

1.	Title of Programme(s): (incl. Award Type and Specify Embedded Exit Awards)	Certificate in Computer Aided Design – Parametric Modelling (Minor Award, 15 ECTS)
2.	NFQ Level(s)/ No. ECTS:	6 15 ECTS
3.	Duration:	Two semesters
4.	ISCED Code:	0710
5.	School / Centre:	School of Engineering
6.	Department:	Mechanical and Industrial Engineering
7.	Type of Review:	New Programme
8.	Date of Review:	29 th March 2022
9.	Delivery Mode:	Blended
10.	Panel Members:	Dr. David Tanner, Senior Lecturer, Manufacturing Process Technology, University of Limerick Dr. Andrew Niven, Senior Lecturer School of Engineering, University of Limerick Dr. Niall Burke, Lecturer, Mechanical Engineering, TUS Dr. William Finnegan, Research Fellow, College of Engineering & Informatics, NUI Galway Dr. Anthony Callanan, Snr Lecturer Mechanical Engineering, University of Edinburgh Mr. Dylan Farrell, Design Engineer, Trane Technologies Mr. Terence Killeen, Mc Hale, Co. Mayo Ms. Carmel Brennan, Assistant Registrar (Quality)
11.	Proposing Staff:	Dr. Oliver Mulryan Mr. Eddie Dunbar Dr. Brian De Souza
12.	Programme Rationale:	This programme will allow graduates gain employment as CAD technicians and allow other professionals to up-skill in Parametric modelling. In Ireland, there are over 200+ overseas companies, who employ 23,000 engineers directly - IDA statistic, retrieved December 2021. This number is to

		<p>set to grow further as we aim to become a hub for cutting edge research and development in new areas such as IOT, Industry 4.0 and Autonomous Vehicles. To facilitate this vision, we need a greater participation in engineering or cognate disciplines. This programme will provide a pathway for the graduates to gain employments as CAD technicians, while others may be inspired into apprenticeships or even directly into technical degrees. Additionally, there has been a lot of progress in manufacturing technologies recently, specifically in additive manufacturing, these technologies are becoming ubiquitous, and can be used for full manufacturing via exotic material 3D printers. A good example of this is in the medical field, where 3D printers can create customised implants. The learners on the programme will be exposed to this, which may allow the engineers in these companies to build Better Quality and/or Customised Products.</p>
13.	Proposed Student Intake:	22
14.	Stakeholder Engagement:	<p>The demand and development of the programmes was informed through a consultation process with various stakeholders. A focus group was held with a number of industrial employers to determine the deficiencies in CAD abilities of graduates. The outcomes of this group were used to inform the design of the programme. To gauge potential demand amongst industry a sample of industrial companies within the region were surveyed. Analysis of this survey reveals that out of the 40 companies surveyed, 12 responded to date and 10 would be interested in enrolling their employees in the programme.</p> <p>To further establish the demand and gauge our position in the competitive landscape, other Institutes of Technology (IoTs) were scanned to see if they were successfully offering equivalent programmes. All the IoTs in GMITs periphery outside those in the ATU are offering minor award programmes. From this it appears that there would be a good demand for the programme, and the outcomes were used to inform the design of the programme.</p>
15.	Graduate Demand/Employment:	<p>There are numerous positions in a variety of sectors which use CAD software, such as the CAD technician/drafters, Architectural technologist, Project Engineers, Interior designers, Graphic Designer, 3D artists etc. The programme is designed to provide learners with specialised training in a 3D parametric modelling software, which may inspire them</p>

