programme will focus on the role of biomechanics and movement analysis for the performance and maintenance of health, injury prevention and rehabilitation in athletic and clinical populations. It will be aimed at graduates who have already developed an interest in biomechanics and are aiming to improve their practical biomechanics knowledge and its application in athletic and clinical populations.</p> <p>The growth in interest in sport and exercise science for both performance and wellness has led to a growing demand for skilled and qualified Sport and Exercise Scientists and individuals specifically trained in movement analysis and biomechanics. The scale of the sports sector can be gauged from the fact that more than 39,000 people are employed in this industry in Ireland, with 400,000 volunteers active across all sporting codes. In addition, there are currently over 4,000 physiotherapists and physical therapists registered with CORU, the Irish Health and Social Care Professionals regulating body, working across sport and exercise, acute and chronic clinical and rehabilitation settings. Due to the rapidly ageing population, and an increased number of people living with, or at risk of developing, lifestyle-related chronic diseases, more individuals require assistance with training, physical activity and exercise advice specific to their individual needs. As a result, there is an urgent need for suitably qualified individuals with specialist skills to work in the sport, fitness and health sectors. In conjunction with the existing Level 8 BSc in Sport and Exercise Science and Level 9 MSc programmes in Applied Sport and Exercise Nutrition and Strength and Conditioning, the proposed programme will equip graduate with key skills in biomechanics and movement analysis to meet this demand.</p>
13.	<p>Potential Demand for Entry:</p>	<p>There is no course on the island of Ireland currently specialising in Sport and Clinical Biomechanics, therefore there is a considerable opportunity for GMIT to become leaders in this area. The course will be offered to students that have previously completed science or health based undergraduate degrees, providing students with an</p>


		<p>opportunity to specialise in biomechanics and movement analysis. The blended nature of the delivery of the programme with the much of the content being delivered online means that the programme can recruit both nationally and internationally.</p> <p>The programme targets an intake of 16 students (FTE). It is likely that there will be a mix of full time and part-time students and the programme has been developed to allow that flexibility.</p>
14.	Stakeholder Engagement:	<p>Sport and exercise professionals, chartered physiotherapists in private practice, and industry partners in Ireland and the UK were contacted to discuss the outline and content of the programme as well as the graduate profile, and in particular their view of key skills desirable of potential graduates. These consultations were used to inform the key focus of the MSc programme. The views of potential students were also elicited to establish perceived skills gaps that could be addressed by the programme.</p>
15.	Graduate Demand:	<p>Various organisations within the sports industry, including intercounty GAA management teams, professional sports organisations (nationally and internationally), other national governing bodies, sports partnerships, sports clothing manufactures seek graduates in relation to sports performance, rehab specialists and data analysis positions. Programme graduates will also be equipped to work in research and product development of sports technology and equipment and will be eligible to pursue research PhD programmes in a range of sport and exercise science disciplines including sport and clinical biomechanics.</p> <p>Specific job opportunities for graduates include strength and conditioning coaches with amateur or elite teams, performance analysis, athlete development programmes, public health improvement, addressing inequalities in health, developing/commissioning and implementing policies and programmes, monitoring, evaluation and assessment of training needs in individuals/teams, education and generating research evidence linking training regimes and sport and exercise performance across a range of employers.</p>
16.	Entry Requirements, Access, Transfer & Progression:	<p>Candidates must hold a cognate Level 8 Bachelor (Hons) degree with a minimum grade classification of H2.2 or equivalent. Typically, students will come from a scientific</p>

		<p>background however candidates with relevant experiential learning will also be considered.</p> <p>English Language Requirements will be as determined by GMIT and as published in the Access, Transfer and Progression code. The current requirements are as follows: Non-EU applicants who are not English speakers must have a minimum score of 6.0 (with a minimum of 6.0 in each component) in the International English Language Testing System (IELTS) or equivalent. All results must have been achieved within 2 years of application to GMIT. EU applicants who are not English speakers are recommended to have a minimum score of 6.0 (with a minimum of 6.0 in each component) in the International English Language Testing System (IELTS) or equivalent.</p> <p>GMIT is committed to the principles of transparency, equity and fairness in recognition of prior learning (RPL) and to the principle of valuing all learning regardless of the mode or place of its acquisition. Recognition of Prior Learning may be used to gain admission to the programme or gain exemption from modules in line with GMIT's RPL policy.</p> <p>Progression to the research project 2 (stage two) will follow successful completion of stage one. In the case where 60 credits is not reached progression to stage two is at the discretion of the Progression and Award Board. Each case will be considered on individual merit. Students will be offered a repeat opportunity at the next available sitting (up to a maximum of 4 attempts).</p> <p>Graduates of this programme may be eligible to progress onto PhD programmes.</p>
17.	<p>Programme Structure:</p>	<p>The structure of the programme has been influenced by the programme educational philosophy and the programme aims and learning outcomes. The programme is structured to provide coherence to and a context for learning as well as to provide considerable flexibility for learners. It is a 1.5 year programme designed as a MSc at level 9 and consists of a mixture of semesterised and year-long modules. The masters programme has two embedded awards which can be used as exit awards.</p> <p>The programme is designed to be highly practical in nature in response to the considerable feedback received from stakeholders during the concept phase of this MSc</p>

