Programme Validation Report

Higher Certificate in Science in Geospatial Surveying

Version of Report	Author	Date
1	Jan Cairns	28/02/2025
2	Jan Cairns	07/03/2025
		Click or tap to enter a date.
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Approval	Date
Programme Proposal approved by Faculty Board	Click or tap to enter a date.
Programme Proposal approved by University Programmes Board	Click or tap to enter a date.
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	Higher Certificate in Science in Geospatial Surveying
NFQ Level	6
ECTS Credits	120 ECTS
Mode of delivery	Part-time ☐ Full-time ✔
Duration	Part-time: Full-time: 2 years
Mode of provision	Face-to-Face ☐ Blended ✔ Online ☐
Classification of award	In accordance with new TU Dublin assessment regulations.
Discipline Programmes Board	
Faculty Board	Faculty of Engineering & Built Environment
Schools involved in delivery	School of Surveying and Construction Innovation
Delivery location	TU Dublin Bolton Street and online
Collaborative Partner (where applicable)	Apprenticeship programme with Consortium
Date of Commencement	Start date? January 2026?

Section B - Awards

Award Title	Higher Certificate in Science in Geospatial Surveying
NFQ Level	6
Award Class	Major
ECTS Credits	120 ECTS
Classification of award	In accordance with TU Dublin Assessment Regulations

Section C - Programme Derogations (if required)

Derogations from Assessment Regulations/Marks and Standards already approved by University Programmes Board	
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 ✓	AQEC Meeting ☐	AQEC Sub-Group ☐
Date:28 February 2025	Date:	Date:

Panel Members

Name	Role	Affiliation
Patrick Flynn	Panel Chair	Head of Teaching and Learning, Faculty of Engineering, Built Environment and Apprenticeship
Ben King	External Panel Member	Head of Digital Innovation and Eircode, Department of the Environment, Climate and Communications
Ruth Coffey	Internal Panel Member	School of Electrical and Electronic Engineering, TU Dublin
Marian Coll	Internal Panel Member	School of Architecture, Building and Environment, TU Dublin
Noel O'Neill	Internal Panel Member	School of Mechanical Engineering, TU Dublin
Ruth Comerford-Morris	Professional Body representative	Deputy Director of Education, Society of Chartered Surveyors Ireland (SCSI)
James Lonergan	Professional Body representative	Director of Education, Society of Chartered Surveyors Ireland (SCSI)
Jan Cairns	Secretary to the Panel	Academic Quality Advisor, Academic Affairs, TU Dublin

Section E - Programme Evaluation

Governance & Management		
Is the programme designed in accordance with the University's Strategic Plan, Educational Model and Quality Framework?	Yes ✓	No ☐
Comment: This is set out in the Programme Proposal Form and the Programme Document.		
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?	Yes ✓	No ☐
Comment: Programme Management will be in accordance with the University's Quality Framework.		

Awards Standards		
Are the programme aims and learning outcomes clearly written using appropriate terminology? (See TU Dublin Guidelines)	Yes ✓	No ☐
Comment: The programme aims and learning outcomes are clearly written.		
Are the programme aims and learning outcomes aligned to the proposed level of the award on the NFQ in accordance with applicable Award Standards?	Yes ✓	No ☐
Comment: Programme aims and learning outcomes are aligned to Level Six within the NFQ.		
Will the curricula, teaching, learning and assessment methods enable students to reach the appropriate standard to qualify for the award(s)?	Yes ✓	No ☐
Comment: The modules will enable students to reach the appropriate standard for the award of Higher Certificate in Science in Geospatial Surveying.		
Was the programme development appropriately informed by internal and external stakeholder input (including industry/practice, professional/regulatory bodies, and community organisations)?	Yes ✓	No ☐
Comment: The programme was developed as a National Apprenticeship Programme by a Consortium comprising SOLAS, the SCSI and industry representatives including Tailte Éireann.		
Has the programme been benchmarked against similar programmes nationally and internationally?	Yes ☐	No ☐
Comment: There are no other providers in Ireland in this area, and no similar programmes currently in the UK or at this level in Europe.		
Did the programme development take account of relevant external discipline benchmarks and Professional Statutory and Regulatory Body requirements?	Yes ✓	No ☐
Comment: See above		

