HNC Computing
HNC/D Interactive Multimedia Creation
HND Computing: Technical Support
HND Computing: Software Development
BSc Computing

Course Information

(English)

Contents

Computing and Multimedia

Awards Available

Bachelor of Science Computing	3 Year Course
Higher National Diploma Computing: Technical Support	2 Year Course
Higher National Diploma Computing: Software Development	2 Year Course
Higher National Diploma Interactive Multimedia Creation	2 Year Course
Higher National Certificate Computing	1 Year Course
Higher National Certificate Interactive Multimedia Creation	1 Year Course

Structure of Awards

Higher National Certificate is a qualification in its own right and can also count as the first year of a degree programme. Students are normally expected to achieve 15 HN credits = 60 ECTS = 120 Scotcat credits during the academic year. The academic year is divided into two semesters (See college calendar).

Higher National Diploma is a qualification in its own right and can also count as the second year of a degree programme. Students are normally expected to achieve 15 HN credits = 60 ECTS = 120 Scotcat credits during the academic year. The academic year is divided into two semesters (See college calendar).

Bachelor of Science Computing Year 3 is the third year of the degree programme. Students are expected to achieve 120 Scotcat credits = 60 ECTS in the course of the academic year. The course consists of a total of 8 subjects of equal value. These subjects are listed on the following pages. Each subject carries a value of 7.5 ECTS = 15 Scotcat credits.

Teaching Methods

Classes consist of lectures, tutorials and practical sessions. Occasionally lectures may be delivered by videoconferencing**.**

Assessment Procedures

Higher National Certificate

The course is assessed using continuous assessment for each subject + one integrated exam for the whole course.

Higher National Diploma

The course is assessed using continuous assessment for each subject + project for the whole course.

Bachelor of Science Computing Degree Year 3

Subjects are assessed by course work and examination
Exams take place in December and May

Recommended Reading

For information regarding background reading and other course information please contact the Curriculum Leader responsible for Computing and Multimedia: Derek Duncan
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Coordinators

International Coordinator:	Gordon Biggs	Tel. + 44 1343 576323	Email: *Gordon.Biggs@moray.uhi.ac.uk*
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Course Information - Computing

Available Subjects
Computing Courses are delivered at Moray College from September to the following June.

HNC Computing units	HN Credits	ECTS	Scotcat Credits
Computer Architecture 1	1	4	8
Computing: Planning	1	4	8
Information Technology: Applications Software 1	1	4	8
Computer Operating Systems 1	1	4	8
Multi User Operating Systems	1	4	8
Working Within a Project Team	1	4	8
HNC Computing Graded Unit – Examination	1	4	8
Systems Development: Introduction	1	4	8
Software Development: Developing for the World Wide Web	2	8	16
SQL: Introduction	1	4	8
Internet: Client Side Web Scripting	1	4	8
Information Technology: Applications Software 2	1	4	8
Computer Hardware: Hardware Installation and Maintenance	2	8	16

HND Computing: Software Development	HN Credits	ECTS	Scotcat Credits
Professional Issues in Computing	2	8	16
Project Management 1	1	4	8
Computing: Group award (Software Development) Graded Unit 2	2	8	16
Software Development: Array Data Structure	1	4	8
Systems Development: Object Oriented Design (Introduction)	1	4	8
Systems Development: Object Oriented Design	2	8	16
Software Development: Object Oriented Programming	2	8	16
Software Development: Relational Database Systems	2	8	16
Multimedia: Developing Multimedia Applications	2	8	16

HND Computing: Technical Support	HN Credits	ECTS	Scotcat Credits
Professional Issues in Computing	2	8	16
Project Management 1	1	4	8
Computer Operating Systems 2	1	4	8
Client Operating Systems	1.5	6	12
Network Server Operating System	1.5	6	12
Computer Networks: Network Technology and Data Communications	2	8	16
Computing: Group Award (Technical Support) Graded Unit 2	2	8	16
Software Development: Relational Database Systems	2	8	16
Multimedia: Developing Multimedia Applications	2	8	16

BSc Computing - Year 3

Semester 1	ECTS	Scotcat Credits
Research Management Skills	7.5	15
Advanced Web Databases	7.5	15
Advanced Internet Topics	7.5	15
Games Strategies and Development	7.5	15

Semester 2	ECTS	Scotcat Credits
E-commerce	7.5	15
Team Project	7.5	15
Intelligent Internet Applications	7.5	15
Multimedia Computing and Systems	7.5	15

