



MCAST

MQF Level 6

CA6-05-21

B.A.(Hons) in Interactive Media

Course Specification

Course Description

This degree prepares students to work in various sectors within the interactive media industry, mainly within the 3D and development departments. Students will be given a strong grounding in visual art and design principles, as well as visual design software. They will acquire diverse skills, such as, web and game development, 3D modelling, and interactive design. In their final year students will be encouraged to team up with those reading for the degree in Game Art and Visual Design, in order to develop games.

Programme Learning Outcomes

At the end of the programme the learner will be able to:

- 1. Research and investigate a broad range of historical and contemporary interactive media work and applications*
- 2. Synthesise a range of concepts, knowledge and skills relating to interactive media*
- 3. Apply complex theories to practical work situations in the interactive media industry*
- 4. Use a range of digital applications in the production of interactive media work.*

Entry Requirements

MCAST Advanced Diploma in Graphic Design and Interactive Media
or MCAST Advanced Diploma in Art and Design
or MCAST Advanced Diploma in Photography
or MCAST Advanced Diploma in Creative Media Production
or MCAST Advanced Diploma in IT (This entry requirement is limited only to the Multimedia Software Development stream and the Software Development stream)
or 2 A-Level passes and 2 I-Level passes Compulsory A-Level: Art, or Art and Design, or Computing, or equivalent;

Applicants may be asked to sit for an interview and/or present their portfolio

Current Approved Programme Structure

Unit Code	Unit Title	ECTS	Year
CAART-506-1510	Visual Communication	6	1
CAGMA-506-1501	Multidisciplinary Storytelling & Narratives	6	1
CAGDN-506-1504	Digital Media in Visual Arts	6	1
CAWEB-506-1504	Introduction to UI & UX Design	6	1
CAIMA-506-1501	Contextual Studies in Interactive Media	6	1
CAGDN-506-1503	New Media, Culture and Technologies	6	1
CAART-506-1507	Drawing I	6	1
CDKSK-503-1907	English I	3	1
CDKSK-503-1905	Critical Thinking I	3	1
Year 1 Elective Unit*		6	1
Year 1 Elective Unit*		6	1
CDKSK-503-1906	Critical Thinking II	3	2
CDKSK-503-1908	English II	3	2
CAGDN-506-1510	Design for Digital Application	6	2
CAGMA-506-1506	Character Design	6	2
CAART-506-1515	Critical Studies and Research Methods	6	2
CDKSK-604-1909	Entrepreneurship	4	2
CDKSK-602-2105	Community Social Responsibility	2	2
Year 2 Elective Unit*		6	2
Year 2 Elective Unit*		6	2
Year 2 Elective Unit*		6	2
Year 2 Elective Unit*		6	2
Year 2 Elective Unit*		6	2
CAGMA-506-1507	2D Animation	6	3
CAGMA-606-1509	Production Modelling	6	3
CAART-606-1524	Personal Style and Self Promotion	6	3
CAART-606-1633	Law and Ethics	6	3
Year 3 Elective Unit*		6	3
Year 3 Elective Unit*		6	3
Year 3 Elective Unit*		6	3
CAPRJ-606-1527	Interactive Design Open Project	6	3
CADIS-612-1501	Dissertation	12	3
Total ECVET/ECTS		180	/

* Learners are to choose one of the below Strands

Strand 1 - Game Development

Year 1 Elective Units:

Unit Code	Unit Title	ECTS	Year
CAWEB-506-1503	Introduction to Web Development	6	1
CAGDN-506-1501	Interactive Editorial Design	6	1

Year 2 Elective Units:

Unit Code	Unit Title	ECTS	Year
CAGMA-506-1604	Game Engines I	6	2
CAGMA-506-1514	Game Design	6	2
CAGMA-506-1508	3D Modelling Foundations	6	2
CAGMA-506-1502	Psychology of Play for Gaming	6	2
CAIMA-506-1502	Introduction to Artificial Intelligence	6	2

Year 3 Elective Units

Unit Code	Unit Title	ECTS	Year
CAGMA-606-1511	3D Rigging	6	3
CAGMA-606-1512	Animation for Games	6	3
CAIMA-606-1603	Game Engines 2	6	3

