



Programme Review Report

MSc in Computing with Development Operations

<i>Version of Report</i>	<i>Author</i>	<i>Date</i>
1	Nicole O'Neill	14 th May 2024
		Click or tap to enter a date.
		Click or tap to enter a date.

<i>Approval</i>	<i>Date</i>
Documentation for Review approved by Faculty Board	26 th April 2024
Report of Programme Review Panel approved by AQAEC	Click or tap to enter a date.
New Programme Title approved by University Programmes Board (if applicable)	

Section A Programme Details

Title	MSc in Computing with Development Operations
NFQ Level	9
ECTS Credits	90
Mode of delivery	Part-time <input checked="" type="checkbox"/> Full-time <input checked="" type="checkbox"/>
Duration	Part-time: 18 Months Full-time: 1 year
Modality/ies of delivery	In-person, On-campus <input checked="" type="checkbox"/> Blended <input checked="" type="checkbox"/>
	Online <input type="checkbox"/> Hyflex <input type="checkbox"/>
Classification of award	MSc: 1 st Class Honours (GPA 3.25 or greater). 2 nd Class Honours (GPA 3.00 minimum) Pass (GPA 2.00 minimum) PgDip: Distinction (GPA 3.25 or greater). Merit (GPA 3.00 minimum) Pass (GPA 2.00 minimum)
Discipline Programmes Board	Digital Transformation

Faculty Board	Faculty of Computing, Digital and Data
Schools involved in delivery	School of Enterprise Computing and Digital Transformation
Delivery location	Tallaght / Online
Collaborative Partner (where applicable)	NA
Date of Commencement of revised programme	January 2025

Section B Awards

Award Title	MSc in Computing with Development Operations
NFQ Level	9
Award Class	Major
ECTS Credits	90
Classification of award	1 st Class Honours (GPA 3.25 or greater). 2 nd Class Honours (GPA 3.00 minimum) Pass (GPA 2.00 minimum)
Award (1) Title	PgDip in Computing with Development Operations
Exit/Embedded	Exit <input checked="" type="checkbox"/> Embedded <input type="checkbox"/>
NNFQ Level	9
Award Class	Major
ECTS Credits	60
Classification of award	PgDip: Distinction (GPA 3.25 or greater). Merit (GPA 3.00 minimum) Pass (GPA 2.00 minimum)

Section C - Programme Derogations (if required)

<i>Derogations from Assessment Regulations/Marks and Standards, requiring approval by University Programmes Board</i>	
N/A	
University Programmes Board Approval	Date

Section D Review Process

Date of Programme Review	10 th May 2024
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Context for Programme Review

How was the programme review process instigated, by whom/via which process?

The Programme Review process was instigated by the School.

Please tick the type of programme review undertaken:

Full Programme Review <input checked="" type="checkbox"/>	Focused Programme Review <input type="checkbox"/>
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If a focused programme review, what is/are the area(s) of focus?

NA

Transitional arrangements

How will changes to revised programme be implemented, i.e. to be implemented with immediate effect in the next academic year of delivery, or phased in on a year-by-year basis.

The part-time programme will be rolled out for new entrants from January 2025 and the full-time programme will commence in September 2025.

Panel Members

Name	Role	Affiliation
John Pugh	External Panel Member	Chief Technical Officer, Nathean Technologies Ltd,
Thomas Dowling	External Panel Member	Head of Faculty of Engineering and Technology, ATU Donegal
Dr Julie Dunne	Chair	Head of Food Science and Environmental Health
Dr Ahmed Elssidig Nasr	Internal Panel Member	School of Transport and Civil Engineering
Andrea Curley	Internal Panel Member	School of Computer Science
Nicole O'Neill	Recording Secretary	Education Innovation Manager

