

Appendix 1: PROGRAMME SPECIFICATION

1. Qualification BSc (Hons)	2. Programme Title Mechatronics	3. UCAS Code HH36/BSc Mec	4. Programme Type Single Honours FT/PT
5. Main Purposes and Distinctive Features of the Programme			
<p>1. Application of fundamental mechatronics knowledge</p> <p>2. Application and use of computer techniques in the solution of engineering problems</p> <p>3. Comparison, and understanding of limitations, of traditional and modern computer-aided techniques used in engineering.</p> <p>4. Develop a range of transferable skills.</p> <p><u>Special Features:</u> The programme emphasises the integration of mechanical, electronic, control systems, computers and information systems to aid the design of products, processes and systems. It combines the design of physical systems with the application of computer software.</p>			
6. What a graduate should know and be able to do on completion of the programme			
<p><u>Knowledge and understanding in the context of the subject(s)</u></p> <p>K1. Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relevant to mechatronics subjects.</p> <p>K2. Demonstrate knowledge and understanding of the constraints within which engineering judgement may have to be exercised.</p> <p>K3. Demonstrate knowledge and understanding of business and management techniques in the context of engineering.</p> <p><u>Cognitive skills in the context of the subject(s)</u></p> <p>C1. Demonstrate creativity and innovation in problem solving and in designing systems, components and processes</p> <p>C2. Select and apply appropriate mechatronics tools and concepts</p> <p>C3. Demonstrate the ability to analyse products and systems in order to make informed and critical decision in terms of design and engineering.</p> <p>C4. Evaluate different solutions to engineering problems</p> <p>C5. Design a system, component or process to meet a given need.</p>		<p><u>Subject-specific practical/professional skills</u></p> <p>S1. To select appropriate mechatronics tools and techniques in the solution of engineering problems.</p> <p>S2. Visualise engineering problems/products through the use of computers.</p> <p>S3. Use CAD techniques appropriate to engineering.</p> <p>S4. Use of software programs related to the field of engineering design, fluid flow, stress analysis etc.</p> <p>S5. Develop, promote and apply safe systems of work.</p> <p><u>Other skills (e.g. key/transferable) developed in subject or other contexts</u></p> <p>O1. Communicate effectively orally, graphically and in writing</p> <p>O2. Use a range of IT facilities</p> <p>O3. Demonstrate the ability to manage resources and time</p> <p>O4. Work as part of a team</p> <p>O5. Demonstrate a capacity to learn and investigate</p>	
7. Qualities, Skills & Capabilities Profile			
A Cognitive	B Practical	C Personal & Social	D Other
Creativity & Innovation	Selection of appropriate tools & techniques	Oral and written communication skills	IT skills
Applied Problem Solving	Use of computer-aided design and engineering software	Organisation & Time Management skills	
Analysis of Information	Awareness of health and safety issues	Teamworking skills	
Evaluation of Systems		Personal Development Planning	
Design & Synthesis			

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

Top-up year: 1 Year full-time; 2 years part-time. Honours Degree = 120 HE6 credits, assuming entry with an HND, DipHE or Foundation Degree in a related subject.

Students take 6 Modules

	<u>Core Modules</u> (20 credits each)	<u>Options</u> (normally 20 credits each)	<u>Project</u> (20 credits)
HE6 Honours Modules	Computer Aided Analysis 2 CAM Mechatronic Systems 2	Computer Aided Presentation Techniques Product Innovation Motorsport Studies 3 Transport Studies Intelligent Systems & Robotics Microsensors	Project (20 Credits)

9. Learning, Teaching and Assessment Strategy

Learning and Teaching Methods

Taught lectures with appropriate surgeries/tutorials form the central method of delivery.

Practical skills are acquired by laboratory sessions, computer related activities, 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 all top-up year modules.

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 2006

Admissions Criteria

Standard Requirements

- Higher National Diploma in a Mechatronics-related area
- Foundation Degree in a Mechatronics-related area
- Dip HE in a Mechatronics-related area
- Or equivalent qualifications

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 assignments and examinations and a selection of Project reports/presentations.

Implementation of PDP Policy

Personal Development Planning is dealt with in the Project module.