Course Information - Multimedia

HNC Interactive Multimedia Creation	HN Credits	ECTS	Scotcat Credits
Graphics for Creative Multimedia Design	2	8	16
Multimedia Fundamentals	2	8	16
Information Technology: Applications Software 1	1	4	8
Audio Visual Techniques for Multimedia Applications	2	8	16
Advanced Bitmap Graphics for Creative Multimedia Design	2	8	16
HNC Graded Unit: Exam	1	4	8
Multimedia: Developing Multimedia Applications	2	8	16
Multimedia: Developing Multimedia Applications for Practical Redelivery	1	4	8
User Interface: Development	1	4	8
Writing for the Media	1	4	8

HND Interactive Multimedia Creation	HN Credits	ECTS	Scotcat Credits
2D Digital Imaging and Animation	2	8	16
Advanced Vector Graphics for Creative Multimedia Design	2	8	16
Project Management	1	4	8
User Interface: Testing and Evaluation	2	8	16
Developing Data Driven Applications	2	8	16
HND Graded Unit: Project	2	8	16
Professional Issues in Computing	2	8	16
Scripting for Interactivity	2	8	16

Subject Description

HNC Computing

Computer Architecture 1 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to develop broad general knowledge and understanding of the theoretical concepts, principles, boundaries and scope of the mechanisms that underpin the use of digital computers. This includes the way in which the internal representation used within the machine can be translated to give human readable values.

Study of the Unit also provides a foundation knowledge of the mechanisms used by a processor to communicate with memory and external devices, how a processor deals with requests from external sources, and the characteristics and requirements of the devices that processors can be regularly expected to deal with.

On completion of this Unit the candidate should be able to:
- Demonstrate an ability to manipulate and translate data representations.
- Demonstrate an understanding of the functions of computer system components.
- Demonstrate an understanding of the principles of Central Processor Unit (CPU) operation.

Computing: Planning (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to enable candidates to develop generic knowledge and practical skills in the stages and techniques of planning. This unit is taught in conjunction with the unit "Developing for the World Wide Web", enabling students to undertake a full software design and implementation project.

On completion of the Unit the candidate should be able to:
- Produce a precise specification from a given brief.
- Derive a detailed design for the required specification.
- Produce a test plan for the required specification.

Information Technology: Applications Software 1 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to enable students to use Information Technology (IT) systems and applications independently to support a range of information processing activities. The Unit is designed to develop a broad knowledge of the theoretical concepts, principles, boundaries and scope of IT applications. These activities will be centred on using software applications packages to meet complex information requirements while paying attention to security and the needs of other users.

On completion of the Unit the candidate should be able to:
- Operate a range of IT equipment independently, giving attention to security and to other users
- Use a range of software application packages to meet complex information requirements

Computer Operating Systems 1 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to enable candidates to gain an understanding of typical desktop computer operating systems. Candidates will learn how to use and install both operating system and applications software. Candidates will also gain experience of installing and configuring system-level software, (eg device drivers) within the operating environments as well as applications software.

On completion of this Unit the candidate should be able to:
- Describe the structure and function of an operating system.
- Use a graphical environment to operate a computer.
- Install and configure an operating environment.
- Install and configure system and application software.

Multi User Operating Systems (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to provide candidates with a practical introduction to, and understanding of, the main concepts of a Multi User Operating System. In particular, the Unit concentrates on the practical skills required to manipulate Operating Systems facilities effectively. This practical work is supported by an introduction to the main theoretical concepts of multi user operating systems, including resource management, process management, memory management, and the main hardware and software components.

On completion of the Unit the candidate should be able to:

- Describe the characteristics of a multi user operating system.
- Use the facilities of a multi user operating system.
- Compose scripts to carry out routine tasks.

Working within a Project Team (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This unit is designed to provide candidates with the experience of working in a team to negotiate goals, roles and responsibilities, support co-operative working and present agreed project outcomes within the timescale prescribed by the team.

Individual team members should be able to identify and gather appropriate evidence, evaluate written information related to the task, contribute to formal meetings and group discussions, apply methodologies from (a) selected area(s) of the award to the project, track and record progress and produce a written report to a prescribed format with supporting, referenced documentation where appropriate.

As the final part of the written report, candidates should also be able to evaluate and draw conclusions in relation to their own contribution.

On completion of the Unit the candidate should be able to:

- Individually gather and/or read and evaluate written, graphical or pictorial information on a team task, and in co-operation with others, decide on a course of action for completing the project.
- In co-operation with others, plan, organise and carry out the task.
- Individually, produce a written report, in a prescribed format, reflecting on what has been done and drawing conclusions for the future.

