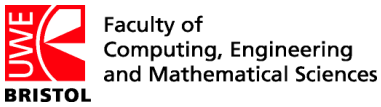


Faculty of Computing, Engineering & Mathematical Sciences

Joint Honours Multimedia Computing

Definitive Document – February 2004

Joint Honours Programme in Multimedia Computing

Contents

Part 1: Programme Specification

Programme Specification

Section 1: Basic Data

Awarding institution/body	UWE
Teaching institution	UWE
Faculty responsible for programme	Computing, Engineering and Mathematical Sciences
Programme accredited by	N/A
Highest award title	BSc (Hons) Multimedia Computing & …
Default award title	
Interim award title	BSc Multimedia Computing & … Dip HE Multimedia Computing & … Cert HE Multimedia Computing & …
Modular Scheme title (if different)	Faculty of Computing, Engineering & Mathematical Sciences Modular Scheme
UCAS code (or other coding system if relevant)	
Relevant QAA subject benchmarking group(s)	Computing
On-going/valid until* (*delete as appropriate/insert end date)	
Valid from (insert date if appropriate)	1 September 2004

Authorised by… **Date:…**

Version Code 2

For coding purposes, a numerical sequence (1, 2, 3 etc.) should be used for successive programme specifications where 2 replaces 1, and where there are no concurrent specifications. A sequential decimal numbering (1.1; 1.2, 2.1; 2.2 etc) should be used where there are different and concurrent programme specifications

Section 2: Educational Aims of the Programme

The Joint Programme in Multimedia Computing has the following general aims:

1. To enable students to embark upon professional careers by developing problem-solving and other transferable skills.

2. To develop study skills that will enable students to become independent, lifelong learners.

3. To prepare students for progressing to study for higher degrees in digital media.

4. To encourage the discerning use of reference material from a variety of sources.

The joint programme in Multimedia Computing has the following specific aims:

1. To provide insight into the creation of Multimedia content for use in a variety of circumstances ranging from web pages to feature length animations. This involves understanding the nature of the technology, the context within which it will be employed and how it might best be utilised.

2. To develop practical skills in the creation of Multimedia content for use in a variety of circumstances ranging from web pages to short length animations.

3. To prepare students for careers in organisations that make significant use of a variety of forms of digital media to present information.

4. To develop the students' ability to make an immediate contribution to companies engaged in the development of applications incorporating significant multimedia content.

5. To develop the students' understanding of the importance of project planning in any domain, though with particular reference to the development of digital media artifacts.

Section 3: Learning Outcomes of the Programme

The award route provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas: …

A. Knowledge and Understanding

Knowledge and Understanding of:	Teaching/Learning Methods and Strategies	Assessment
1. The use and impact of IT in the composition, recording and editing of music and audio. 2. The image and sound recording technologies underpinning digital media tools and techniques. 3. The variety of application domains in which digital media techniques are deployed. 4. The concept of usability and usability standards underpinning the design and evaluation of user interaction with computer systems. 5. Approaches to the planning, design and implementation of multimedia application content. 6. The concepts of moving image production and the impact of technology on their production distribution and reception.	On all modules, at all levels, the learner is encouraged to undertake independent reading to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge of the subject. The programme of study is designed to introduce the knowledge and understanding necessary to engage, from the beginning, in appreciating the range of opportunities for creating and manipulating images and sound as well as appreciating some of the contexts in which these may be applied. In year 1, the contexts in which these techniques may be used is introduced together with an introduction to the range of available media technologies and a detailed study of music and sound in particular. The detailed understanding of the technology of Moving Images follows in year 2 together with the study of approaches to authoring multimedia content. At the same time careful consideration is given to assessing systems in terms of their usability.	Testing of the knowledge base is through: Assessed coursework (topics: 3, 4); Assessed practical work (topics: 1, 2, 5, 6, 7); Assessed Group coursework (topics: 6); Examination (topics: 1, 2, 3, 4, 5, 6, 7);

7. The principles of animation and the creation of 3D characters including appropriate lighting principles, shading algorithms and rendering techniques.	Year 3 sees coverage of the advanced techniques required for 3D modelling and develops earlier coverage of moving image and media technologies. The individual application project requires students to develop an application drawing on the range of knowledge and understanding acquired in earlier stages of the programme and so provides an opportunity to demonstrate an integrated understanding of the material. Students choose 20 credits of options from a relatively small list of multimedia related modules.	