Programme Design		
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?	Yes ✓	No ☐
Comment: There was extensive stakeholder feedback and market analysis undertaken for the initial funding application to the National Apprenticeship Office and subsequently via the Consortium in the development of the programme.		
Will there be opportunities for students to input into curriculum design decisions in the future?	Yes ✓	No ☐
Comment: Student feedback in accordance with TU Dublin Quality Framework, as well as informal channels of communication between staff and students, will provide such opportunities.		
Is there a mechanism to ensure the input of external stakeholders in the ongoing development of the programme?	Yes ✓	No ☐
Comment: It is intended that an Advisory Panel will be established to ensure this ongoing input from external stakeholders.		
Is the programme curriculum well-structured with a logical progression of learning and development across the modules and stages?	Yes ✓	No ☐
Comment: The Panel considers that the module structure and progression from year one to year two was carefully considered by the Programme Team.		
Are there appropriate opportunities for students to undertake work-based learning, through work placements or work-based projects or assignments?	Yes ✓	No ☐
Comment: As an Apprenticeship programme, students shall be employed in relevant organisations for the duration of the programme. There are two work-based learning modules within the programme, constituting 50% of the programme, as is required by the National Apprenticeship Office (SOLAS).		
If applicable, have the relevant Blended Learning Checklists (i.e. Learning Experience Context & Programme Context) been fully completed and submitted to the Panel?	Yes ☐	No ☐
Comment: Two modules only incorporate online delivery. Please see Panel's recommendation in this regard.		
Is the required programme and module information provided in the correct format?	Yes ✓	No ☐
Comment: Please see Condition of the Panel in respect of inclusion of the calculation of the award classification within the Programme and Module Catalogue and Student Handbook.		

Learning, Teaching & Assessment		
Is there an effective student-centred teaching and learning strategy that aligns with the University's strategies and Education Model?	Yes ✓	No ☐
Comment: Programme delivery takes place on one day a week, as students are working four days a week.		
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?	Yes ✓	No ☐
Comment:		

The assessment strategy includes a range of theory and practical assessments. The Panel notes that there are very few final examinations.		
Do the learning outcomes and assessment strategy ensure that academic integrity can be maintained and attempted breaches of academic integrity are minimised/easily detected?	Yes ✓	No ☐
Comment: Please see Recommendation of the Panel in respect of the integrity of online assessments.		
Is there a comprehensive mapping of assessment methods and module learning outcomes and between module learning outcomes and programme learning outcomes?	Yes ✓	No ☐
Comment: This comprehensive mapping was provided to the Panel.		
Are there opportunities in all modules to provide students with timely and constructive feedback on their learning and development?	Yes ✓	No ☐
Comment: The Programme Team has committed to the provision of timely and constructive feedback, and this is signalled in the Student Handbook.		
Do the teaching and assessment methods consider the diversity of the student cohort?	Yes ✓	No ☐
Comment: The teaching and assessment methods are considered to be appropriate to the diversity of the student cohort.		

Student Supports & Learning Environment		
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?	Yes ✓	No ☐
Comment: The Panel is impressed by the excellence and range of equipment that is available to this programme as donated by industry (Topcon).		
Are there sufficient staff that are appropriately qualified and capable to support the programme delivery, from both context and pedagogy perspectives?	Yes ✓	No ☐
Comment: The teaching staff are considered to be at the leading edge in this discipline.		
Are there appropriate arrangements in place to support the student experience and to monitor student performance?	Yes ✓	No ☐
Comment: Please see Recommendation of the Panel in respect of monitoring student experience in the work place, within the Work-Based Learning modules.		

Are the access, transfer and progression arrangements clearly defined and appropriate, and aligned to TU Dublin policy/strategy in this regard?	Yes ✓	No ☐
Comment: As this is an Apprenticeship programme, students are recruited by the employers. Currently there is no Honours Degree programme within TU Dublin to which graduates of this programme may progress. The Panel notes that the School intends to pursue the development of an 'add-on' two year programme leading to an Honours Degree (recruitment has been paused on the existing four-year programme).		
Do the student supports and learning environment cater for equality, diversity and inclusivity of students?	Yes ✓	No ☐
Comment: The Programme Team has noted the gender imbalance in the geospatial surveying discipline, and the SCSI and the School will work together to try to address this.		
Is the relevant programme information clearly communicated to the students to ensure they are informed, guided and cared for?	Yes ✓	No ☐
Comment: The Student Handbook and Work-Based Learning Handbook were provided to the Panel.		
Has the Checklist for First Year Student Success (where applicable) been fully completed and submitted to the Panel?	Yes ☐	No ☐
Comment: Relevant elements of the First Year Framework for Success are in place. Please see Condition in relation to monitoring the work-based element of the programme.		

