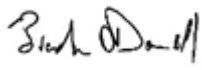# VALIDATION REPORT

1.	Title of Programme(s): (incl. Award Type and Specify Embedded Exit Awards)	Bachelor of Engineering (Honours) in Automation, Robotics and Digital Manufacturing
2.	NFQ Level(s)/ No. ECTS:	60 ECTS
3.	Duration:	1 year
4.	ISCED Code:	0714 - Electronics and automation
5.	School / Centre:	School of Engineering
6.	Department:	Electronic & Electrical Eng
7.	Type of Review:	Validation
8.	Date of Review:	May 10th, 2022
9.	Delivery Mode:	Blended
10.	Panel Members:	Dr Brendan O'Donnell, Niall Morris, Camila D Bastiani, Neasa Flannery, Dr Des Foley
11.	Proposing Staff:	Carine Gachon Jack Saad Stephen Foy Gabriel Farragher Trevor Clohessy Keith Connaughton (Medtronic) Shane Coss (Thermoking) Dermot O'Neill (Cobotic Skillnet)
12.	Programme Rationale:	This is an innovative programme that has been designed in close consultation with manufacturing industry in the western region who have identified a requirement to up-skill their employees. The aim of the programme is to graduate engineers that can design, build, and manage modern manufacturing cells. The graduate profile will be in automation, robotics, and digital manufacturing with skills in system integration and data driven decision making.
13.	Proposed Student Intake:	20
14.	Stakeholder Engagement:	For the past two years, the design team has been engaging with Industry on the development of a suite of programmes in automation and digital manufacturing. The initial programme structure and content was developed in collaboration with a manufacturing engineer from Thermoking. The draft was presented to the Manufacturing Excellence subgroup of the Regional Skill Forum and submitted to the steering group of the Cobotics skillnet for feedback. The feedback being positive, the design team has had focus groups with engineers from Boston Scientific, Medtronic, and SL Control where module contents

		were discussed and amended. The final draft was circulated to all involved with a survey. Focus groups with local employers as well as government reports have shown that a large number of employees will have to be up-skilled to facilitate the transition to Industry 4.0, and a large number of graduates with this skill-set are required.
15.	Graduate Demand/Employment:	Learners entering this programme will hold a level 7 in Automation and Robotics (or equivalent). They will normally be employed in the manufacturing sector and supported by their employer when registering for this programme. The course will position graduates to move into automation engineering positions or advanced manufacturing ones (such as digitalisation of manufacturing, data analytics, operation management to name but a few) in the Medical Device and engineering manufacturing sectors. There is a very high need and a low number of skilled people in the area.
16.	Entry Requirements, Access, Transfer & Progression:	Applicants should either be employed or have an agreement with a company that will allow them to conduct their project in their manufacturing facilities English Language Requirements will be as determined by ATU Policy RPL
17.	Programme Structure:	The structure of this programme is based on the lessons learnt, in particular: • offering a flexible mode of delivery by combining online and blended modules, • offering some practical on-site, so students can get hands-on experience on some of our software and equipment, • spreading the workload over 52 weeks for the completion of their Industry project. The programme is a one-year add-on structured in two semesters of taught modules and a 52 week-long, 20 credit project. In semester 1, Page 13 of 53 GA_EAUTO_K08 2022 - Draft Academic Module Manager 3.0 students will get one hour per week of preparation to the project, concentrating on project management. In semester 2, they will be assigned a supervisor that will offer individual guidance.
18.	Learning, Teaching & Assessment Strategies:	This programme aims to take advantage of students prior or/and current experience in industry to allow flexibility in their learning while minimising the requirement for face-to-face interaction with their lecturers. A blended mode of learning has been chosen. This programme is delivered over 52 weeks, 26 of which include a mix of synchronous and asynchronous learning in addition to weekly on-site workshops. Teaching and learning strategies in the classroom: Direct-instruction strategy, Activity-based strategy, Cooperative strategy. The Teaching and Learning strategy of the proposed programmes revolves around Kolb's Experiential Learning Theory[1] in general, and the Theories of Situated Learning[2] and Cognitive

		Apprenticeship[3] in particular, recognising that students' experience of the manufacturing industry contributes and facilitates their learning.
19.	Resource Implications:	Two additional staff will have to be recruited to support the delivery of the planned suite of programmes
20.	Synergies with Existing Programmes:	There is no other one-year add-on level 8 part-time programme offered in the discipline. IT Sligo have a 2 year online Mechatronics programme which focusses on more traditional control systems as opposed to Industry 4.0 skills. The unique selling points of this programme are the possibility to complete 60 credits in one year while working, the focus on Industry 4.0 technologies including data, and the advanced module in PLC programming on a specific type of equipment that gives graduates a unique skill, sought-after by American multinationals.
21.	Findings and Recommendations:	Commendations:
		Conditions:
		Recommendations: • Reconsider the title • Review assessment strategy with respect to final exam and appropriate of assessments • Topics are excellent but programme board will need to review level of content and expectation being placed on student • SDG Goals need to brought out more explicitly in the document

22.	FAO: Academic Council:	Approved:	
		Approved subject to recommended changes:	x
		Not approved at this time:	
	Signed:		
		Chair	Secretary