		<p>programme. While the Research Project data collection occurs in semester 3, it is envisaged that the project concept, literature review, ethics procedures etc will take place throughout semesters 1 and 2.</p>
<p>18.</p>	<p>Learning, Teaching & Assessment Strategies:</p>	<p>Student-centred teaching strategies will maximise problem-based learning focussed on authentic real-world scenarios relevant to the discipline. Active learning approaches (professional practice, research-based projects, field exercises, practical classes) will ensure that learning through doing dominates the programme rather than passive learning achieved by traditional lecturing approaches.</p> <p>A variety of teaching modalities fit to the content of the course will be used:</p> <ul style="list-style-type: none"> • Lectures (provided by: academic & research staff, industry, guest practitioners including physiotherapists). • Seminars: a session in which a specific topic fitting the scope of the course is discussed by an expert in the field • Practical exercises: sessions in laboratory facilities in which students get hands-on practical training in biomechanical assessment and analysis • Intensive group activities, in class debates, role play, journal clubs • Research based learning: learning from being actively or passively involved in a research activity <p>The programme is delivered in a blended learning environment where online lectures and activities will be complemented with onsite practical activities.</p> <p>The majority of modules on this programme use various types of continuous assessment as the primary assessment strategy. Assessments are aligned with the module and programme learning outcomes. The assessment types are varied, and include: written technical reports based on work carried out in the field, written assignments based on experimental work in the laboratory, oral presentations, technical assignments in biomechanical analysis, statistical analysis, a literature review, an ethics application and a research paper for publication. The assessment strategy will be reviewed annually by the programme board.</p> <p>An assessment schedule will be drawn up by the programme board at the start of the semester to ensure a balanced workload for students over the entire semester. Where appropriate, integrated assessments will be used between modules. This assessment schedule will be distributed to the students at the start of the semester. Feedback on their</p>

		performance in the assessments will be provided to students in a timely manner.
19.	Resource Implications:	The programme will require a minimum of one additional staff member to lecture as well as a technician 0.5 FTE. The estimated intake of approximately 16 students/year will place a significant requirement in research supervision hours for the 3rd semester of the programme. As the programme grows additional staff members may be required particularly in light of the need for research project support.
20.	Synergies with Existing Programmes:	The Applied Sport Technology module will be shared with the MSc in Strength and Conditioning.
21.	Findings and Recommendations:	General: The panel approved the masters programme subject to the conditions (1) and recommendations (14) outlined below. In addition, the panel approved the Certificate and Postgraduate Diploma programmes for entry should that be deemed appropriate in the future.
		Commendations: <ol style="list-style-type: none"> 1. The panel complemented the proposing team on the quality of documentation submitted and the extent of work evident in the development of the programme, in addition to the engagement of the proposers throughout the panel meeting. 2. This a unique programme development which will provide opportunities for graduates in cognate disciplines.
		Special conditions attaching to approval (if any): <ol style="list-style-type: none"> 1. Review and revise the programme and module learning outcomes to ensure that they are written appropriately at level 9 in all instances. Ensure that there is a clear distinction between the level and content of modules on this programme and similar modules at undergraduate level.

		<p>Recommendations of the panel in relation to award sought:</p> <ol style="list-style-type: none"> 1. Review the programme title and content of the programme to ensure both are aligned. For example, the programme as presently constituted could be retitled ‘Sports and Applied Biomechanics’ or similar. Alternatively, the clinical nature of the programme should be reflected better in the programme aim, learning outcomes and module content. 2. Include further statistics and analysis within the programme, clearly specifying the statistical content which will be covered by students. The panel strongly recommends that what is described as ‘advanced statistics’ is clearly signposted. Include programming content within the programme to give students relevant skills e.g. R, Python, MatLab. 3. Consider an increased threshold mark for passing core modules. 4. Clarify the attendance requirements for the practical sessions of modules in the programme’s special regulations. 5. Map lecturers against the modules clearly illustrating that each staff member has the relevant expertise to deliver the proposed content. The module descriptors should state the actual author of the module. 6. Ensure that the programme handbook clearly articulates the student experience and workload during the programme. 7. Remove reference to the requirement for attendance at weekends, as this may deter potential applicants. 8. In the future consider whether specialist streams could be developed to cater for other cohorts of applicants recognising the overlapping of biomechanics with disciplines such as engineering and physiotherapy. <p>Modules:</p> <ol style="list-style-type: none"> 9. Biomechanics of Human Movement – Review the module learning outcomes and content to ensure that this module is clearly distinct from a similar undergraduate module and is appropriate for level 9. Ensure that the module reflects critical thinking and analysis in addition to knowledge. Consider the inclusion of a clinical case scenario in lieu of the MCQ, to allow students to apply their knowledge using critical thinking and analysis. Consider the inclusion of modelling within this module to provide students with an additional skill set. 10. Applied Sports Biomechanics – Review the assessment strategy for this module to ensure that students have the
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		<p>opportunity to display critical analytical skills appropriate to level 9 students. Ensure that there is sufficient difference between this module and the Biomechanics of Human Movement module.</p> <p>11. Clinical Biomechanics – Consider what the intent of this module is i.e. whether it is focussed on biomechanics or rehabilitation. Clearly define the intended student competencies and reflect this in the module description, learning outcomes, syllabus and assessment, ensuring all are fully aligned. Revise the text of the assessment strategy ensuring that it totals correctly.</p> <p>12. Applied Sport Technology – Develop student skills with technology beyond that which is included in the module at present. For example, consider including advanced analysis to give students required skills e.g. Python. To make room for additional technologies it is suggested that some material from this module be moved to the Clinical Biomechanics module.</p> <p>13. Research Methods – Consider including additional statistical packages. Mention explicitly the advanced statistical skills that students will cover.</p> <p>14. Research Project 2 - Consider using a poster presentation in addition to a presentation as an assessment methodology for this module. Consider online methodologies for the presentation assessment e.g. webinar.</p>	
22.	FAO: Academic Council:	Approved:	
		Approved subject to recommended changes:	X
		Not approved at this time:	
	Signed:		
		Chair	Secretary