Collaborative Provision (if applicable)		
Are the roles and responsibilities of each partner clearly defined?	Yes ☐	No ☐
Comment: NA		
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?	Yes ☐	No ☐
Comment: NA		

Section F - Overall Recommendation

1.	**Recommend approval of programme as submitted, without amendment**	☐
2.	**Recommend approval of programme, subject to minor amendments/editorial changes to be completed as soon as possible and with recommendations for consideration.** **Note:** 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.	☐

3.	**Recommend approval of programme subject to the fulfilment of conditions. Recommendations for consideration may also be attached.** **Note:** 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.	☒
4.	**Do not recommend approval of programme.**	☐

Areas for commendation	
1.	The School's embracing of the new model of apprenticeship
2.	The equipment within the School that is available for this programme is excellent.
3.	The programme structure Set out of programme is logically thought through
4.	Self-directed learning is set out clearly and is at the appropriate level for the programme.
5.	The practical aspects of the programme and the application of knowledge as a means of assessment is appropriate for this Apprenticeship programme.
6	The interaction with the Professional Bodies and the industry has been impressively handled.
7	The Programme Team's work in securing funding demonstrates the quality of work put in by the staff.

Conditions of Approval	
1.	There should be an appropriate quality assurance mechanism in place to monitor the students' experience at the workplace/work-based learning modules.
	Response: Employers must adhere to the Apprenticeship Code of Practice in Ireland (https://www.solas.ie/f/70398/x/95bfccc618/apprenticeshipcodeofpractice.pdf), which outlines their responsibilities in supporting and monitoring apprentices. This ensures that students' progress is effectively tracked and that they are provided with a supportive and conducive learning environment. Key Components of the Quality Assurance Mechanism:

1. Employer Responsibilities
Employers play a central role in ensuring the success of the apprenticeship programme. Their responsibilities, as outlined in the Apprenticeship Code of Practice for Employers and Apprentices, include:

- Providing structured on-the-job training aligned with the programme's learning objectives.
- Assigning qualified mentors or supervisors to guide apprentices.
- Conducting regular progress reviews and providing constructive feedback.
- Maintaining accurate records of apprentices' progress and achievements.
- Facilitating workplace assessments and ensuring a safe, supportive environment for learning.

Employers must also allow SOLAS, the statutory authority overseeing apprenticeships in Ireland, to conduct monitoring and quality assurance checks as part of their oversight responsibilities.

2. Role of the School
While the School of Surveying and Construction Innovation in TU Dublin is responsible for monitoring students' academic progress through coursework assessments and evaluations, and supervision of the Work Based Learning modules, the primary responsibility for workplace monitoring lies with the employer. This dual approach ensures that the practical aspects of the programme align with the academic curriculum, providing a comprehensive evaluation of the students' learning outcomes.

3. Enrolment Process
Students are enrolled in the programme directly through their employers. This employer-led approach reinforces the workplace-centered nature of the apprenticeship and ensures that employers take an active role in selecting and supporting apprentices.

4. SOLAS Oversight
As the statutory body responsible for apprenticeships, SOLAS plays a critical role in ensuring compliance with the Apprenticeship Code of Practice. SOLAS conducts both scheduled and unscheduled monitoring visits to assess the quality of the programme and ensure that employers are meeting their obligations. Employers must facilitate these reviews by providing access to necessary information and resources.

5. Framework for Apprenticeship Programmes
The Action Plan for Apprenticeship 2021-2025 provides a comprehensive framework for apprenticeship programmes in Ireland. It outlines the standards and guidelines that employers must follow to ensure the quality and integrity of the apprenticeship system. For more details, you can refer to the Action Plan for Apprenticeship 2021-2025 (https://www.gov.ie/en/publication/0879f-action-plan-for-apprenticeship-2021-2025/).