Strand 2 - Web Development

Year 1 Elective Units:

Unit Code	Unit Title	ECTS	Year
CAWEB-506-1503	Introduction to Web Development	6	1
CAGDN-506-1501	Interactive Editorial Design	6	1

Year 2 Elective Units:

Unit Code	Unit Title	ECTS	Year
CAIMA-506-1503	App Development for Mobile Devices	6	2
CAAMT-506-1501	Animation for Communication	6	2
CAGMA-506-1504	UI Design for Games	6	2
CASFT-506-1515	PHP & Databases I	6	2
CAAMT-506-2101	Compositing and Animation	6	2

Year 3 Elective Units

Unit Code	Unit Title	ECTS	Year
CASFT-606-2102	PHP & Databases II	6	3
CAGDN-606-1601	Sound and Image	6	3
CAIMA-606-1504	Interactive Object Design	6	3

CAART-506-1510 Visual Communication

Unit level (MQF): 5

Credits: 6

Unit description

The ability to communicate effectively through visual means is one of the basic skills for anyone working within the fields of both Fine Art and Game Design. This unit aims to give learners the opportunity to acquire knowledge and understanding of the way visual media and the formal visual elements of line, space, shape, form, colour, value and texture can be manipulated to communicate ideas. Learners are asked to apply their understanding to the creation of their own body of work, making use of a range of fine art media, and exploring material and formal properties.

In this unit, learners will not be given specific instruction in individual media as this will be provided in other units. Learners will develop the competence to generate, select and develop ideas as well as gaining understanding of the complex relationship between thinking and making.

The unit will culminate in a self-directed project where learners respond creatively to a given brief and will then have the opportunity to present it to an audience. Evaluation of the audience response and of the effectiveness of the work will form the last part of the unit.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Analyse works of art to identify mechanisms of visual communication.*
- 2. Generate, select and develop ideas in response to a given brief.*
- 3. Organise formal visual elements in own work to communicate ideas to an audience.*
- 4. Manipulate media and materials in own work to communicate ideas to an audience.*

CAGMA-506-1501 Multidisciplinary Storytelling & Narratives

Unit level (MQF): 5

Credits: 6

Unit description

This unit considers the importance of narrative and storytelling in multimedia and art. Starting with an appreciation of traditional storytelling techniques, the unit content will go on to develop an understanding of how narrative techniques have developed over the years within literature, art, films and games. Narrative and interactive storytelling structures are now a key element in many art forms and media especially games and genres supporting player/viewer immersion.

The unit provides learners with the opportunity to develop knowledge and skills in storytelling and narrative structures and elements within contemporary media. This will involve critically analysing different approaches taken within a range of media. The unit will introduce learners to the creative process of writing a narrative brief for a short sequence and using this as a basis to develop a narrative sequence prototype supported by a portfolio of evidence including storyboards and flowcharts.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Describe the historical relevance of storytelling techniques and the effect narrative has on the viewer in multimedia and art.*
- 2. Identify narrative techniques, mechanics, structure and elements within a selection of media and interactive Story Telling techniques.*
- 3. Create a brief for a short narrative related to a medium of own choice.*
- 4. Produce a visual prototype of own created short narrative sequence brief, evaluating critically the narrative sequences and its structure.*

CAGDN-506-1504 Digital Media in Visual Arts

Unit level (MQF): 5

Credits: 6

Unit description

In this unit learners will be introduced to a range of digital media and post production software used by journalists for different aspects of their work. Learners will have the possibility to grasp the knowledge and skills required to use such software effectively in their job as media practitioners.

Therefore, learners will become familiar with a range of tools and techniques of the various digital media production software used today. Firstly, learners will research and understand the essential technical aspects of working with digital media. Then learners will learn the correct digital file management and development of a media project.

Learners will apply tools and techniques using video editing, image editing and design software to produce a body of work presented in different formats. This unit will act as an introduction to these programs, thus learners will become competent with the basic tools and techniques of each software program.

