

# Programme Validation Report

Master of Science in Geospatial Engineering and Data Management

Postgraduate Certificate in Science in Geospatial Engineering

<b>Version of Report</b>	<b>Author</b>	<b>Date</b>
1	Jan Cairns (AQA)	28/11/2024
2	Jan Cairns (AQA)	02/12/2024
3	Jan Cairns (AQA)	05/12/2024

<b>Approval</b>	<b>Date</b>
Programme Proposal approved by Faculty Board	22/11/2023
Programme Proposal approved by University Programmes Board	12/12/2023
Programme approved by Faculty Board	Click or tap to enter a date.
Programme approved by University Programmes Board	Click or tap to enter a date.

## Section A - Programme Details

Title	Master of Science in Geospatial Engineering and Data Management Postgraduate Certificate in Science in Geospatial Engineering			
NFQ Level	9			
ECTS Credits	90/30 ECTS			
Mode of delivery	Part-time	✓	Full-time	✓
Duration	Part-time:	2 years/ 1 year	Full-time:	1 year (M.Sc.)
Mode of provision	Face-to-Face	✓	Blended	✓
			Online	<input type="checkbox"/>
Discipline Programmes Board	Digital Construction and Geospatial Surveying			
Faculty Board	Faculty of Engineering & Built Environment			
Schools involved in delivery	School of Surveying and Construction Innovation			
Delivery location	Bolton Street and online			
Collaborative Partner	N/A			
Date of Commencement	September 2025			

**Section B - Awards**

Award Title	Master of Science in Geospatial Engineering and Data Management
NFQ Level	9
Award Class	Major
ECTS Credits	90 ECTS
Classification of award	First Class Honours; Second Class Honours, First Division; Second Class Honours, Second Division; Pass (see Section F below)
Award (2) Title	Postgraduate Diploma in Science in Geospatial Engineering and Data Management
Exit/Embedded	Exit <input checked="" type="checkbox"/> Embedded <input type="checkbox"/>
NFQ Level	9
Award Class	Major
ECTS Credits	60 ECTS
Classification of award	Distinction; Merit, Grade One; Merit, Grade Two; Pass (see Section F below)
Award (2)	Postgraduate Certificate in Science in Geospatial Engineering
Exit/Embedded	Exit <input type="checkbox"/> Embedded <input checked="" type="checkbox"/>
NFQ Level	9
Award Class	Minor
ECTS Credits	30 ECTS
Classification of award	Distinction; Merit, Grade One; Merit, Grade Two; Pass (see Section F below)

**Section C - Programme Derogations (if required)**

<i>Derogations from Assessment Regulations/Marks and Standards already approved by University Programmes Board</i>	
None sought.	
Date of University Programmes Board Approval	Click or tap to enter a date.

**Section D Validation Process**

Please tick the process that was followed:

Validation Panel <input checked="" type="checkbox"/>	AQEC Meeting <input type="checkbox"/>	AQEC Sub-Group <input type="checkbox"/>
Date: 28 November 2024	Date:	Date:

## Panel Members

Name	Role	Affiliation
Patrick Flynn	Chair	Head of Teaching and Learning, Faculty of Engineering and the Built Environment
Dr Krzysztof Bakula	External Assessor	Associate Professor, Faculty of Geodesy and Cartography, Warsaw University of Technology
Sandy Powell	Professional Body representative	Murphy Geospatial and Chartered Institution of Civil Engineering Surveyors (CICES)
Dr Emma Robinson	Internal Assessor	Head of Discipline, School of Electrical and Electronic Engineering
Sima Rouholamin	Internal Assessor	Lecturer, School of Architecture, Building and Environment
Dr Maggie Farrell	Internal Assessor	Head of Teaching and Learning, Faculty of Business
Jan Cairns	Secretary to the Panel	Academic Quality Advisor, Academic Affairs