2.	The School should engage further with the Consortium prior to the programme commencing, in order to clarify the following: • where the responsibility lies to make employers aware of their duties in relation to the students (i.e. SOLAS or TU Dublin or both). For example, Garda Vetting of workplace mentors will be required, because of the possibility of minors or vulnerable adults within the student body; • ensuring that mentors are trained to support students, particularly in the case of students with diverse needs.
	Response: The Consortium are aware of the compliance requirements for employers as outlined in the Apprenticeship Code of Practice. This code of practice will be provided to all employers in advance of taking on an Apprentice: (https://www.solas.ie/f/70398/x/95bfccc618/apprenticeshipcodeofpractice.pdf). **SCSI** The SCSI will provide all Supervisors/Mentors with training, eligible for professional CPD points. The training will incorporate guidance and support for workplace mentors for students with diverse needs or are vulnerable learners into their employer briefing and guidance, in addition to making reference to the Protection of Young Persons (Employment) Act, 1996 in their mentor training. From a learning needs perspective, SCSI will also build into the mentor training and apprentice induction information and guidance on how to access learning supports through TU Dublin for registered students/ apprentices. **Employer** As apprentices are full time employees of the employer, employers will need to follow regular rules for employing young or vulnerable apprentices in the same manner as any employee. This guidance is in line with the apprenticeship code of practice. **TU Dublin Module Coordinator** The Module Coordinator for Work Based Learning in collaboration with the Programme Coordinator will ensure that employers are provided the Work Based Learning Handbook which outlines the roles and responsibilities of the Industrial Supervisor/Mentor. The Supervisors responsibility is to ensure they have identified suitable employees to act as mentors to the apprentices. The Industrial Supervisor/Mentor must meet the student's assigned TU Dublin supervisor during the on-site/off-site assessment to discuss the student's learning progress during the work-based learning period. The Industry Supervisor/Mentor must also be willing to train and observe the students' work-based learning and fill in the relevant details on the Industry Supervisor / Mentor assessment sheet provided. Supervisors will be informed where a mentee is under 18 years of age and Garda vetting is required.

3.	The Programme Team should review the Mathematics for Geospatial Surveying module. How this module was described at the validation does not match with the learning methods, learning outcomes and the indicative syllabus as laid out in the module descriptor.
	Response:

As proposed during the validation, the module name was changed to "Surveying Computations", as it describes better its content. The Surveying Computation module is well-suited for students who have achieved a Grade O6 at Ordinary Level or H7 at Higher Level in Mathematics in the Irish Leaving Certificate. These grades indicate that students possess a foundational understanding of mathematical concepts, including basic arithmetic, algebra, and geometry, which are essential for the computational aspects of surveying. While these grades reflect a moderate level of proficiency, the module is designed to build on this foundation, introducing practical applications of mathematics in surveying contexts. Students will have the opportunity to develop their skills in areas such as trigonometry, measurement, and data analysis, which are typically within the scope of their prior learning. Additionally, the module provides structured support to ensure that students can engage with the material effectively, even if their mathematical background is at a basic level.

According to the National Council for Curriculum and Assessment (NCCA) in Ireland, a Grade O6 or H7 in Mathematics demonstrates that students have achieved a minimum of 30-39% in their exams, reflecting a basic competency in mathematical reasoning and problem-solving. This level of knowledge aligns with the entry requirements for many technical and applied courses, where mathematics is used in practical, real-world scenarios. The Surveying Computation module is designed to accommodate students with this level of mathematical ability, ensuring that they can progress confidently through the material while gaining the skills necessary for success in the field of surveying.

The module overview page for the Surveying Computation module has been updated to include information confirming its suitability for students with an O6/H7 or better in Leaving Certificate Mathematics. The update highlights that the module is designed to build on foundational mathematical concepts, such as trigonometry, coordinate geometry, and basic algebra, which are typically covered at this level. It also emphasizes the module's focus on practical applications, ensuring accessibility for students with baseline mathematical proficiency.

The indicative syllabus is structured to build progressively from the mathematical foundation that students with O6/H7 Leaving Certificate Mathematics have. The syllabus does not contain any higher-level mathematical concepts that would typically be required by Level 8 programmes. Instead, it focuses on developing practical computational skills relevant to surveying applications, using accessible mathematical approaches that align with the students' existing knowledge base. This ensures that all students can engage effectively with the course material without requiring advanced mathematical expertise beyond what they have already achieved in their Leaving Certificate studies.