Finally, learners are to utilize each software program learnt to produce work for a specific media project. Then learners will present their final outcomes in an appropriate manner. In addition, learners will evaluate their own final outcomes as well as their use of digital media software to produce a specific media project.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Understand the technical aspects of working with digital media.*
- 2. Understand the main principles of using post production tools and techniques using image editing and design software.*
- 3. Apply post production tools and techniques using video editing, image editing and design software as required to complete your own media project.*
- 4. Present own work to a given audience and evaluate methods of improvement.*

CAWEB-506-1504 Introduction to User Interface & User Experience Design

Unit level (MQF): 5

Credits: 6

Unit description

The aim of this unit is to introduce learners to the ever-changing concepts and theories of User Interface and User Experience Design. For starters, the learners will begin with the basic theories and concept in this field such as Layout, Visual Design, Branding, Wireframes, Usability Testing, User Research and User Stories and how to achieve them respectively.

Learners will examine a diversified portfolio of work, ranging from different platforms where UI/UX design is applied. These various examples of interfaces will be broken down into different case studies in order to understand better the concepts behind the creation of such experience designs. Elements in the design such as layout and visual design will be given a purpose while the experience of the user will be further discussed in relation of user research and user journey. Product Research will provide the learners with the ability to create good sound designs. Then basing on the results from the product research the learners will create Personas and Scenarios that will reflect the user group for whom they are designing.

The learner will then proceed to combine the concepts learned for both UI/UX together into a concept of their own. Starting off with sketches of layout designs which will then be translated into wireframes where the flow (UX) of the interface can be decided. The learner will then proceed to finalize the design on their software of preference (Sketch, Invision, Adobe Experience, Adobe Illustrator, Adobe Photoshop). The renders of the final design can be animated using the mentioned software for a better understanding of the User Experience as a final prototype.

Once the UI/UX concept is completed, the learner will evaluate the design through various methods of usability testing and experience walkthroughs in order to determine the effectiveness of their final design. This might lead to refinements in the design as deemed necessary.

Learning Outcomes

On completion of this unit the learner will be able to:

1. *Understand the basic concepts and theories involving UI and UX Design.*
2. *Prepare and build experience interfaces that are intuitive, pleasant and flowing.*
3. *Produce a prototype example that illustrates both UI and UX concepts.*
4. *Evaluate the created UI and UX Interface viability.*

CAGDN-506-1510 Design for Digital Application

Unit level (MQF): 5

Credits: 6

Unit description

The purpose for this unit is to introduce learners to Design for Digital Application. The aim is to bridge the gap between the physical side of design which gives a more tactile experience together with a digital experience in the form of an application. Focusing on particular brands that made this adaptation for the screen we can establish patterns and techniques that can then be implemented. Also, important key designers and projects that exploited digital technology will be discussed in order to underline the importance of the unique experiences created.

A number of examples will be tackled with particular focus on how something tactile can evolve into something digital such as a Mobile Application, mainly to understand how a Graphic Designer works and liaises with Web Designers/Developers. The examples chosen will highlight key factors that will enable the learner to further understand the concepts and theories that are being implemented. Whilst looking at the transition that can be made from tactile to digital, it is pivotal to understand the differences between print and screen content such as typography, colour and sizes and how they translate from one to the other.

Hence this unit will equip the learners with the tools necessary to create a concept of their liking, where they will translate something that has a tactile experience into a digital experience, in the form of an application which can also be a website. The fulcrum of the concept will boil down to the level of interactivity that the learner will put into his respective concept. Few of the interactive elements that can be included in the concepts are: Flash rollover, hot spots and parallax.

Once the final concept is completed, that is renders or animated UI mock ups, the learner will evaluate the design through various methods of usability testing and experience walkthroughs, in order to determine the effectiveness of their final design. This might lead to refinements in the design as necessary.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Understand basic concepts and theories surrounding Design for Digital Application.*
- 2. Prepare and evolve a tactile experience into a digital experience.*
- 3. Produce a digital prototype example that illustrates the transition from tactile to digital.*
- 4. Evaluate the created prototype experience application refining if necessary.*

CAIMA-506-1501 Contextual Studies in Interactive Media

Unit level (MQF): 5

Credits: 6

Unit description

Contextual Studies is a theoretical unit that enables learners to locate their own design practice in historical and social contexts. The evolution of design practice will be explored with reference to key events, significant figures and tendencies in the history of Graphic Design and Interactive Media.