## Section E - Programme Evaluation

Governance & Management		
<i>Is the programme designed in accordance with the University's Strategic Plan, Educational Model and Quality Framework?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment: Please see condition in relation to Graduate Attributes.		
<i>Will the proposed strategies for programme management and quality assurance ensure that the programme is well managed and continuously enhanced and is in accordance with the University's Quality Framework?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment		
Awards Standards		
<i>Are the programme aims and learning outcomes clearly written using appropriate terminology? (See TU Dublin Guidelines)</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment: Please see the Panel's condition in relation to reducing the number of Programme Learning Outcomes.		
<i>Are the programme aims and learning outcomes aligned to the proposed level of the award on the NFQ in accordance with applicable Award Standards?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		

<i>Will the curricula, teaching, learning and assessment methods enable students to reach the appropriate standard to qualify for the award(s)?</i>	Yes ✓	No <input type="checkbox"/>
Comment: Please see the Panel's condition in relation to assessment.		
<i>Was the programme development appropriately informed by internal and external stakeholder input (including industry/practice, professional/regulatory bodies, and community organisations)?</i>	Yes ✓	No <input type="checkbox"/>
Comment: The Panel commends the strength of the Programme Team's engagement with industry in the development of the programmes.		
<i>Has the programme been benchmarked against similar programmes nationally and internationally?</i>	Yes ✓	No <input type="checkbox"/>
Comment: There are no similar programmes nationally.		
<i>Did the programme development take account of relevant external discipline benchmarks and Professional Statutory and Regulatory Body requirements?</i>	Yes ✓	No <input type="checkbox"/>
Comment: Relevant PRSBs were involved in the programme development, with a representative of CICES taking part in the validation event.		

Programme Design		
<i>Is the programme design informed by current development in the discipline and associated subject areas, having taken into consideration current trends, stakeholder feedback and market analysis?</i>	Yes ✓	No <input type="checkbox"/>
Comment: Extensive information was presented to the Panel in this regard.		
<i>Will there be opportunities for students to input into curriculum design decisions in the future?</i>	Yes ✓	No <input type="checkbox"/>
Comment: As well as University mechanisms for student feedback, the Programme Team will look for feedback from graduates of the programmes.		
<i>Is there a mechanism to ensure the input of external stakeholders in the ongoing development of the programme?</i>	Yes ✓	No <input type="checkbox"/>
Comment: An Industry and Professional Liaison Board has been established for the Geospatial Discipline within TU Dublin.		
<i>Is the programme curriculum well-structured with a logical progression of learning and development across the modules and stages?</i>	Yes ✓	No <input type="checkbox"/>
Comment: See Panel's Recommendation in relation to the timing of the delivery of research methods within the programmes.		

<i>Are there appropriate opportunities for students to undertake work-based learning, through work placements or work-based projects or assignments?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p> <p>Students on the full-time Masters programme will have the opportunity to select the Work Placement elective module.</p>		
<i>If applicable, have the relevant Blended Learning Checklists (i.e. Learning Experience Context &amp; Programme Context) been fully completed and submitted to the Panel?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p> <p>Please see the Panel's condition regarding the stated blended learning approach, as it notes that most modules are delivered face-to-face.</p>		
<i>Is the required programme and module information provided in the correct format?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p>		

Learning, Teaching & Assessment		
<i>Is there an effective student-centred teaching and learning strategy that aligns with the University's strategies and Education Model?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p> <p>The Panel notes the inclusion of real-world learning within the programmes.</p>		
<i>Does the assessment strategy provide an appropriate mix of assessment types that will enable students to demonstrate that they have met the module and programme learning outcomes?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p> <p>Please see the Condition of the Panel in respect of assessment.</p>		
<i>Do the learning outcomes and assessment strategy ensure that academic integrity can be maintained and attempted breaches of academic integrity are minimised/easily detected?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p> <p>The use of Problem Based Learning and authentic assessment helps to maintain academic integrity.</p>		
<i>Is there a comprehensive mapping of assessment methods and module learning outcomes and between module learning outcomes and programme learning outcomes?</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<p>Comment:</p> <p>Please see the Condition of the Panel in this regard.</p>		
<i>Are there opportunities in all modules to provide students with timely and constructive feedback on their learning and development?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p>		
<i>Do the teaching and assessment methods consider the diversity of the student cohort?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p>		