The assessment strategy has been designed as 100% Continuous Assessment, which provides a highly effective approach for students at this mathematical level. Students will be evaluated

	through MCQ tests that assess their knowledge of theoretical concepts. This will be complemented by the submission of calculated results, using the knowledge gained from this module, applied to data collected during practical surveying sessions in Bolton Street or Grangegorman Campus. This assessment method ensures a high level of practical application, allowing students to directly apply their computational skills to real surveying data. By connecting theoretical learning with hands-on calculation and data processing, students will develop practical competency in surveying computations while working within their mathematical comfort zone. This integrated approach reinforces the module's accessibility while maintaining its professional relevance and application focus.
4.	In relation to entry: • the minimum English language proficiency requirement for non-English speakers should be IELTS 6 or equivalent, in line with TU Dublin policy • the criteria, against which applications for the Recognition of Prior Learning for entry will be considered, should be specified and included in the Programme Document and in Programme and Module Catalogue.
	Response: The IELTS level has been changed to 6.0 to reflect standard TU Dublin policy. The following Recognition of Prior Learning (RPL) information has been added to the document: Applications may be considered from candidates who do not have the minimum academic requirements set out above but who do have significant relevant industry experience. In this situation, candidates will be interviewed, and Recognition of Prior Learning will be applied. RPL can be provided via supplying evidence of appropriate past learning, whether that is certificated or experiential learning. In some cases, it may be sufficient for the applicant to provide copies of appropriate certificates. In other cases, there will be a self-assessment exercise, preparation of a file or 'portfolio' of appropriate evidence of learning, an interview, and perhaps a demonstration or assessment task in Geospatial Surveying. Further details can be found at: https://www.tudublin.ie/explore/about-the-university/academic-affairs/academic-quality-assurance-and-enhancement/quality-assurance-and-enhancement-processes/recognition-of-prior-learning/ Specifically, all RPL applicants will initially be required to provide: 1. A CV/Resume outlining any academic and professional experience relevant to this application. 2. A written summary outlining how their previous qualifications and professional experience provide the required foundations for entry into the programme. This should include a background statement explaining why they wish to pursue the course. This summary should clearly outline the competencies and skills they have acquired and how they are relevant to the Geospatial Surveying programme. These competencies would include (not all have to be met):

- Surveying and Mapping Skills.
- Proficiency in using Geographic Information Systems (GIS).
- Data Analysis processing for interpreting spatial data and making informed decisions based on that data.
- Quality control and compliance i.e. ensuring all survey work adheres to industry standards,
- Skills in using various tools and technologies (e.g. GPS, total stations) for collecting geospatial data in the field.
- Technical and academic writing skills.

These competencies enable Geospatial Surveying Technicians to collect, process, and manage locational (or spatial) information to produce maps, construction drawings, and models. While it is not expected that a candidate will have satisfied all of them, the more competencies demonstrated, the more rounded the RPL application will be. This should be accompanied, where relevant, by a portfolio of appropriate evidence to underpin the written summary.

It may be the case that an interview is required following the reviewing of these documents if it is believed they insufficiently represent the applicant's potential. In terms of an appraisal if an interview should be required - the following criteria will be sought:
- Academic qualifications and/or Accreditation of Prior Experiential Learning [50%]
- Aptitude [30%]
- Motivation [20%]

| 5. | The calculation of the award classification, based on first year and second year modules and excluding the work-based learning component, should be included in the Programme Information in the Programme and Module Catalogue and in the Student Handbook. |

Response:
The following text has been added to the Programme Information in the Programme and Module Catalogue and in the Student Handbook:

The Higher Certificate qualification is placed at level 6 of the National Framework of Qualifications (NFQ). The qualification is awarded upon the accumulation of the total number of credits on the programme - 120 ECTS. The final award category is derived from credits on the taught modules only (15 ECTS per semester in each year = 60 ECTS) and excludes Work Based Learning credits (60 ECTS) which have a Pass or Fail status. The award of a Higher Certificate may be made with the classifications of Pass, Merit or Distinction as follows:

Classification of award of the Higher Certificate

Average Mark Band	Classification
≥ 70%	Distinction
60% - 69%	Merit, Grade One

	50% - 59%	Merit, Grade Two
	40% - 49%	Pass

6.	The Work-based Learning modules should be stated as Pass or Fail only, with appropriate criteria to be met to pass these modules, without the requirement to achieve a pass threshold of 60%.
	Response: Modules SSPL 1029 L6 Work-Based Learning 1 and SSPL 2045 L6 Work-Based Learning 2 have been updated. The modules assessments are Pass/Fail.
7.	Programme documentation, in particular module descriptors, should be reviewed to ensure completeness and accuracy (e.g. that learning hours capture lecture and tutorial hours correctly).
	Response: All staff have reviewed and updated module descriptors to ensure learning hours are clearly identified wrt lectures, tutorials, lab and fieldwork contact hours. In addition, modalities have been included, and all learning and teaching is recorded for full-time students.