Knowledge and Understanding of:	Teaching/Learning Methods and Strategies	Assessment
	At level 1, knowledge and understanding of topics 2-3 (fundamental image and sound recording technologies and application contexts) are introduced on two modules that explore the general concepts and issues. More in-depth knowledge and specific understanding follows in subsequent levels. Topics 1, 4 to 7 receive only a cursory attention at level 1 although the more insightful learner will find consistent references to relevant knowledge. At level 2 the deepening of the knowledge and understanding of multimedia continues with an expansion into more sophisticated and technically detailed areas. These include the use of computing in music and audio, modern technologies for processing moving images, assessment of systems from a user perspective and approaches to the authoring of systems which make use of these technologies. The development of specialized and more specific knowledge and understanding continues at level 3. Use of some standard sized modules provides fuller coverage of the major topic 3D Animation and also provides sufficient scope for a major piece of individual development work. Use of some half-modules in the option list allows in-depth study of sharply focused advanced topics such as multimedia management and Text & markup languages whilst use of some 20 credit options allows full coverage of broader topics such as game programming.	

B. Subject Specific Skills

Subject Specific Skills	Teaching/Learning Methods and Strategies	Assessment
Students will be able to: 1. Generate and edit MIDI, sample and edit audio and integrate MIDI and audio. 2. Use a variety of multimedia technologies to create and edit images and sound recordings. 3. Define multimedia artifacts appropriate for use in particular Information Systems. 4. Apply user-centered design and undertake usability analysis. 5. Plan, design and implement, using an authoring environment, multimedia application content resolving issues such as database connectivity, and import of media resources. 6. Construct and document moving image sequences using digital video production equipment and editing software.	Throughout the programme, the skills listed are developed through a combination of theoretical discussion, practical laboratory-based work, classroom based tutorial exercises and directed self-study. A number of the skills listed (2, 3) are introduced at level 1 and then developed at level 2. The general teaching / learning method is therefore to impart these practical skills by a process of moving from an overview of what is required to a specific application of an individual skill at a higher level. Very specific skills (7, 8, and those offered in option modules) are introduced at level 3. These are underpinned by the more generalised capabilities (2, 3) that are practiced throughout the levels in most of the modules that contribute to the award.	The possession of these skills is demonstrated both by the development of a practical piece of coursework (software) and by examination. The practical nature of the skills to be acquired means that many are specifically addressed by particular modules (1, 4, 6, 7). The more generic skills (2, 3, 5,) are assessed across a number of modules. For example, the module '3D Modelling and Animation' requires the students to develop a short animation (7) as part of the assessment whilst the examination allows students to demonstrate that they have grasped the underlying concepts that inform the professional development of such an artifact. Skills such as use of appropriate multimedia artifacts (3) are fundamental to modern professional information presentation of any sort and thus contribute to the assessment of much, but not all, of the practical work produced.

Subject Specific Skills	Teaching/Learning Methods and Strategies	Assessment
7. Create lip-synched 3D animations using appropriate animation techniques, motion capture principles, shading algorithms and rendering methods. 8. Specify the requirements for a multimedia focused application and undertake its design and implementation using appropriate software tools and techniques.		