Student Supports & Learning Environment		
<i>Are there sufficient and appropriate resources (e.g. human, financial and physical) to support the proposed programme aims and objectives, to deliver the programme as specified?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<i>Are there sufficient staff that are appropriately qualified and capable to support the programme delivery, from both context and pedagogy perspectives?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<i>Are there appropriate arrangements in place to support the student experience and to monitor student performance?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<i>Are the access, transfer and progression arrangements clearly defined and appropriate, and aligned to TU Dublin policy/strategy in this regard?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Comment: Please see the Condition of the Panel and Recommendation of the Panel in respect of RPL candidates.		
<i>Do the student supports and learning environment cater for equality, diversity and inclusivity of students?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<i>Is the relevant programme information clearly communicated to the students to ensure they are informed, guided and cared for?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Comment: The Panel notes that there is a dedicated website for students. However, please see the Condition of the Panel in relation to the provision of a Student Handbook using the TU Dublin template.		
<i>Has the Checklist for First Year Student Success (where applicable) been fully completed and submitted to the Panel?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Comment: While this is a postgraduate programme, elements of this checklist are to be employed.		

Collaborative Provision (if applicable)		
<i>Are the roles and responsibilities of each partner clearly defined?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Comment: NA.		
<i>In the case of Joint or Multiple Awards, has due diligence on capacity of partner institution meeting the QA-QE requirements for the programme been undertaken?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Comment: NA.		

**Section F - Overall Recommendation**

1.	<b>Recommend approval of programme as submitted, without amendment</b>	<input type="checkbox"/>
2.	<b>Recommend approval of programme, subject to minor amendments/editorial changes to be completed as soon as possible and with recommendations for consideration.</b>  <b>Note:</b> recommendations are attached where it is considered that the programme would benefit from particular changes, or from a review of certain aspects of the programme over a period of time, with changes made if required. While recommendations are advisory in nature, there is an expectation that all recommendations are responded to appropriately and acted upon as appropriate.	<input type="checkbox"/>
3.	<b>Recommend approval of programme subject to the fulfilment of conditions. Recommendations for consideration may also be attached.</b>  <b>Note:</b> conditions are attached where it is agreed that changes must be made to the programme / programme documentation prior to the commencement of the programme. Conditions must be set where issues are identified that relate directly to academic standards or to University regulations or procedures. It should be clear what is required in order to meet the conditions.  A new programme cannot go forward to Faculty Board for consideration/approval unless a response to the Validation Report is submitted with revised programme documentation and the Academic Quality Enhancement Committee is satisfied that all conditions are met.	<input checked="" type="checkbox"/>
4.	<b>Do not recommend approval of programme.</b>	<input type="checkbox"/>

Areas for commendation	
1.	The enhancement of the previous Masters programme in this area through the addition of data management as a pillar within the programme.
2.	The extensive Programme documentation provided to the Panel demonstrates the serious approach of the Programme Team to the development of the programmes.
3.	The inclusion of team building and peer learning within the programmes.
4.	The strong ties with industry and the graduate network in this area which have contributed significantly to the development of the programmes.
5.	The use of N-TUTORR training materials and assessment criteria developed.

