PROGRAMME SPECIFICATION DOCUMENT

1. Qualification	2. Programme Title	3. UCAS Code	4. Programme Type
B.Eng(Hons)	**Computer Aided Engineering**	**H132 (3 year)** **H131 (3.5 year)** **H133 (4 year)**	**Single Honours** **FT/PT**

5. Main Purposes and Distinctive Features of the Programme

1. Application of fundamental engineering knowledge topics and field
2. Application and use of computer techniques in the solution of engineering problems
3. Comparison and individual limitations between traditional and modern computer aided techniques used in engineering.
4. Understanding of computing systems and their role within engineering.
5. Develop oral and written communication skills
6. To provide an advanced computer aided engineering education within a framework of opportunities of intellectual expansion to a wide range of individuals, consistent with their ability and experience.

Special Features:
Emphasis in the specialist use of design and prediction techniques to engineer products and systems via modern computer aided facilities.

6. What a graduate should know and be able to do on completion of the programme

Knowledge and understanding in the context of the subject(s)

K1. Knowledge and understanding of the core technologies employed in computer aided engineering
K2. Understanding of essential facts, concepts, principles and theories relevant to engineering as a discipline and how the use of computers help optimise the process of decision making.
K3. Understanding the relationship of the different topic areas, their boundaries and purpose within Engineering.
K4. Ability of analysis of products and systems in order to make informed and critical decision in terms of design and engineering

Cognitive skills in the context of the subject(s)

C1. The capacity for specifying computer software/hardware in solving engineering and design problem
C2. Critically evaluate the outcome of computer programs and solution
C3. Synthesis of data/information and interpret findings;
C4. Application of concepts
C5. Evaluate different solutions to engineering problems.
C6. Knowledge of up to date industrial computing systems used for design and analysis

Subject-specific practical/professional skills

S1. To select appropriate computer aided techniques in the solution of engineering problems and comparison with using traditional methods.
S2. Visualise engineering problems/products through the use of computers
S3. Use of CAD techniques appropriate to engineering
S4. Use of software programs related to the field of design, fluid flow, stress analysis etc.
S5. Undertake the administration, maintenance and management of computer networks within the domain of engineering
S6. Asses the feasibility of products within the marketplace and its implication to strategic planning
S7. To have gained knowledge in the workings and practice of industrial organisations

Other skills (e.g. key/transferable) developed in subject or other contexts

O1. Capacity to learn and investigate
O2. Communicate effectively orally, graphically and in writing
O3. Capacity to peruse independent and in-depth learning and investigations
O4. Use a range of IT facilities
O5. Able to work as part of a team
O6. To understand the role of a Computer Aided Designer/Engineer and necessity of personal and life long development of such professionals

7. Qualities, Skills & Capabilities Profile			
A Cognitive	B Practical	C Personal & Social	D Other
Power of Analysis	Technical Report writing	Self Expression	
Design & Synthesis	Presentation Techniques and Production of Design by Graphical Methods	Self Motivation	
Evaluation of Systems	Information & Data Processing	Organisation & Time Management	
Applied Problem Solving	Design and Analysis using Computers	Teamworking	
Analysis of Information	Interfacing of computer hardware/software within a design environment	Social Interaction & Communication	
Flexibility of Thought			

8. Duration and Structure of Programme/Modes of Study/Credit Volume of Study Units

(3 Years full-time; 4½-5 years part-time). Honours Degree = 360 credits; Intermediate Awards of Diploma of Higher Education and Certificate of Higher Education available at 240 and 120 credits respectively. All Honours degrees must include the study of 120 credits at Level H3.

Part II *Students take 6 (Joint), 10 (Single) Modules*			
	<u>Core Modules</u>	<u>Options</u> (normally 20 credits each)	<u>Project</u>
H3 Honours Modules	CAM CAA 2 Personal Development (0)	Computer Aided Presentation Techniques Advanced Vis Tech Product Innovation	Project (40 Credits)
H2 Honours Modules	Product Design & Dev A CAD 3D Modelling Designing with Materials CAA 1		Design – Group Project
Part I (Level 1) *Students take 2 (Minor), 3 (Joint), 4 (Major), 5 (Single) Modules*			
First Year Part-Time Equivalent	Core Skills Intro to Product Development Design Issues Intro to Vis Tech Materials & Processes Analytical Studies/Tool box		

9. Learning, Teaching and Assessment Strategy

Learning and Teaching Methods

Taught lectures with appropriate surgeries form the central method of delivery.
Practical skills are acquired by specific computer related activity, workshop sessions, demonstrations and activity-based assignments. Active learning is promoted via lectures, directed study, laboratory sessions and a strong project theme. Integration of core areas will be emphasised throughout.

Assessment Methods

Assessment tasks are linked to the objectives of each module and are normally completed by the end of each module.
Types of assessment include: written examinations, assignments, projects, case study, interviews and presentations.

Assessment Classification System

Pass mark for individual modules =40%. Final degree classification based on an aggregated performance in level 2 and 3 modules. Aggregate is weighted 75% level 3, 25% level 2

Honours Classification Bands

70% and above - First class
60% - 69% Upper Second Class
50% - 59% Lower Second Class
40% - 49% Third Class
35% - 39% Pass Degree

10. Other Information *(including compliance with relevant Institute policies)*

Date programme first offered

September 2000

Admissions Criteria

Standard Requirements

- Five GCSE/GCE passes, Grade C or above with two A2 level passes (140 UCAS points).
- Acceptable alternatives are :- Advanced GNVQ Merit profile
- BTEC/Edexcel National certificate or Diploma
- Foundation Course in Art and Design
- Completion of suitable Kite Marked Access Course
- Scottish Highers, Irish Leaving Certificate, International/European Baccalaureate

Non Standard Entry

Experience and Interview. Other cases dealt with by admissions tutor on an individual basis

Indicators of Quality and Standards

- Validation by panel with external subject specialist
- External Examiner moderates level 2 and 3 assignments and examinations and a selection of Project reports/presentations.

Implementation of PDP Policy

Personal Development Planning is dealt with in the Personal Development Module. Students commence work on this module when they enter the programme of study and continue to work on it through all levels until their course is complete. In addition, PDP is also explicitly addressed in the Core Skills module at Level 1.