Lectures which provide introductions to the content of each aspect of the course will be accompanied by seminars, workshops, discussions and screenings, which will enable learners to consider historical developments in relation to contemporary design practice, and their own work.

The unit compliments the practical, visual components of the HD Interactive Media course by providing an arena where relevant contemporary issues can be discussed in relation to historical developments. It aims to underpin and enrich the learner's visual practice by providing a secure grounding in key discourses in the evolution of design. The analysis of specific design examples will be an important focal point, and the unit aims to deepen learners' understanding of formal visual language through close examination of historical and contemporary design practice.

Tasks which are set throughout the unit are intended to deepen learners' independent research skills.

The unit is assessed through learners' responses to 3 projects:-

1. A Reflective Research Portfolio which contains responses to tasks and evidence of learners' own research.
2. A group presentation focusing on the social issues arising from graphic design & Interactive Design practice.
3. A visual case study/report on the work of one designer which locates it in a movement or tendency, and which contextualises the movement in relation to wider social events.

Learning Outcomes

On completion of this unit the student will be able to

1. Present written and visual evidence of independent research into historical developments in graphic design and interactive media.
2. Collaborate with others to analyse historical graphic design practice in contemporary social contexts.

3. Demonstrate in a visual case study an understanding of how Graphic visual language and interactivity communicates meaning.
4. Communicate in writing a historically informed understanding of social issues arising from contemporary graphic design and interactive media practice.

CAWEB-506-1503 Introduction to Web Development

Unit level (MQF): 5

Credits: 6

Unit description

This unit will provide the learner with the core technical knowledge needed to design and program a web application for a client such as a small business. The technologies identified in this unit are correct at the time of writing, but may be updated if significant new technology releases occur in the interim.

This unit will provide learners with the knowledge and practical experience they need to build and manage professional websites using the latest HTML and CSS mark-up, which can be implemented in future-rich web browsers on iPhones, Android Phones and WebOS Phones, thereby allowing learners to design and build websites that surpass desktop equivalents.

This unit is relevant to learners who have a basic level of competence in HTML and CSS, and wish to further develop their knowledge of web application development using HTML and CSS as tools to provide solutions to website design for both desktop and mobile devices.

Learners will begin by reviewing the key principles of good web design in relation to a number of objectives including market analysis and information architecture. Learners will then design a web application for use on a range of different platforms, which will require them to be confident in carrying out more advanced design techniques which addresses current accessibility guidelines. Using validation tools to test the web application, learners will then make recommendations for the future development of their product.

By the end of the unit learners should have the underpinning knowledge and understanding to develop accessible web applications for both desktop and mobile devices.

Learning Outcomes

On completion of this unit the student will be able to:

1. Explain the principles of good website planning including target market, website objectives, navigation solutions, site structure, user interface and viewing platforms.
2. Produce a design specification for a web application to a given brief.
3. Implement a web-standards compliant web application to a given brief.
4. Appropriately test and review a web application.

CAGMA-506-1506 Character Design

Unit level (MQF): 5

Credits: 6

Unit description

In the world of character designing one must start by understanding the principles of character generation through research and practice. To improve their abilities and knowledge learners will go through a series of analysis of other popular international artists' artwork. Thus this adds to them more knowledge on constructive criticism. Understanding and appreciate others work is crucial for every artist to develop his/her abilities and own character.

In this unit learners will have the opportunity to explore approaches relevant to the creation of successful character designs which can be applied to games. Learners will have the opportunity to become aware of a variety of character creation challenges which will give them the opportunity to practice multiple skills. Learners will explore 2D and if possible, also 3D media, become more practical in handling traditional and digital tools, as well as researching styles and influences.

Finally, learners will learn how to produce a character design prototype which meets professional standards. In addition to this learner will also develop the ability to achieve increasingly unique concepts as well as independently assess the quality of their own work by producing a portfolio with a reflection statement. The portfolio should consist all development of the character brought forward; from the beginning till the final stages. While the reflection statement should show the improvement of the learner throughout the unit; this time, academically. In the reflection statement, the learner should include both content list and a Bibliography. This exercise should definitely improve their way in analysing their own work compared with others.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Outline the history of character generation for games and the foundational approaches to creating compelling, unique characters.*
- 2. Understand the fundamental principles, proportion and structure of character design and styles.*
- 3. Create the design of a character according to a given script.*
- 4. Produce and evaluate a finished character design up to professional standards.*

CAGDN-506-1503 New Media, Culture and Technologies

Unit level (MQF): 5

Credits: 6

Unit description

The world of Graphic Design evolves constantly due to rapid development in Science and technology, Culture and Social Changes as well as introduction of New Media and Materials. Only recently has Graphic Design passed through a great shift with the introduction of screen media, which drastically have changed the way we look at visual communication, and even initiating discussions and debates on whether this change will bring about the death of print.