Schedule of Meetings

9.00 – 9.30	Private Panel Meeting
09:30-10:00	Introductions and Presentation by School
10:00-10.15	Private meeting of panel
10:15 – 10.45	Meet with student representatives
10.45-11:15	Break / Private Meeting
11.15-12.45	Meeting with management and staff responsible for the delivery of the programme
12:45 – 13.15	Private Meeting of the Panel to discuss outcome
13:15-14:00	Break
14:00-14:30	Verbal report to School
14:30	Close

Section E**Programme Evaluation**

Programme Review Process		
<i>Was the programme review conducted in accordance with the Programme Review Process, i.e. were current students, graduates, employers, other appropriate stakeholders involved in the review process?</i>	Yes ✓	No <input type="checkbox"/>
<p>Comment: The School had proactively engaged with a range of stakeholders and it was evident their inputs had been taken into consideration within the programme review documentation.</p> <p>The panel was provided with extensive documentation. For future reviews the school should consider providing an executive summary / recorded presentation which summarises the key points being covered in the Review.</p>		

Governance & Management		
<i>Does the programme align with the University's Strategic Plan and the principles of the University Education Model, and relevant policies?</i>	Yes ✓	
Comment: The Programme Review Documentation clearly outlined how the programme is aligned to the University's Strategic Plan, the University Education Model and Graduate Attributes.		
<i>Do the Programme Management and Quality Assurance arrangements align to TU Dublin Quality Framework processes?</i>	Yes ✓	No <input type="checkbox"/>
Comment: The Programme is being managed under the new TU Dublin quality assurance arrangements as part of the pilot implementation of Discipline Programme Boards in the Faculty of Computing, Digital and Data. Prior to this, the programme was operating under the Tallaght Quality Manual under the direction of a course board. The panel requests that the School provide the panel with previous course board meetings for the past 3-5 years' to refer to providing the minutes / notes of these meetings.		
<i>Has the Annual Monitoring/Academic Quality Enhancement process been used to identify issues and actions that continually enhance the programme and student learning experience?</i>	Yes ✓	No <input type="checkbox"/>
Comment: The new Annual Monitoring process was first completed in November 2023 as part of the pilot implementation of the new Discipline Programmes Board.		

Student Data		
<i>On consideration of student recruitment data, is there evidence that there continues to be a market demand for the programme and that the programme remains viable?</i>	Yes ✓	No <input type="checkbox"/>
Comment: The programme is promoted by both TU Dublin and Skillset. The programme continues to attract a sufficient cohort of applicants to remain viable. However, there is further scope to enhance recruitment to this programme. In particular the school has identified that there is potential for recruitment of a full-time cohort.		
<i>On consideration of student engagement, performance and progression data, are students engaging with their programme and performing as expected? If not, has this been acknowledged and addressed through the programme review process?</i>	Yes ✓	No <input type="checkbox"/>
Comment:		

<i>On consideration of graduate destination data, is there evidence that students are securing employment in the field or progressing to further study in the discipline?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment: This programme is currently running part-time with students who undertake the programme whilst in employment in the field.		

Awards Standards		
<i>Are the programme aims and learning outcomes clearly written using appropriate terminology?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<i>Is ongoing programme development appropriately informed by internal and external stakeholder input (including industry/practice, professional/regulatory bodies, and community organisations)?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<i>Does ongoing programme development take account of relevant external discipline benchmarks and Professional Statutory and Regulatory Body requirements?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		

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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Comment: The panel noted that the programme content is aligned well with industry and employment needs. The panel discussed with the School how AI and Sustainability have been incorporated into the curriculum. To enhance this further, the panel recommends that more explicit reference in the module descriptors is made in relation to how sustainability is included.</p> <p>The panel also recommends that the programme module content should clarify how to include the services of inclusion of AI and Machine Learning in pipelines rather than a deep dive into AI and ML in general.</p> <p>In addition, DevSecOps should be more explicitly included in the relevant module descriptors</p>		