C. Cognitive (Intellectual) Skills

Cognitive (Intellectual) Skills	Teaching/Learning Methods and Strategies	Assessment
1. Critical Thinking 2. Analysis 3. Synthesis of different types of information 4. Evaluation 5. Problem Solving 6. Appreciate problem contexts 7. Balance conflicting objectives	At all levels students are required to bring together knowledge and skills acquired in several modules and hence determine new ways of working. As the student progresses, the need to synthesise (3) ever-greater volumes of information and approaches into a coherent approach is developed and consequently so is their critical thinking (1). At level 1 Analysis (2), Evaluation (4) and Problem Solving (5) are developed on small-scale problems in various programming activities in a number of modules. Here the focus is on understanding the problem and then solving it free from the environmental implications of real-world problems and without the need to examine alternatives and to balance conflicting goals. At level 2 there is a move away from small-scale relatively trivial problems to the consideration of larger scale more complex systems. With this comes the need to evaluate (4) alternative methods and designs and to balance conflicting objectives (7). Level 3 sees the move to yet more sophisticated techniques and more complex examples and with it the need to appreciate problem contexts (6) is developed as well as striking the right balance when facing conflicting objectives (7).	Programming of complex software requires demonstration of all of the intellectual skills. At level 1 the focus in programming coursework assessment, is on the skills of Analysis (2), Evaluation (4) and Problem Solving (5). At levels 2 and 3 this branches out to include all the remaining skills. Many of the coursework assessments and exam papers include elements of programming work. Independent reading is used to enable students to focus on their own areas of interest and in the process assess skills 1-4 in the submitted reports, essays and exam answers. Design-work, even when not implemented in a programming language, requires demonstration of skills 1, 2, 5, 6, 7 and a number of coursework assessments and exam questions are devoted to such work. Finally, all of the examinations assess skills 1-4 whist skills 5-7 are covered in many exams.