From the invention of paper, to the introduction of the printing press, to the use of screen and interactivity, great steps in technology have brought about different disciplines, surfaces, materials, software, technologies and other advances that one has to consider in this line of work. As a graphic designer, keeping up to date with development and new technologies is essential in order to keep in line with the market as well as in touch with the consumer, viewer or even the partaker in today's interactive world.

This unit is intended for delivery as part of a group award or may alternatively be delivered on a stand-alone basis. The unit has a practical outcome and may be linked to work experience or simulation. It is intended to allow the learner to research, develop and apply theoretical and practical knowledge of new media, culture and technologies in the analysis and application of research, development, resolution and evaluation of a self-initiated project brief. Through this unit learners will; explore current new media technologies and their cultural contexts within a chosen specialism such as: mobile app, web design, digital culture, gaming, online industries and communities, publishing and new technology, social networks and affinity spaces, the born digital audience and digital convergence etc. Through proactive activity learners will; investigate, evaluate and select new media technologies and their cultural contexts for a self-initiated project within their chosen specialism. They will prepare, plan and produce a practical new media project in which they are to explore unfamiliar waters giving them the opportunity to acquire new skills in new media and technology.

Furthermore, the unit allows learners to use relevant design processes and job flows to develop a range of creative solutions based upon vocationally relevant background research. The unit also provides the opportunity for learners to prototype and deploy their practical activity to a selected audience. The unit concludes by learners undertaking critical evaluation of the effectiveness of the technologies used in their project, its cultural contexts and its overall effectiveness and audience reaction.

Learning Outcomes

On completion of this unit the student will be able to:

- 1. Explain current new media technologies and their cultural contexts within a chosen specialism.*
- 2. Plan and prepare a self-initiated new media project.*
- 3. Produce and prototype a self-initiated new media project.*
- 4. Evaluate the use of new media technology and the cultural context of the final outcome*

CAART-506-1515 Critical Studies and Research Methods

Unit level (MQF): 5

Credits: 6

Unit description

The unit is intended for use in a range of creative arts programmes and has both theoretical and practical outcomes in the form of personal research activity and the production of a proposal for a degree year dissertation.

The unit provides an overview of research theory and methodology, including primary, secondary, qualitative, and quantitative and practice led research methods. In addition to providing practical instruction on writing research proposals.

This unit also provide the learners with skills to critically analyse research findings and also see the differences between descriptive and critical writing as well as the accepted academic formats for writing essays, papers and reports using accepted academic referencing and citation systems.

In this unit, based upon lectures which present relevant content related to the creative arts theoretical contexts, learners will prepare and undertake practical activity in the preparation of a proposal for a vocationally relevant research study. Which will comprise of a planned literature review and the use of vocationally relevant methods to undertake primary research.

Learners will also undertake critical analysis of research findings and prepare written work to an accepted academic format using accepted citation and referencing. The work of the unit culminates in learners undertaking an individual self-evaluation of the effectiveness of their research processes and activity.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Organize the research gathered using research theory, methodology and practice led research for a potential dissertation topic*
- 2. Analyse critically the findings from own research and present it in an appropriate format.*
- 3. Produce in given format the research proposals in academic writing style using accepted academic referencing and citation systems.*
- 4. Present orally and in writing the final proposal for a vocationally relevant research study within own area of interest in the creative arts.*

CAAMT-506-1501 Animation for Communication

Unit level (MQF): 5

Credits: 6

Unit description

Ways and mean of artistically depicting and recording a story has been evident since the beginning of man, with symbols and drawings depicting a story in caves, to having stories carved or drawn onto Vases in Greek, illustrations and prints in books, to the advance of technology where image has taken a new dimension: time. Animation has become an even larger niche in the area of graphic design; with the advance in technology, more screen based media is taking life.