HNC Computing Graded Unit – Examination (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
The HNC Computing Graded Unit – Examination is a 3-hour closed book exam which counts as 1 HN Credit. The 3 HN Units covered in the exam are: DH2T 34: Computer Architecture 1
DH35 34: Computing: Planning
DH33 34: Computer Operating Systems 1

Systems Development: Introduction (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is about introducing candidates to the systems development process. It provides a broad knowledge of systems development and candidates will be able to apply the main techniques used within systems analysis and design. It is primarily intended to prepare candidates who expect to gain employment in an IT/Computing-related post at technician or professional level in a software development role.

On completion of this Unit the candidate should be able to:

- Describe systems development life cycle models.
- Describe the techniques involved in systems requirements analysis.
- Use modelling techniques.
- Use relational data analysis techniques.

Software Development: Developing for the WWW (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to develop a broad knowledge of the concepts, principles, boundaries and scope of software development using scripting languages. These will be reinforced by developing the practical skills required in using the structures and features of scripting languages (i.e. JavaScript and PHP) in the creation of software solutions to interactive web based problems.

On completion of this Unit, the candidate should be able to:
- Describe the scripting features of Web-based applications.
- Design a web-based application using the principles of software planning.
- Use appropriate tools and techniques to implement Web based apps.
- Utilise server side scripting including database processing.

SQL: Introduction (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to develop a broad knowledge of the concepts, principles, boundaries and scope of relational databases using a query language. These will be reinforced by developing the practical skills required in using the structures and features of a query language in order to maintain and interrogate a relational database management system. The SQL constructs used adhere to the current standards, so will be applicable in all SQL-based platforms.

On completion of the Unit the candidate should be able to:
- Create and maintain a data storage system.
- Manipulate data stored within a table structure.
- Produce formatted reports

Internet: Client Side Web Scripting (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to provide candidates with a practical understanding of a client-side Web scripting language (i.e. JavaScript). Candidates will become proficient in designing and implementing scripts within Web documents.

On completion of the Unit the candidate should be able to:
- Describe browser features relevant to client side web scripting.
- Use the programming features of a client side web scripting language.
- Use a client side scripting language to enhance the functionality of a Web documents.

Information Technology: Applications Software 2 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to enable candidates to attain an advanced level of proficiency in Information Technology (IT). As such, it aims to further develop the candidate's knowledge of the theoretical concepts, principles, boundaries and scope of IT applications. The intention of the Unit is to develop in the candidate the importance of the integration of complex information through the sharing of information between applications and users and by use of advanced features of software applications packages.

On successful completion of the Unit candidates will be able to:
- Use advanced techniques of software application packages for automation
- Use advanced techniques of software applications packages for integration
- Use data communications to share data with other users
- Use software application presentation tools.

Computer Hardware: Hardware Installation And Maintenance (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to enable candidates to work effectively in a computer hardware technical support role. It prepares them for this task by ensuring they possess the underpinning knowledge required to understand the operation of modern personal computer hardware at a sub-system level. Practical experience is then gained of installation, maintenance and main failure modes of all major personal computer sub-systems, including the installation and configuration of low-level software such as device drivers.

On completion of the Unit the candidate should be able to:
- Describe the major sub-systems and operation of a modern personal computer
- Install and configure system hardware components and peripherals
- Perform routine maintenance, basic fault-finding and rectification at a sub-system level
- Identify risks and use safe working practices

HND Computing: Software Development

Professional Issues in Computing (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to provide candidates with an extensive knowledge and understanding of the working environment of a computing professional. The Unit will provide candidates with a broad knowledge of the ethical, social and legal aspects of professional computing. This Unit is primarily intended for candidates who propose to follow a career, or are following a career, as computing professionals and who require an understanding of the responsibilities of such employment.

On completion of this Unit the candidate should be able to:

1. Describe professional institutions within computing.
2. Describe legislation that applies to the computing profession.
3. Evaluate the impact of legislation within the computing profession.
4. Evaluate the impact of codes of conduct within the computing profession.
5. Apply ethical principles within computing.

Project Management 1 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to provide the candidate with the skills required to develop and manage a project plan using commercially available project management software. The resultant skills will enable the candidate to develop and implement a project plan, and to manage the key resources involved in the development of a project in terms of time, cost, and human and physical resources. The contents will also provide the skills required to communicate information on the project both in report format as well as integration with other applications tools. The Unit may be undertaken by any candidate in any discipline where there is a need to learn and develop such Project Management knowledge and skills. The unit is written in generic terms enabling it to be completed using any commercially-available project management software tool, and may be delivered as a 'stand-alone' Introduction to Project Management software, or else included as part of an HN Group Award.