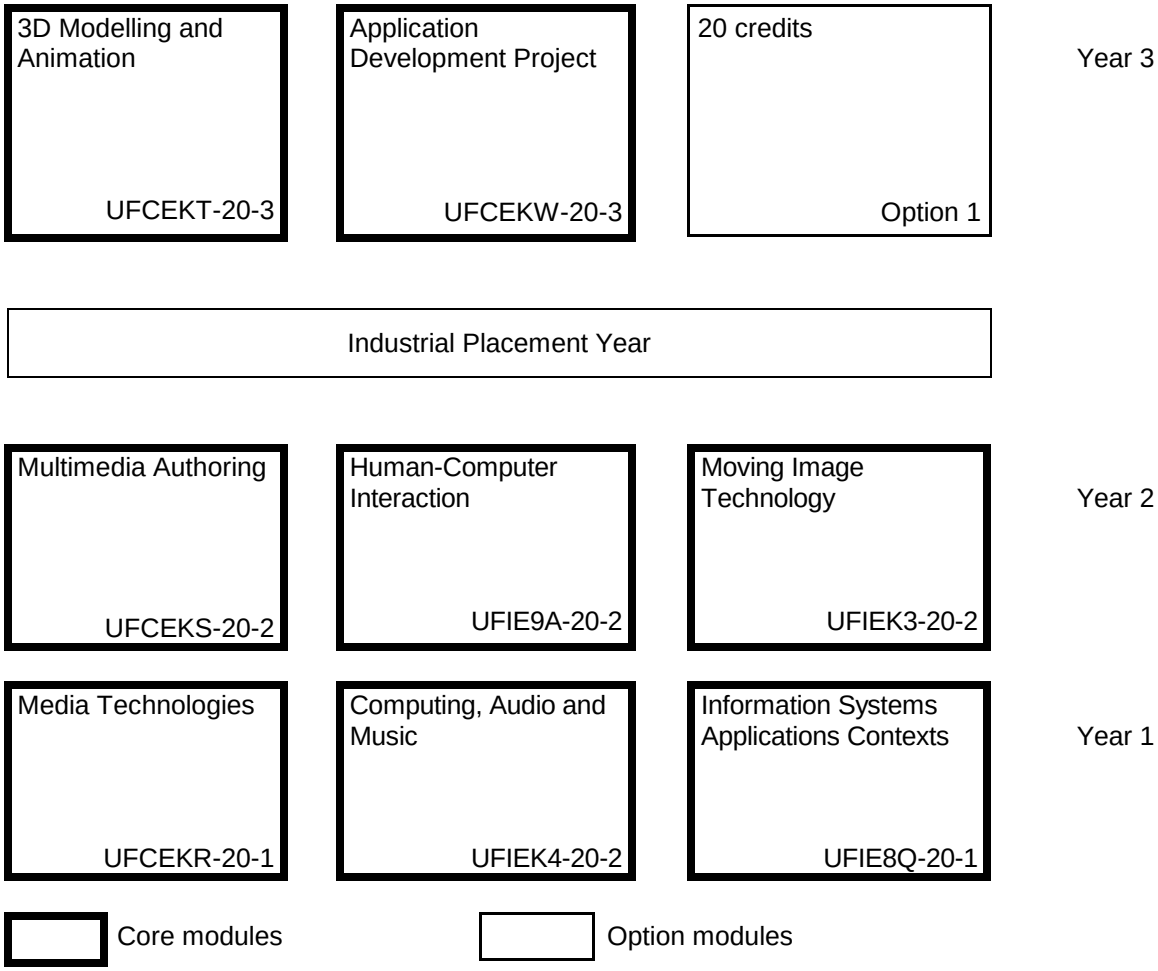
D. Key (Transferable) Skills

Key (Transferable) Skills	Teaching/Learning Methods and Strategies	Assessment
1. Communication skills**:** to communicate orally or in writing, including, for instance, the results of technical investigations, to peers and/or to "problem owners".	1. Skill one is developed through a variety of methods and strategies including the following: ♦ Students participate in electronic conferences, workshops, and groupwork sessions. ♦ Students participate in discussion tutorials ♦ Students present research topic findings in tutorials ♦ Students participate in individual tutorials	1. Skill one is demonstrated mainly by examination, but also by poster presentation. 2. Skills two to eight are demonstrated by a number of similar instruments including the following: ♦ Individual and group projects ♦ Practical assignments ♦ Portfolio of exercises
2. Self-management skills: to manage one's own time; to meet deadlines; to work with others having gained insights into the problems of team-based software development.	2. Skill two is developed through a variety of methods and strategies including the following: ♦ Students conduct self-managed practical work ♦ Students participate in practically-oriented tutorial laboratory sessions ♦ Students work through practical work-sheets in teams ♦ Students practice design and programming ♦ Students participate in electronic conferencing tutorials ♦ Students participate in electronic groupworking	
3. IT skills in context: to use software tools in the context of application development.	3. Skill three is developed through a variety of methods and strategies including the following: ♦ Students conduct self-managed practical work ♦ Students participate in experimental investigation tutorials ♦ Students work through practical work-sheets in teams ♦ Students make use of online teaching materials ♦ Students are encouraged to practice programming to extend their skills	

Key (Transferable) Skills	Teaching/Learning Methods and Strategies	Assessment
4. Logical reasoning skills: To undertake analysis and interpretation of information in the context of Artificial Intelligence.	4. Skill four is developed through a variety of methods and strategies including the following: ♦ Students develop problem-solving programs ♦ Case-Studies are used to explore design issues with students ♦ Students practice design and programming ♦ Students sketch designs of larger systems	
5. Problem formulation: To express problems in appropriate notations.	5. Skill five is developed through a variety of methods and strategies including the following: ♦ Students develop problem solving programs ♦ Students practice design and programming in a number of different languages ♦ Students sketch designs of larger systems	
6. Progression to independent learning: To gain experience of, and to develop skills in, learning independently of structured class work. For example, to develop the ability to use on-line facilities to further self-study.	6. Skill six is developed through a variety of methods and strategies including the following: ♦ Students are encouraged to practice programming to extend their skills ♦ Students are encouraged to research relevant topics ♦ Students are encouraged to use online facilities to discover information	
7. Comprehension of professional literature: to read and to use literature sources appropriate to the discipline to support learning activities.	7. Skill seven is developed through a variety of methods and strategies including the following: ♦ Students are encouraged to access online material	
8. Information access: to understand basic techniques for structuring and thereby accessing information.	8. Skill eight is developed through a variety of methods and strategies including the following: ♦ Students contribute to electronic conferencing sessions having researched a topic and formulated an appropriate means of communicating the results to peers.	

Section 4: Programme Structure *- This structure is indicative and subject to change*

Multimedia Computing Joint Honours



Option 1 – choose from:

UFCE4T-10-3 Interface Engineering
UFCEKU-20-3 Games Programming
UFIEKD-20-1 Informing and Communicating
UFIEKJ-20-3 Professional, Ethical and Policy Issues
UFIEKK-10-3 Text & Markup Languages
UFIEKV-10-3 Digital Stories

Section 5: Entry Requirements

The university's minimum requirements for entry to a degree apply to this programme. In addition entrants are required to have Mathematics at GCSE Grade C or equivalent.