		<p>to participate in apprenticeships in industry (e.g., manufacturing apprentice) or to progress onto a technical, engineering or architectural degree.</p>
<p>16.</p>	<p>Entry Requirements, Access, Transfer & Progression:</p>	<p>The minimum entry requirements are those stated by the Institution in its Access, Transfer and Progression Policy at any given time. At present they are a Grade O6/H7 or better in five Leaving Certificate subjects including English or Irish and Mathematics with a minimum of 160 points.</p> <p>OR</p> <p>Equivalent qualifications and scores from other countries which will be assessed and scored by the Institute.</p> <p>OR</p> <p>A Pass in any QQI FET Major Award at level 5 or 6.</p> <p>OR</p> <p>A Pass in a QQI FET Foundation Certificate, the NUIG/GMIT Foundation Certificate or any Foundation Certificate delivered by the regional cluster (GMIT, NUIG, IT Sligo or IT Letterkenny).</p> <p>Mature Applicants</p> <p>Applications from mature applicants (aged 23 on or before 1st January of the course commencement year) are welcomed by GMIT. A quota of places is reserved for mature applicants. These applicants do not have to meet the Leaving Certificate entry requirements and are considered on an individual basis (previous education, work experience, and demonstration of ability and competence to undertake the programme). They may be invited for interview. This will be used to rank applicants where demand exceeds the available places on a programme.</p> <p>English Language Requirements</p> <p>English Language Requirements will be as determined by GMIT and as published in the Access, Transfer and Progression code. The current requirements are as follows: Non-EU applicants who are not English speakers must have a minimum score of 5.5 (with a minimum of 5.0 in each component) in the International English Language Testing System (IELTS) or equivalent. All results must have been achieved within 2 years of application to GMIT. EU applicants who are not English speakers are recommended to have a minimum score of 5.5 (with a minimum of 5.0 in each component) in the International English Language Testing System (IELTS) or equivalent.</p> <p>Recognition of Prior Learning</p>

		GMIT is committed to the principles of transparency, equity and fairness in recognition of prior learning (RPL) and to the principle of valuing all learning regardless of the mode or place of its acquisition. In accordance with GMIT's policy, RPL can be used to gain admission to this programme.
17.	Programme Structure:	This programme consists of two modules which will be delivered sequentially.
18.	Learning, Teaching & Assessment Strategies:	<p>The programme was designed specifically for learners with a keen interest in DCG or professionals who wish to up-skill in Parametric Modelling. The programme will be delivered in blended mode, a significant portion of which will be onsite in CAD and Additive Manufacturing laboratories to ensure the student develops the hands-on experience necessary to be a successful practitioner. To maximise the student learning experience the programme was built around the learning centred pedagogy in which the student, lecturer and subject-matter exist within a balanced yet dynamic relationship.</p> <p>To better engage the students, the programme board incorporated several Active Learning (AL) pedagogical practices into the programme. AL is a mode of instruction, which focuses the responsibility of learning on the learner where they actively participate in their own acquisition of knowledge and skills. The key feature of AL includes less "chalk and talk", and more student involvement. Student involvement is accomplished by involving the student in "doing things" and participating in the manner that is best suited to their individual learning styles. Students will be attracted to the practical nature of the programme, technology and teamwork.</p> <p>The programme is assessed through continuous assessment and projects.</p>
19.	Resource Implications:	<p>This programme will be delivered on a self-financing basis.</p> <p>Lecturing hours: For the student cohort, an average of 4.5 hrs will be required per week.</p> <p>Technical support: 1 hr per week will be required to prepare the computer laboratory.</p> <p>Student supports: Approximately, 1000 Euro will be required to print the booklet of notes for the student cohort, and to replace the consumables, such as plotter</p>

		ink/paper and 3D printer resins, used in the CAD and 3D printing laboratories.	
20.	Synergies with Existing Programmes:	This is a minor award from the BEng in Mechanical Engineering.	
21.	Findings and Recommendations:	Commendations:	
		<ol style="list-style-type: none"> The panel welcomed the development of an industry facing programme and the flexibility it affords those in the workplace. 	
		Conditions:	
		<ol style="list-style-type: none"> Align entry requirements in the programme documentation with GMIT's Admission, Transfer and Progression Policy. 	
		Recommendations:	
		<ol style="list-style-type: none"> Remove reference to specific software within the CAD2 module. Consider whether the assessment as stipulated is appropriate for the target cohort. Review the learning outcomes for CAD 2 ensuring that all commence with an appropriate active verb appropriate to the level of module. 	
22.	FAO: Academic Council:	Approved:	
		Approved subject to recommended changes:	x
		Not approved at this time:	
	Signed:		
		Chair	Secretary