On completion of this Unit, the candidate should be able to:

1. Establish the project environment.
2. Develop a project plan.
3. Manage project information.
4. Produce customised project information.

Computing Group Award (Software Development) Graded Unit 2 (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Graded Unit is designed to provide evidence that the candidate has achieved the following principal aims of the HND Computing: Software Development.

- To develop a range of specialist technical software development skills and knowledge in systems development and programming.
- To prepare students for employment in an IT/Computing-related post at technician or professional level in a software development role.
- To prepare students for progression to further study in Computing, Software Development, Software Engineering or a related discipline.

Software Development: Array Data Structures (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to enable candidates to become familiar with abstract data types and the array data structures used to implement them within software systems. This knowledge will be supplemented by research, analysis, design and coding of structures in order to create applications to meet user requirements. This Unit is suitable for candidates who wish to pursue a career in software development.

On completion of the Unit the candidate should be able to:

1. Describe data representation and storage in computer systems.
2. Develop and implement operations on array data structures.
3. Develop, implement and use searching and sorting techniques.

Systems Development: Object Oriented Design (Introduction) (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is about developing an awareness of the different approach that can be taken to systems development when applying object-oriented techniques. This Unit should develop the candidate's awareness of the concepts and terminology involved in object-oriented analysis and design. It is primarily intended to prepare candidates who expect to gain employment in an IT/Computing-related post at technician or professional level in a software development role.

On completion of the Unit the candidate should be able to:

1. Describe object oriented concepts
2. Produce a model of the dynamic aspects of the system
3. Produce a model of the static aspects of the system

Systems Development: Object Oriented Design (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to enable candidates to develop a knowledge of the theoretical concepts, underlying principles, scope and role of systems analysis and design undertaken within an object oriented environment. The Unit develops candidates' practical systems development skills and introduces candidates to a variety of requirements gathering and modelling techniques used in object oriented systems analysis and design, using UML or similar modelling notation. The study of this Unit will provide a strong foundation for a candidate who will be developing object oriented, or event-driven software, and systems in an object oriented or object/component based environment.

On completion of this Unit the candidate should be able to:

1. Describe the object oriented approach to systems development.
2. Use object oriented techniques to gather requirements.
3. Produce a model of system objects.
4. Produce a model of system behaviour.
5. Specify physical design of the system.

Software Development: Object Oriented Programming (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to develop a broad knowledge of the concepts, principles, boundaries and scope of software development using an object oriented programming language. These will be reinforced by developing the practical skills required in using the structures and features of an object oriented programming language in the creation of software solutions to problems. It forms part of an HN Computing group award programme, although it can also be used as a stand-alone Unit by candidates wishing to acquire and develop programming skills using an object oriented language.

On completion of this Unit, the candidate should be able to:

1. Use programming techniques to develop program modules
2. Implement a solution from design
3. Test the completed product
4. Create technical and user documentation

Software Development: Relational Database Systems (2HN Credits = 8 ECTS = 16 Scotcat Credits
This Unit is designed to enable candidates to understand the manipulation of normalised data structures. This knowledge will allow the candidate to apply this knowledge in the design and use of relational database systems to solve problems with synthesis evaluating solutions within the discipline of information systems.

This Unit is suitable for candidates wishing to specialise in the design and implementation of solutions based on hierarchical information systems.

On completion of the Unit the candidate should be able to:

1. Explain the terminology and techniques used in the design of relational information systems.
2. Create a relational database design from user requirements.
3. Describe the issues involved in implementing a relational database system.
4. Implement structures and manipulate data in a relational database management system.
5. Use a programming language to interface with a relational database management system.

Multimedia: Developing Multimedia Applications (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to provide candidates with a broad knowledge of the theoretical concepts, principles, boundaries and scope of the development of multimedia applications. The Unit adopts a structured approach to the development process from analysis of the problem and research of user needs, through design, prototyping, implementation, testing and evaluation to ensure that the selection and deployment of media types matches the task requirements, context of use and user requirements. It prepares candidates for this role by providing them with the underpinning knowledge needed to carry out this type of development effectively. Current terminology is introduced as appropriate. The Unit is primarily intended for candidates in computing or graphic design. It would also be relevant to those with appropriate work experience such as the use of desktop publishing or computer graphics packages.