Section 6: Assessment Regulations

The university's Modular Assessment Regulations apply to this programme.

Section 7: Student Learning: Distinctive Features and Support

Within the Faculty of Computing Engineering and Mathematical Sciences, student learning is supported in the following ways:

Class Activities The mode of delivery of a module is determined by its Module Leader, and typically involves a combination of one or more lectures, tutorials, 'lectorials', laboratory classes, group activities and individual project work.

Academic Support Academic advice and support is the responsibility of the staff delivering the module in question. Staff are expected to be available outside normal timetabled hours, either by appointment or during published "surgery" hours, in order to offer advice and guidance on matters relating to the material being taught and on its assessment.

Pastoral Care The faculty offers pastoral care through its Student Advisers, a team of staff who provide comprehensive, full-time student support service on a drop-in basis and by appointment. All students on the same route are allocated to the same Adviser, who is trained to provide advice on matters commonly of concern, including regulatory and other matters. The Adviser will advise the student to seek advice from appropriate professional services including the university's Centre for Student Affairs or from members of academic staff.

Progression to Independent Study
Many modules require students to carry out independent study, such as research for projects and assignments, and a full range of facilities are available to help students with these. Accordingly, the philosophy is to offer students both guided support and opportunities for independent study. Guided support, mainly in the form of timetabled sessions, which students are expected to attend.

The progression to independent study is also assisted by the nature of the support offered in individual modules. Typically, module leaders will provide a plan for the module indicating the activities to be carried out and the forms of learning to be undertaken during the delivery of the module, with a view to encouraging students to plan ahead and to take responsibility for managing their time and resources.

Computing Facilities The Faculty offers a specialised computing facility along side the general University provision. There are nine general PC computing laboratories of 20 plus seats all running Windows2000, along with four Unix based and 10 specialist computing laboratories. The specialist laboratories are equipped with software for CEMS students including Software Tools and Development Environments.

One of the most popular areas within the Faculty is the Open Access laboratory. This area is never time-tabled and gives students the opportunity to access machines at all times during opening hours. This is a mixed environment consisting of PCs and Unix workstations.

Due to the extensive and specialist nature of the computing facility provided within the Faculty there is a need for user support. The Faculty provides a user support Helpdesk that provides first line support

to users. It is uniquely supported by both permanent staff and students who are in their second or final year of study and are employed on a part time basis. The helpdesk is open from 08.30 hrs until 20.00hrs every day. The general laboratories are available to students up until midnight, seven days per week.

Section 8 Reference Points/Benchmarks

The QAA Subject Benchmark Statement for Computing was published in 2000, and is applicable to this proposal. The design team has considered it in drawing up the structure of the proposed half-degree, and is of the view that the proposal falls clearly within the scope of the benchmarks, as regards curriculum, teaching and learning, and the benchmarking standards themselves.

The benchmarks (paragraph 2.1) identify a range of types of degrees in computing. At one extreme is a programme that "*covers a wide range of topics spanning the entire area of computing". A*t the other programmes that "*take one very specific aspect of computing and covers it in great depth"*. This proposal is closer to the second of these extremes.

The benchmarks recognise (paragraph 3.3) that diversity of provision is to be encouraged, and hence joint degrees have an important place. Nevertheless, there are inevitably constraints on the breadth of coverage of the subject possible within a "half-degree". The design team has faced these constraints as part of the course design as set out in the benchmarks (paragraph 3.1), and it believes that it has successfully met them all to the extent that it is possible to do so within the half-degree structure.

The benchmarks also contain (section 5) statements of the standards expected of graduates at both modal and threshold levels. The team is of the view that graduates of the proposed programme will be able to meet the required standards, albeit in some cases to a lesser breadth than would be expected of a graduate in a full honours degree in Multimedia Computing.

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of individual modules can be found in the module specifications.

The programme will be delivered in accordance with the faculty's Teaching, Learning and Assessment Strategy which has in turn been informed by the university's Learning & Teaching Strategy.