<i>Is there a mechanism to ensure the input of external stakeholders in the ongoing development of the programme?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<i>Is the programme curriculum well-structured with a logical progression of learning and development across the modules and stages?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<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"/>
Comment:		
<i>Are work/practice placements appropriate and fit for purpose, having regard to the requirements of professional, regulatory, and associative bodies where applicable, in the context of student achievement of learning outcomes and in the overall student experience?</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Comment: This criterion is not applicable for this programme as students do not undertake Work / Practice placements.		
<i>If applicable, have the relevant Blended Learning Checklists (i.e. Learning Experience Context & Programme Context) been fully completed and submitted to the Panel?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<i>Is the required programme and module information provided in the correct format?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment: The panel has made two conditions (1) For the programme to be delivered on a full-time basis, further documentation should be submitted which clearly demonstrate the delivery schedule for the programme, the proposed approach to learning and teaching, the induction / onboarding process and confirmation of the resources available to deliver the programme and (2) that the programme exit award is entered into the Awards tab on the Programme and Module Catalogue.		

Learning, Teaching & Assessment		
<i>Is there an effective student-centred learning and teaching strategy that aligns with the University's strategies and guidelines in this regard?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<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 checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment: The panel and School discussed the assessment strategy for the programme and in particular the role of in-person written examinations and group work on the programme, the panel has made a recommendation that further consideration be given to the role of written examinations on the programme. The panel also recommends that further consideration be given to the role of group work on the programme and whether this should be increased. In addition,		

the school should provide further documentation for students on good team work practice and how issues, such as “free-riders” might be addressed.

The panel recommends that further consideration be given to the assessment schedule on the programme and to providing more detailed grading rubrics for each high stakes assessment to students to further guide their understanding of the requirements.

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:

Is there a comprehensive mapping of assessment methods and module learning outcomes and between module learning outcomes and programme learning outcomes?

Yes ☒

No ☐

Comment:

Are there opportunities in all modules to provide students with timely and constructive feedback on their learning and development?

Yes ☒

No ☐

Comment:

Do the teaching and assessment methods consider the diversity of the student cohort?

Yes ☒

No ☐

Comment:

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 programme is currently being delivered part-time. The panel notes the school's intention to deliver the programme on a full-time in person basis from September 2025. The panel has set a condition that the school confirm the availability of sufficient and appropriate resources to deliver the full-time version of the programme.

Are there sufficient staff that are appropriately qualified and capable to support the programme delivery?

Yes ☒

No ☐

Comment:

Are there appropriate arrangements in place to support the student experience and to monitor student performance?

Yes ☒

No ☐

Comment:

<i>Are the access, transfer and progression arrangements including RPL clearly defined and appropriate, and aligned to TU Dublin policy/strategy in this regard?</i>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comment:		
<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 checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>Comment:</p> <p>The panel noted the Student Handbook provided to the students, the panel recommends that in this documentation, the full module descriptors for each of the modules be included. In addition, regular reminders on the assessment schedules and contents of the student handbook should be issued to students.</p> <p>The panel and School discussed the procedures in place to support the research project element of the programme. The panel recommends that the School provide a document for students that outline the process and milestones for each of the elements of the research project and the research methods / proposal module and that the School develop a Project Handbook.</p> <p>The panel has also made a recommendation that for part-time students: Consideration should be given to providing pre-reading for the programme to facilitate onboarding, particularly for the benefit of returners to Higher Education. In addition, the school should consider providing more tutorials for pastoral and academic guidance and signposting students to relevant student services such as the Academic Writing Centre and the Maths Learning Centre</p>		

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:		
<i>In the case of Joint or Multiple Awards, has due diligence on the capacity of the partner institution to meet the QA/QE requirements for the programme been undertaken?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Comment:		