On completion of the Unit the candidate should be able to:

1. Identify and document task and user requirements and context of use
2. Produce a design and specification and build a prototype multimedia application
3. Implement a multimedia application based on a design specification
4. Test and evaluate a multimedia application and revise as required

Project Management 1 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to provide the candidate with the skills required to develop and manage a project plan using commercially available project management software. The resultant skills will enable the candidate to develop and implement a project plan, and to manage the key resources involved in the development of a project in terms of time, cost, and human and physical resources. The contents will also provide the skills required to communicate information on the project both in report format as well as integration with other applications tools. The Unit may be undertaken by any candidate in any discipline where there is a need to learn and develop such Project Management knowledge and skills. The unit is written in generic terms enabling it to be completed using any commercially-available project management software tool, and may be delivered as a 'stand-alone' Introduction to Project Management software, or else included as part of an HN Group Award.

On completion of this Unit, the candidate should be able to:

1. Establish the project environment.
2. Develop a project plan.
3. Manage project information.
4. Produce customised project information.

Computer Operating Systems 2 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to enable candidates to gain an understanding of command line interface desktop computer operating systems. Candidates will learn how to work in this type of operating system environment and carry out file management and create automated files. It is intended for candidates on an HN Computing or related discipline who require knowledge and skills in working in a command line interface operating system function and operation.

On completion of the Unit the candidate should be able to:

1. Carry out file management tasks using a command line environment.
2. Perform tasks using a command line environment.
3. Create automated operations using a command line environment.

Client Operating System (1.5 HN Credits = 6 ECTS = 12 Scotcat Credits)
This Unit is designed to introduce candidates to the issues involved in installing and administering a client operating system. It is intended for candidates undertaking an HND in Computing, Computer Networking or a related area who require a broad knowledge of client operating systems.

On completion of the Unit candidates should be able to:

1. Install a client operating system.
2. Implement and administer resources.
3. Implement, manage and troubleshoot hardware devices and drivers.
4. Monitor and optimise system performance and reliability.
5. Configure and troubleshoot the desktop environment.
6. Implement network protocols and services.
7. Implement, monitor and troubleshoot security.

Network Server Operating System (1.5 HN Credits = 6 ECTS = 12 Scotcat Credits)
This Unit is designed to introduce candidates to the issues involved in managing and maintaining a network server operating system. It is intended for candidates undertaking an HNC or HND in Computing, Computer Networking or a related area who require a broad knowledge of network servers, including the main theories, concepts and principles in this area.

On completion of the Unit candidates should be able to:

1. Manage and maintain physical and logical devices.
2. Manage users, computers and groups.
3. Manage and maintain access to resources.
4. Manage and maintain a server environment.
5. Manage and implement disaster recovery.

Computer Networks: Network Technology and Data Communications (2HN Credits = 8 ECTS =16 Scotcat Credits)
This Unit is designed to introduce candidates to the basic concepts and principles of data communications, and to provide candidates with a wide knowledge of the technologies and standards involved in the construction of modern Local and Wide Area Networks. It is intended for candidates undertaking a Computing or Information Technology-related qualification who require an understanding of modern networking concepts and practice.

On completion of the Unit the candidate should be able to:

1. Define the principles of data communications
2. Define the characteristics and construction of Local Area Networks
3. Describe the characteristics and construction of Wide Area Networks

Computing: Technical Support: Graded Unit 2 (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
Type of Graded Unit: Project
Assessment Instrument: Practical Assessment
This Graded Unit is designed to provide evidence that the candidate has achieved the following principal aims of the HND Computing: Technical Support:

- To prepare students for employment in an IT/Computing-related post at technical or professional level in technical or network support.
- To develop a range of contemporary vocational skills, ie technical computing skills relating to the use and support of IT systems appropriate to employment at technician (or equivalent) level.

Software Development: Relational Database Systems (2HN Credits = 8 ECTS = 16 Scotcat Credits
This Unit is designed to enable candidates to understand the manipulation of normalised data structures. This knowledge will allow the candidate to apply this knowledge in the design and use of relational database systems to solve problems with synthesis evaluating solutions within the discipline of information systems.
This Unit is suitable for candidates wishing to specialise in the design and implementation of solutions based on hierarchical information systems.

On completion of the Unit the candidate should be able to:

1. Explain the terminology and techniques used in the design of relational information systems.
2. Create a relational database design from user requirements.
3. Describe the issues involved in implementing a relational database system.
4. Implement structures and manipulate data in a relational database management system.
5. Use a programming language to interface with a relational database management system.

