Module Specification

Module Summary Information

1	**Module Title**	Advanced Manufacturing
2	**Module Credits**	20
3	**Module Level**	6
4	**Module Code**	ENG6073

5	**Module Overview**

If you are intending to work in a manufacturing environment you will need to develop an understanding of the techniques used in Computer Aided Manufacture of components and products. You will also require a working knowledge of the application of CAM and simulation technologies to form complete integrated systems for product manufacture. Topics include CAD, CAM and CNC data forms, simulation of machining operations, manufacturing cells, calibration, measurement and testing, 3-D System simulation; assembly systems; post processor configuration and application; advanced process simulation and product development.

6	**Indicative Content**

DFA – Choices of Assembly System based upon Product Characteristics.

Design for Environment

Design for Manufacture (Concurrent Costing)

High Speed Machining ; Multi Axis Machining

Machine tool calibration and testing

In-process and post-process gauging and measurement

Probes: Type and application. Reverse Engineering and Digitizing.

Scanning Techniques

Rapid Prototyping and Tooling

Facilities Requirements

7	Module Learning Outcomes On successful completion of the module, students will be able to:	
	1	Evaluate and employ appropriate 3D simulation techniques to analyse the production process.
	2	Critically appraise Computer Controlled Machines tools.
	3	Assess in - and post-process inspection and machine tool verification techniques.
	4	Appraise and specify appropriate advanced product development techniques.

8	Module Assessment			
Learning Outcome				
	Coursework	Exam	In-Person	
1-4	70%		30%	

9	Breakdown Learning and Teaching Activities
Learning Activities	Hours
Scheduled Learning (SL) includes lectures, practical classes and workshops, peer group learning, Graduate+, as specified in timetable	48
Directed Learning (DL) includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE	0
Private Study (PS) includes preparation for exams	152
Total Study Hours:	200