Recommendations
1. The Programme Team should ensure that Artificial Intelligence is integrated into programme teaching and learning and that academic integrity matters are managed effectively around this.
Response: The programme team will continue to monitor the development of the industry regarding AI and will implement, where necessary across all the modules to reflect the evolving landscape of the geospatial profession. The programme team will implement a system for continuous feedback from students and industry stakeholders/apprenticeship consortium to ensure programme content and teaching methods evolve as AI technologies become more prevalent. Efforts will be made to include practical case studies showcasing how AI can enhance data analysis, automate processes, and improve decision-making. Where relevant AI tools will be applied to provide students with practical experience. This can help students understand how AI can be used in real-world surveying scenarios. The programme team will ensure that discussions on academic integrity are included, focusing on the ethical use of AI in academic work and professional practice. The potential application of an AI traffic light Traffic system for Generative AI use in module assignments will be suggested for use. This will enable lecturers to design assessments that promote the responsible use of AI tools.
2. The Programme Team should consider how the integrity of online examinations can be further supported, through interviews or other similar methods.

	Response: The Assessment procedure for all modules aligns with current TU Dublin's established Academic Integrity framework. Our approach is guided by TU Dublin's Academic Integrity Policy and Procedures, which provides a robust framework for promoting honest academic behavior. The programme strategy for ensuring online examination integrity includes: Assessment Design: assessments will be designed to include a variety of question types that require critical thinking and application of knowledge, making it more challenging for students to engage in dishonest practices. Continuous Assessment: by using continuous assessment methods, we can evaluate student performance over time, reducing the reliance on high-stakes examinations and allowing for a more comprehensive understanding of student learning. Student Education: We will provide clear guidance to students about academic integrity expectations in online examinations, including the potential for verification interviews, to ensure they understand both the ethical requirements and the consequences of misconduct.
3.	The number of assessments that students must complete over the two years should be considered to ensure that students are not being over assessed. The assessment schedule should also be considered to ensure that students are not overloaded with assessments at particular times.
	Response: The number and frequency of assessments in the programme has been considered by the Programme Team. In many instances assessments are part of continuous coursework and take place during class time in lab sessions at the end of a particular module component reinforcing the learning. This ongoing assessment ensures that students are progressing during the academic year and can then apply the knowledge gained in the workplace. An assessment schedule will be created in advance of each semester to ensure students are not overloaded at any particular time, this will be monitored by the programme coordinator.
4.	The Programme Team should review those modules where the 30% assessment thresholds to module components and consider whether these thresholds are required, providing rationale for same.
	Response: The 30% thresholds to module components have been removed from all modules.
5.	Further to Condition 3 above, clarification should be provided on what is expected from the student in relation to the Mathematics element of the programme. The Panel is of the view that, as the minimum entry requirements for the programme stipulate an O6/H7 grade in Mathematics at Leaving Certificate, students may require additional support for this element of the programme.

Response:

We acknowledge the Panel's view that students entering the programme with a minimum O6/H7 grade in Mathematics at Leaving Certificate may require additional support to engage effectively with the mathematical components of the programme. We are committed to ensuring that all students have the resources and support they need to succeed.

The Surveying Computations module has been specifically designed to accommodate students with this level of mathematical proficiency. The module builds on foundational mathematical concepts, such as trigonometry, coordinate geometry, and basic algebra, which are typically covered at the O6/H7 level. The syllabus avoids higher-level mathematical concepts that would be more appropriate for Level 8 programmes, focusing instead on practical computational skills relevant to surveying applications. This ensures that students can engage with the material confidently, even if their mathematical background is at a basic level.

To further support students, the module provides structured learning opportunities, including:

- **Progressive Learning Approach**: The syllabus is structured to build progressively from the students' existing mathematical knowledge, ensuring that they can develop their skills step by step.
- **Practical Applications**: The module emphasizes real-world applications of mathematics in surveying, helping students connect theoretical concepts to practical tasks.
- **Continuous Assessment**: The assessment strategy, which is 100% Continuous Assessment, includes MCQ tests and practical assignments. This approach allows students to apply their knowledge incrementally and receive regular feedback on their progress.