Multimedia: Developing Multimedia Applications (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to provide candidates with a broad knowledge of the theoretical concepts, principles, boundaries and scope of the development of multimedia applications. The Unit adopts a structured approach to the development process from analysis of the problem and research of user needs, through design, prototyping, implementation, testing and evaluation to ensure that the selection and deployment of media types matches the task requirements, context of use and user requirements. It prepares candidates for this role by providing them with the underpinning knowledge needed to carry out this type of development effectively. Current terminology is introduced as appropriate. The Unit is primarily intended for candidates in computing or graphic design. It would also be relevant to those with appropriate work experience such as the use of desktop publishing or computer graphics packages.

On completion of the Unit the candidate should be able to:

1. Identify and document task and user requirements and context of use
2. Produce a design and specification and build a prototype multimedia application
3. Implement a multimedia application based on a design specification
4. Test and evaluate a multimedia application and revise as required

Multimedia - Year 1

Advanced Bitmap Graphics for Creative Multimedia Design (2 HN Credits = 8 ECTS = 16 Scotcat credits)
Unit purpose: This Unit is designed to provide candidates with the knowledge and/or skills necessary to produce creative solutions using the full extent of bitmap graphic software packages. The main activities in the Unit are aimed at creating design solutions with the skills providing the tools for the candidate to fully express their creative thinking. Other activities highlight organisational skills and the preparation of materials for incorporation into a larger project.

On completion of the Unit the candidate should be able to:

1. Create composite images using bitmap graphic software.
2. Use advanced features of bitmap graphic software.
3. Analyse the optimisation of bitmap graphics.

Audio Visual Techniques for Multimedia Applications (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
The purpose of this unit is to provide candidates with the knowledge and/or skills necessary to acquire audio and video material and manipulate and edit the acquired material within multimedia contexts.

On completion of the Unit the candidate should be able to:

1. Acquire video sequences using a range of video sources.
2. Acquire audio material from a range of sources.
3. Manipulate and edit audio and video elements within the context of a cohesive multimedia product.

Graphics for Creative Multimedia Design (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to provide candidates with the knowledge and skills necessary to create, acquire, manipulate and output Graphic elements within a multimedia context. The Unit should be delivered as part of a cohesive course, although it can be delivered on its own.

On completion of the Unit the candidate should be able to:

1. Describe practical and aesthetic factors in the use of colour.
2. Describe practical and aesthetic factors in the use of type forms.
3. Create bitmap graphic files.
4. Create vector graphic files.

Group Award Graded Unit Title: Interactive Multimedia Creation: Group Award Graded Unit 1 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
Type of Group Award Graded Unit: Examination
Assessment Instrument: Closed book question paper

Information Technology: Applications Software 1 (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to enable students to use Information Technology (IT) systems and applications independently to support a range of information processing activities. The Unit is designed to develop a broad knowledge of the theoretical concepts, principles, boundaries and scope of IT applications. These activities will be centred on using software applications packages to meet complex information requirements while paying attention to security and the needs of other users.

On completion of the Unit the candidate should be able to:

1. Operate a range of IT equipment independently, giving attention to security and to other users
2. Use a range of software application packages to meet complex information requirements

Multimedia Fundamentals (2 HN Credits = 8 ECTS = 16 Scotcat credits)
This Unit is intended to provide underpinning knowledge and skills to those who use multimedia technology in such areas as digital media, design and presentation.

On completion of the Unit the candidate should be able to:

1. Perform arithmetical operations required for digital media representations.
2. Determine file sizes and compression for multimedia element representations.
3. Use an Operating System to manipulate file systems.
4. Select backup strategies, describe data storage systems and transfer systems.
5. Transfer data and install software.

Multimedia: Developing Multimedia Applications (2 HN Credits = 8 ECTS = 16 Scotcat credits)
This Unit is designed to provide candidates with a broad knowledge of the theoretical concepts, principles, boundaries and scope of the development of multimedia applications. The Unit adopts a structured approach to the development process from analysis of the problem and research of user needs, through design, prototyping, implementation, testing and evaluation to ensure that the selection and deployment of media types matches the task requirements, context of use and user requirements. It prepares candidates for this role by providing them with the underpinning knowledge needed to carry out this type of development effectively. Current terminology is introduced as appropriate. The Unit is primarily intended for candidates in computing or graphic design. It would also be relevant to those with appropriate work experience such as the use of desktop publishing or computer graphics packages.