Section F	Overall Recommendation of the Panel
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1.	Recommend continuing approval of programme as submitted, without amendment	<input type="checkbox"/>
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2.	<p>Recommend continuing approval of programme, subject to minor amendments/editorial changes to be completed as soon as possible and with recommendations for consideration.</p> <p>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.</p>	<input type="checkbox"/>
3.	<p>Recommend continuing approval of programme subject to the fulfilment of conditions. Recommendations for consideration may also be attached.</p> <p>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.</p> <p>A new programme cannot go forward to Faculty Board for consideration unless a response to the Review Report is submitted with revised programme documentation.</p>	<input checked="" type="checkbox"/>
4.	Do not recommend continuing approval of programme.	<input type="checkbox"/>

Areas for commendation	
1	Good practice in teaching and learning
2	Content aligned well with industry needs
3	Good student support
4	Good practices in relation to support of the Research Project
5	Extensive Stakeholder feedback was sought as part of the Review Process

Conditions of Approval	
1.	<p>For the programme to be delivered on a full-time basis, further documentation should be submitted which clearly demonstrates the delivery schedule for the programme, the proposed approach to learning and teaching, the induction / onboarding process and confirmation of the resources available to deliver the programme.</p> <p>Response:</p> <p>An updated student handbook for the MSc in Computing with DevOps has been provided. The student handbook covers both the part-time and full-time programme equally. The programme schedule provided in section 4.1 identifies the semester in which modules are offered on each of the full-time and part-time versions of the programme. Sections 4.3 and 4.4 provide details of the scheduling of classes for full-time and part-time students respectively. Section 5.6 provides indicative assessment calendars for part-time and full-time students. Sections 6.5 and 6.6 describe the orientation and induction processes and detail the pre-reading material that is provided to students in advance of commencing the programme.</p> <p>The School can confirm that sufficient resources are available to run this programme. The part-time programme is currently running and the full-time programme is listed in the University's enrolment plan as a key part of the Faculty of Computing, Digital and Data's strategy to increase enrolments, including enrolments of international students.</p>
2.	<p>Provide details on the Programme and Module Catalogue in relation to the exit awards that have been approved for the programme. It is good practice to also include the programme learning outcomes for the exit awards stated.</p> <p>Response:</p>

	The details including learning outcomes for the Postgraduate Diploma exit award has been added to the entry in the Programme and Module Catalogue and to section 3.7 of the Student Handbook.
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Recommendations	
1.	<p>Provide a document for students that outlines the process and milestones for the research project and research methods / proposal module and develop a Project Handbook.</p> <p>Consideration could be given to asking for a publication format as part of the deliverables for the project.</p> <p>Response:</p> <p>Additional information about the expectations for the Research Project has been provided in section 5.7 of the Student Handbook. Students are provided with detailed guidance throughout the programme as they prepare for, implement and submit their Research Project.</p>
2.	<p>For part-time students, consideration should be given to providing more guidance on academic writing within the onboarding processes / pre-reading for the programme.</p> <p>Response:</p> <p>Information on Academic Writing is included in section 6.4 of the student handbook. The programme team will ensure that all the required guidance on academic writing is provided to the students as they prepare for and write up their Research Project, and as they complete the taught modules on the programme.</p>
3.	<p>The panel has also made a recommendation that for part-time students: Consideration should be given to providing pre-reading for the programme to facilitate onboarding, particularly for the benefit of returners to Higher Education.</p> <p>Response:</p> <p>The School recognises the importance of supporting students on their transition to postgraduate study and welcomes this recommendation. The School will add keep the materials ensure that students are provided with all required pre-reading to help them prepare for their studies. Information on pre-reading materials has been added to section 6.6 of the Student Handbook.</p>
4.	<p>Further consider the role of group work on the programme and whether this should be increased. Provide further documentation for students on good teamwork practice and how issues, such as “free-riders” might be addressed.</p> <p>Response:</p> <p>The School welcomes the recommendation to keep the volume of group work under review. Drawing upon guidance provided in a detailed study on group work conducted in</p>