Conditions of Approval	
1.	<p>The TU Dublin Graduate Attributes that align to Strategic Pillars should be specifically referenced within the documentation.</p> <p>Response:</p> <p><i>See section 2.7 TU Dublin Strategic Plan 2030 of the updated Programme document.</i></p>
2.	<p>The Programme Team should undertake a mapping of Programme Learning Outcomes to Module Learning Outcomes. In so doing, the Team should also revisit the number of Programme Learning Outcomes with a view to reducing these significantly. The Panel recommends a maximum of 10 Learning Outcomes.</p> <p>Response:</p> <p><i>This has been completed and an accompanying excel sheet titled "MLO to PLO" has been submitted along with the response to the programme validation conditions and recommendations.</i></p> <p><i>The Learning outcomes have been reduced to 10. See section 4.2 and Table 4.2. The learning outcomes for the Pg Dip and Pg Cert have also been updated as per section 4.2.</i></p>
3.	<p>Further clarity is needed on the assessment methods used and the frequency of assessment to ensure a balanced workload for students. An Assessment Schedule should be prepared and placed in the Student Handbook.</p> <p>Response:</p> <p><i>This has been completed and an accompanying excel sheet titled "TU209 Draft Course Work Schedule" and "MSc Assessment weighting" has been submitted along with the response to the programme validation conditions and recommendations.</i></p>
4.	<p>Given the potential diversity of the student profile, further detail on RPL for entry, in terms of prior experiential learning and certified learning expected, should be provided.</p> <p>Response:</p> <p><i>See section 2.9 Required Prior Learning of the updated Programme document.</i></p>
5.	<p>The documentation including the information presented within the Programme and Module Catalogue should be thoroughly proofread and corrected as required. Attention should be paid, in particular, to module learning hours and to minimum thresholds of performance in assessment components.</p>



	<p>Response:</p> <p><i>This has been completed and an accompanying updated book of modules has been submitted along with the response to the programme validation conditions and recommendations.</i></p>
6.	<p>The Panel notes the use of a student-facing website but considers that a Student Handbook following the TU Dublin template should also be provided.</p> <p>Response:</p> <p><i>This has been completed and an accompanying Student Handbook in the designated TU Dublin template updated has been submitted along with the response to the programme validation conditions and recommendations.</i></p>

Recommendations	
1.	<p>The Panel considers that the Programme Team has demonstrated the need for the programmes but it also considers that the promotion of the programme will be vital to the viability of the programmes going forward. It recommends that the Team develop in more detail the promotion and recruitment strategy.</p> <p>Response:</p> <p><i>We have a staff member within the school who is timetabled for dealing with marketing. In consultation with them and the team the following measure are proposed.</i></p> <ol style="list-style-type: none"> <li><i>1. Branding material will be created for the new course, including a Programme brochure and a video to be uploaded on the TU Dublin YouTube channel. The recording is scheduled for February in on the studios in Aungier Street.</i></li> <li><i>2. This branding material will be shared with all surveying companies and our Industry and Professional Liaison board (IPLB).</i></li> <li><i>3. Once the course is listed in the ILEP database, allowing international students to apply for a visa, the team plans to organise a series of online events. These events will present the programme to International Coordinators and International Agents at different times to accommodate various time zones. We will also share the branding materials (video and brochure) to raise awareness of our course.</i></li> <li><i>4. Based on our experience working closely with the International Office for the MSc in GIS, which has a high ratio of international students, we also intend to participate in online events promoting our programme</i></li> </ol>

	<p><i>internationally. For example, we plan to feature at one of the Instagram Live sessions for Africa, organised by Education in Ireland.</i></p> <p><i>5. A social media campaign will be considered through the Communication and Marketing group and our TU Dublin supplier, Wavemaker. The course will be advertised through our own social media channels (a LinkedIn page specific to the course will be created) and through the TU Dublin past graduate network.</i></p> <p><i>6. The course will also be added to Irish websites such as courses.ie, Careersportal.com, Findamasters.com, and Postgrad.ie (TU Dublin has accounts on all of these websites). Additionally, it will be listed on Study portals, the largest international student platform. Although we have only a limited free account on this website, it has proven popular with our students of the MSc in GIS.</i></p>
2.	<p>The Programme Team should consider developing formal arrangements with companies whereby the companies undertake to send a number of employees onto the programmes, to help support the longterm viability of the programmes.</p> <p>Response:</p> <p><i>Similar agreements are in place within the department for our Earn and Learn programme for the BSc and talks are currently taking place with companies for the upcoming apprenticeship programme. Once we have approval for this programme and can begin advertising we intend to speak to industry in this regard.</i></p> <p><i>An Industry and Professional Liaison board (IPLB) was established in January 2024 to discuss the future of the Geospatial Discipline within TU Dublin. We intend to reach out to this group again once we have approval to move forward. On February 13th this year the department will hold our annual student awards night in Bolton Street. An invitation has been sent to industry to attend this evening and we will take this opportunity to update them on the progress of the Masters and ask for their support once we are in a position to recruit students.</i></p>
3.	<p>The Programme Team should provide learning outcomes based on prerequisite knowledge, skills and competences, which would support RPL candidates in compiling their portfolio of evidence of learning for their application for entry.</p> <p>Response:</p> <p><i>See section 2.5 Required Prior Learning of the updated Programme document</i></p>
4.	<p>The Programme Team should review the timing of research methods and the project proposal within the Masters programme, currently delivered as part of</p>