On completion of the Unit the candidate should be able to:

1. Identify task and user requirements and context of use
2. Design and prototype a multimedia application
3. Implement a multimedia application based on a design specification
4. Test and evaluate a multimedia application and revise as required

Researching Multimedia Applications for Practical Re-Delivery (1 HN Credit = 4 ECTS = 8 Scotcat credits)
This Unit is designed to provide candidates with the knowledge and skills required to convert a multimedia application from one distribution medium to another. This includes examination of the media elements included in the application, consideration of Intellectual Property Rights and the processes required. One example of such a conversion is that of converting a CD-ROM application to a World Wide Web site. Candidates should examine an existing multimedia application for suitability for conversion to delivery by another mechanism and carry out the processes required. These processes include: redesign, and conversion of media elements.

On completion of the Unit the candidate should be able to:

1. Conduct research into a broad range of multimedia applications in current creative and interactive digital practice.
2. Select and assess an existing multimedia application.
3. Convert multimedia elements for re-purposing.
4. Construct and test a re-purposed multimedia application.

User Interface Development (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to provide candidates with the knowledge and skills to enable them to design and create a prototype user interface to a multimedia product.

On completion of the Unit the candidate should be able to:

1. Describe the core concepts of User Interface design.
2. Critically evaluate the user interfaces of computer systems.
3. Develop a prototype user interface for a system.

Writing for the Media (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to develop the candidate's ability to analyse features of professional scripts and copy used in print, broadcast and multimedia. This will, in turn, inform and underpin the candidate's own copy and scriptwriting skills. It is aimed at those who wish to gain a basic and general competence in writing for the media; and beyond this, offers an opportunity to develop creative writing skills in a vocational context.

On completion of the Unit the candidate should be able to:

1. Analyse features of professional copy produced for print and broadcast media
2. Write copy for print or electronic media
3. Write a script for a broadcast or electronic medium

Multimedia - Year 2

Advanced Vector Graphics for Creative Multimedia Design (2 HN credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to provide candidates with the knowledge and/or skills necessary to produce advanced vector graphics for a design brief. The main activities in the Unit are aimed at creating design solutions with the skills providing the tools for the candidate to fully express their creative thinking. Other activities highlight organisational skills and the preparation of materials for incorporation into a larger project.

On completion of the Unit the candidate should be able to:

1. Prepare creative solutions for implementation using a vector drawing package.
2. Produce designs using vector graphics.
3. Use advanced operations of a vector drawing package.
4. Control colour and graphic elements in a design solution.

Developing Data Driven Applications (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to provide candidates with the knowledge and/or skills in the development of applications that use database connectivity for the provision and control of data elements. Candidates should gain skills in the construction of databases and their associated client applications.

On completion of the Unit the candidate should be able to:

1. Design and develop a client application for database connectivity.
2. Design and implement a relational database for use with an application.
3. Implement scripts to manipulate databases.
4. Test the completed product.

Scripting for Interactivity (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to develop candidates' skills in designing and developing interactive multimedia applications using the scripting elements of a multimedia authoring tool.

On completion of the Unit the candidate should be able to:

1. Select a multimedia authoring tool for a script driven application.
2. Develop a system specification and detailed design for a script-driven multimedia application.
3. Use the scripting facilities of a multimedia authoring tool to implement interactivity
4. Test the completed product.

2D Digital Imaging and Animation (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to enable candidates to plan for and create artwork for animation in a 2D software environment.

On completion of this Unit candidates should be able to:

1. Plan a 2D Digital Animation Sequence
2. Create 2D Digital Artwork for an Animation
3. Create a 2D Digital Animation

Interactive Multimedia Creation: Group Award Graded Unit 2 (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
Type of Group Award Graded Unit: Project
Assessment Instrument: Practical assignment

User Interface: Testing and Evaluation (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to provide candidates with the knowledge and skills to test and implement the user interfaces of multimedia software products.

On completion of the Unit the candidate should be able to:

1. Describe the core concepts of Usability Engineering.
2. Create a user interface to a brief.
3. Apply the core concepts of usability engineering to test a user interface.
4. Evaluate the usability engineering process and techniques utilised in testing a user interface.

Project Management (1 HN Credit = 4 ECTS = 8 Scotcat Credits)
This Unit is designed to develop a broad general knowledge and understanding of the theoretical concepts, principles, boundaries and scope of project management. The Unit provides candidates with the underpinning knowledge required for progression in training and education in project management. This Unit should also provide candidates with the broad background knowledge of project management required for working in a project team. The Unit is primarily intended for candidates in the computing sector, however, it may be used for disciplines where projects are undertaken, as required by modern management. The Unit would also be relevant to candidates with appropriate work experience who hold positions such as team leaders or team members.