	the Faculty of Business (provided as an attachment), the school will ensure that best practice on group work is implemented in the programme. While recognising that there are greater challenges in facilitating group work for part-time students, the school also recognises that the experience that part-time students possess from their employment will add a richness to the groups in which they participate. The role of group work in the programme will be kept under review by the programme team.
5.	Include more explicit reference in the module descriptors in relation to how sustainability and DevSecOps are included.
	<p>Response:</p> <p>The programme team have reviewed all modules and updates have been made to the module descriptors to ensure greater visibility for sustainability and DevSecOps.</p>
6.	The programme module content should clarify how to include the services of inclusion of AI and Machine Learning in pipelines rather than a deep dive into AI and ML in general.
	<p>Response:</p> <p>The programme team have reviewed all modules and updated have been made to the module descriptors to ensure greater visibility for AI and Machine Learning in pipelines.</p>
7.	In the documentation provided to students, the full module descriptors for each of the modules should be included. In addition, regular reminders on the assessment schedules and contents of the student handbook should be issued to students.
	<p>Response:</p> <p>The full module descriptors, as downloaded from Akari, will be provided to students. The versions previously included in the student handbook have been removed.</p>
8.	Further consideration should be given to the assessment schedule of the programme.
	<p>Response:</p> <p>Indicative Assessment Schedules for the programme have been added to section 5.6 of the Student Handbook. The Assessment Schedules will be kept under constant review. The Faculty of Computing, Digital and Data has recently developed guidelines on Assessment Scheduling (attached) that will be used to guide the scheduling of assessment on this and other programmes in the Faculty.</p>
9.	Consider providing more tutorials for pastoral and academic guidance and signposting students to relevant student services such as the Academic Writing Centre and the Maths Learning Centre
	<p>Response:</p> <p>Information about student supports is included in section 2 of the Student Handbook and have been highlighted in section 6.7 of the Student Handbook. The Faculty of Computing, Digital and Data has recently filled the role of Transitions Coordinator. Through this role, additional guidance will be offered to students in the Faculty on the resources available to them. The Transitions Coordinator presented to all new postgraduate students at the</p>

	orientation that took place in September, and it is intended that this will continue for future intakes of students.
10.	Consider providing more detailed grading rubrics for each high stakes assessment
	<p>Response:</p> <p>The programme team provide rubrics with their assessments. The level of detail provided in these rubrics will be reviewed to ensure consistency across modules and to ensure that students have all the required information to support their engagement with their assessment. A detailed indicator of the standards required for the assessment of the Research Project has been included in section 5.7 of the Student Handbook.</p>
11.	For reviews, in the future consider providing an executive summary / recorded presentation which summarises the key points being covered in the Review.
	<p>Response:</p> <p>The School welcomes this recommendation and suggests that the provision of an executive summary identifying key points becomes a requirement for all reviews in the University.</p>
12.	Provide the panel with previous course board meetings for the past 3-5 years' to refer to providing the minutes / notes of these meetings.
	<p>Response:</p> <p>The Faculty of Computing, Digital and Data is currently engaging in a pilot of the Discipline Programme Boards that are a key feature of the Quality Framework. The implementation of this pilot has led to greater focus on the exchange of formal documentation as part of the quality assurances procedures. The School will ensure that all documentation is recorded and shared as appropriate going forward. The documentation for the last academic year is provided.</p>

Other matters to be brought to the attention of Faculty Board and/or Academic Quality Assurance & Enhancement Committee

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Section G	Approvals
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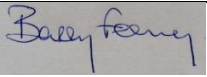
Review Report


This Review Report has been agreed by the Review Panel and is signed on its behalf by the Panel Chair.
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Chairperson of Review Panel:

Signed:

Date: Click or tap to enter a date.

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: 08/10/2024

Faculty Board	
The report and response have been approved by Faculty Board	
Head of Learning Development:	
Signed: 	Date: 08/10/2024

Academic Quality Assurance & Enhancement Committee	
The report and response have been approved by the Academic Quality Assurance & Enhancement Committee	
Head of Academic Affairs:	
Signed:	Date: Click or tap to enter a date.