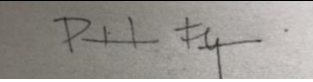
	<p>the Capstone project. The Panel considers that this element should be delivered at an earlier stage of the full-time programme and of the second year of the part-time programme.</p> <p>Response:</p> <p><i>The programme will share the Surveying capstone module with TU223. Based on the schedule for the capstone (See accompanying excel sheet titled "Capstone – Development Master Sheet") the first 9 weeks of Semester 1 for the full-time students is dedicated to developing the students research methods accumulating in the submission of a research proposal. The 2<sup>nd</sup> year part-time students will also commence their capstone in Semester 1 in tandem with the full-time students. This format and schedule ensure the students receive what would be deemed a traditional research methods module.</i></p> <p><i>Further to this by sharing the module with TU223 the programme is meeting the requirements of the Universities education model.</i></p>
5.	<p>Current connections with industry should continue to be developed to ensure that industry representatives have regular engagement with staff and students.</p> <p>Response:</p> <p><i>Noted See point 2.</i></p>
6.	<p>The Indicative Syllabus section of modules should be reviewed to ensure a more consistent approach in the presentation and detail. In addition, key words used in the promotion of the programmes should be embedded.</p> <p>Response:</p> <p><i>Completed, see condition 6.</i></p> <p><i>This was carried out for all new modules associated with this programme. Where a module is run by another programme this has been noted, the situation will be monitored and when this associated programme comes up for review these issues will be addressed.</i></p>
7.	<p>Given the diverse student cohort, the Panel encourages the Programme Team to provide advisory support to students on the selection of elective modules.</p> <p>Response:</p>


	<i>Noted, a dedicated time slot will be provided to discuss the electives with the module leads invited to discuss their modules. Sufficient information will be provided on Brightspace to ensure the students can make an informed decision.</i>
8.	<p>The Programme Team should review how Project Management and Business Management can be provided within the programme, either an elective or an additional module. The Panel considers that this could be made more explicit within the programmes.</p> <p>Response:</p> <p><i>This has been considered and an additional module, SSPL 9023 GI Project Management will be included as an elective.</i></p>

<b>Other matters to be brought to the attention of Faculty Board and/or University Programmes Board</b>
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<p>It is noted that these programmes like all others within TU Dublin will need to reflect University assessment regulations including, for example, award classifications that are approved for implementation in September 2025.</p>
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**Section G - Approvals**

<b>Validation Report</b>	
This report has been agreed by the Validation Panel and is signed on their behalf by the chairperson.	
Chairperson: Patrick Flynn	
Signed: 	Date: 28/11/2024

<b>School Response</b>	
The response to the conditions and recommendations has been agreed by the School and is signed by the Head of School.	
Head of School: 	
Signed: Mark Mulville	Date: Click or tap to enter a date. 13/01/2025

<b>Faculty Board</b>	
The report and response have been approved by Faculty Board	
Head of Teaching and Learning:	
Signed:	Date: Click or tap to enter a date.

<b>University Programmes Board (Programmes of 30 ECTS or great)</b>	
The report and response have been approved by the University Programmes Board	
Registrar:	
Signed:	Date: Click or tap to enter a date.