On completion of the Unit candidates should be able to:

1. Establish organisational and individual factors influencing project development
2. Plan project development work
3. Schedule project development work, using Project Management software, to meet client needs
4. Estimate costs of project development using project management software

Professional Issues in Computing (2 HN Credits = 8 ECTS = 16 Scotcat Credits)
This Unit is designed to provide candidates with an extensive understanding of the context within which they will work as a computing professional. The Unit will provide candidates with a broad knowledge of the ethical, social and legal aspects of professional computing environments. This Unit is primarily intended for candidates who propose to follow a career, or are following a career, as computing professionals and who require an understanding of the professional responsibilities of such employment.

On completion of this Unit the candidate should be able to:

1. Discuss the role of professional institutions in computing
2. Describe the legislation that applies to the computing profession
3. Explain the major codes of conduct in the computing profession
4. Explain the meaning and importance of intellectual property for the computing profession
5. Demonstrate an awareness of the application of ethics to the computing profession

Learning Agreement

ACADEMIC YEAR 200_/200_ - FIELD OF STUDY:

Name of student: .....

Sending institution: ..... Country: .....

Study period from:..... .....to: .....

DETAILS OF THE PROPOSED STUDY PROGRAMME ABROAD/LEARNING AGREEMENT

Receiving institution: ..... Country: .....

Course unit code (if any) and page no. of the information package	Course unit title (as indicated in the information package)	Number of ECTS credits

Student's Signature ..... Date: .....

SENDING INSTITUTION
We confirm that the proposed programme of study/learning agreement is approved.

Departmental co-ordinator's signature: *Institutional co-ordinator's signature:*

....

Date: ..... Date: .....

RECEIVING INSTITUTION
We confirm that this proposed programme of study/learning agreement is approved

Departmental co-ordinator's signature: *Institutional co-ordinator's signature:*

....

Date: ..... Date: .....

Name of student: .....

Sending institution: ..... Country: .....

CHANGES TO ORIGINAL PROPOSED STUDY PROGRAMME/LEARNING AGREEMENT
(to be filled in ONLY if appropiate)

Course unit code (if any) and page no. of the information package	Course unit titl (as indicated in the information package)	Deleted Course Unit	Added Course Unit	Number of ECTS credits
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	

Student's Signature ..... Date: .....

SENDING INSTITUTION
We confirm that the proposed programme of study/learning agreement is approved.

Departmental co-ordinator's signature: *Institutional co-ordinator's signature:*

....

Date: ..... Date: .....

RECEIVING INSTITUTION
We confirm that this proposed programme of study/learning agreement is approved

Departmental co-ordinator's signature: *Institutional co-ordinator's signature:*

....

Date: ..... Date: .....

TRANSCRIPT OF RECORDS

NAME OF SENDING INSTITUTION: .....

Faculty/Department of: .....

ECTS department co-ordinator: .....

Telephone ..... Fax: .....

Email .....

NAME OF STUDENT ..... First name .....

Date and Place of Birth ..... Sex .....

Matriculation date ..... Matriculation Number .....

NAME OF RECEIVING INSTITUTION: .....

Faculty/Department of: .....

ECTS department co-ordinator: .....

Telephone ..... Fax: .....

Email .....

Course Unit Code (1)	Title of the course unit	Duration of course unit (2)	Local grade (3)	ECTS grade (4)	ECTS credits (5)
	to be continued on a separate sheet			Total	

Diploma/degree awarded: .....

Date: Signature of registrar/dean/administration officer:

....

NB: This document is not valid without the signature of the Registrar/Dean/ Administration Officer and the official stamp of the institution.

Stamp of institution:

(1) **Course unit code:**
Refer to the ECTS information Package

(2) **Duration of course unit:**
Y = 1 full academic year
1S = 1 semester 2S = 2 semesters
1T = 1 term/trimester 2T = 2 terms/trimesters

(3) **Description of the institutional grading system:**

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(4) ECTS grading scale:

ECTS Grade	% of successful students normally achieving the grade	Definition (only of failing grades)
A	10	
B	25	
C	30	
D	25	
E	10	
FX	-	FAIL – some more work required before the credit can be awarded
F	-	FAIL – considerable further work is required

(5) **ECTS credits:**
1 full academic year = 60 credits
1 semester = 30 credits
1 term/trimester = 20 credits