In addition to the module's design, TU Dublin offers a Mathematics Learning Centre (https://www.tudublin.ie/for-students/student-services-and-support/academic-support/maths-learning-centre/), which provides further support for students who may need additional help with the mathematical elements of the programme. The Mathematics Learning Centre is a drop-in facility where students can seek assistance at any time, without the need for an appointment. This flexible and accessible resource ensures that students can receive personalized support tailored to their individual needs, whether they require help with specific concepts or general guidance on mathematical problem-solving.

By combining the structured design of the Surveying Computations module with the additional support available through the Mathematics Learning Centre, we are confident that students will have the tools and resources necessary to succeed in the mathematical aspects of the programme. This integrated approach ensures that all students, regardless of their starting point, can progress confidently and develop the skills required for success in the field of surveying.

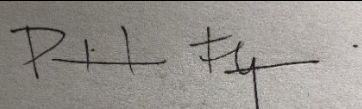| 6.	The Programme Team should explore the possibility of more flexibility in terms of modes of delivery. The Panel is of the view that part of some modules could be delivered online, which may ease pressure on staff and students on the one day of scheduled programme delivery.

	Response: The course has been designed in collaboration with the industry, given that it will follow an apprenticeship model. There were several consultations regarding the mode of delivery made by the apprenticeship consortium. The structure put forward as part of the initial validation review was agreed to be the most beneficial to employers and realistic by the programme team to ensure the students would meet the learning outcomes. Considerations were given to moving a module online for an evening and reducing the time spent at the University on the agreed day the students would be expected to attend. However, it was decided that given that students are undertaking the work-based learning module during the other 4 days of the week, it would be best to confine their studies to one full day instead of spreading it over 2. The programme team will monitor this mode of delivery and discuss it with future student/apprenticeship cohorts to ensure the best solution is in place.
7.	The Programme Team should explore opportunities for including more industry talks within the programme, possibly online or as pre-recorded lectures.
	Response: 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 contact this group again to discuss further industry engagement. On February 13th, the department held our annual student awards night in Bolton Street. An invitation was sent through multiple mediums for organisations to attend, with attendees encouraged to get involved in our programmes through vehicles such as guest lecturers. Further, the apprenticeship is underpinned through a consortium comprising large organisations, SMEs, specialists, academics, and SCSI members. In addition, an extensive consultation was undertaken with the industry as part of the initial submission of the apprenticeship proposal. Thirty-two letters of support were received from a diverse selection of the Irish AEC sector who supported a Level 6 apprenticeship. The intention is to engage with these organisations once the apprenticeship is ready for promotion and to offer opportunities for them to do some guest lecturers. The programme team will leverage their extensive network of industry contacts to ensure an adequate number of industries talks within the programme.
8.	The Programme Team should explore the link between this programme and the engineering companies in more depth.
	Response: The Programme Team acknowledges the importance of strengthening the connection between this programme and engineering companies to enhance students' learning experiences and career opportunities.

The School of Surveying and Construction Innovation at TU Dublin has established strong industry connections that provide students with valuable opportunities for work placements, industry-led projects, and exposure to real-world challenges. These partnerships ensure the programme remains relevant to current industry practices and future developments.

The programme benefits significantly from its association with the Chartered Institution of Civil Engineering Surveyors (CICES), a leading international professional body for specialists in geospatial engineering and commercial management. As a member of the consortium, CICES provides valuable input to ensure the programme aligns with construction industry standards.

Additionally, the Society of Chartered Surveyors Ireland (SCSI) is a key partner and consortium member, bringing extensive industry knowledge and professional connections to the programme. This partnership enhances students' access to networking opportunities and professional development resources within the Irish surveying and engineering sectors.
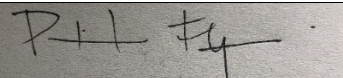
Other matters to be brought to the attention of Faculty Board and/or University Programmes Board

It is noted that this programme like others within TU Dublin will need to align to University Assessment Regulations, when approved for implementation in September 2025.

Section G - Approvals

Validation Report	
This report has been agreed by the Validation Panel and is signed on their behalf by the chairperson.	
Chairperson: Patrick Flynn	
Signed:	Date: 07/03/2025

School Response	
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:	Date:31/03/2025 Click or tap to enter a date.

Faculty Board	
The report and response have been approved by Faculty Board	
Head of Teaching and Learning:	Patrick Flynn
Signed:	Date: 01/05/2025

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