Since the Dotcom revolution, the growth of virtual businesses and Internet commerce has exploded and continues to expand. The demand for visual assets to illustrate these virtual enterprises is increasing every year. With the advent of Smart technologies and touch screen devices, consumers are demanding more and more sophisticated forms of user interface design from the virtual world. Businesses require exciting interactive interfaces to meet the needs of increased traffic and growing consumer awareness Artists and designers are developing new approaches to using interactivity whilst combining different styles of media-based imagery.

This unit will give the opportunity for learners to develop skills and understanding in a variety of narrative animation techniques, as well as animations for interactive design, for use in art and design.

In this unit learners have the opportunity to explore the concepts of animation and how it could be applied in a range of contexts. Learners should explore the potential and the role that animation plays in developing art and design products in a commercial, independent or learning environment. Working with both 2D and 3D software, learners will produce digital animation work that communicates a concept, idea or commercial endeavor. Interactive Design plays a very important role in our day to day activity, with more graphic design needed in screen and interactive platform, more animated and design elements with relation to screen and interactivity is needed. Animated interactive applications are designed to bring to life choices for users and to give them a degree of control over how they interact with different environments, objects, people and circumstances. Imagination and creativity should be balanced proportionally with the technical requirements of being able to produce work effectively in any of these areas. Learners' work should be exploratory and reference contemporary practice within the industry.

Learning Outcomes

On completion of this unit a learner will be able to:

1. *Understand and review animation techniques and interactive design concepts that communicate.*
2. *Produce 2D animation work on a professional platform, to industry standards.*
3. *Produce 3D animation work on a professional platform, to industry standards.*
4. *Produce Interactive work on a professional platform.*

CAGMA-506-1504 UI Design for Games

Unit level (MQF): 5

Credits: 6

Unit description

The purpose of this unit is to understand and apply the principles of design in the context of developing User Interfaces for computer games. Learners will begin with the basics of User Interface design, including such topics as layout issues, typographical concerns, and the proper use of colour in the design.

A variety of user interfaces will be examined, with respect to the variety of platforms on which games are played, from laptop and desktop computers to mobile devices such as tablets and phones. The principles of user interaction will be explored, including concepts such as gestural interfaces, and experiential design. Actual examples of user interfaces will be examined with these principles in mind.

The learner will study prototyping techniques from low-fidelity sketches to concrete UI prototypes produced using specialist software. This will culminate in the learner being assessed on their production of a User Interface design prototype for a computer game. This design should embody the principles of User Interface design as covered previously.

Once the User Interface design is completed, the learner will ensure that the interface is logical, intuitive and clear, by undertaking an evaluation of the design, employing such techniques as Usability Testing or cognitive walkthroughs, to determine the effectiveness of their design, and refining it where necessary.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Explain basic concepts of User Interface design.*
- 2. Evaluate different user interfaces for a variety of games and applications across a number of different platforms.*
- 3. Create a user interface prototype.*
- 4. Evaluate the usability of the interface.*

CAGMA-506-1502 Psychology of Play for Gaming

Unit level (MQF): 5

Credits: 6

Unit description

The purpose of this unit is to gain insight into the psychological concepts related to play and player experience. Learners will study the various definitions of play, the basic concepts of psychology and then specifically focus on psychological concepts which have been applied to play and gaming throughout the years. These theories will then inform the students' design of a mini game, which will be tested on a number of players.

First, the learners will cover various definitions of *game* and *play*. Particular emphasis will be placed on how the definitions of play in themselves incorporate various elements of psychology. Learners will also grasp the basic concepts and aims of psychology, and will be introduced to a number of psychological studies done on games and players.

Learners will then go on to study a number of play related psychological concepts which have been vastly studied in relation to games, such as immersion, flow, presence, self-presence, motivation & reward, mental models and cognitive strategies. User navigational patterns could be investigated, as well as ideas of cognitive load, user expectations, feedback, and multiple intelligences. Gameplay psychology will be related to the learner in a way that could potentially relate to their life, education, and creative endeavours.

The theoretical foundations of the unit are then put into practice in the second half of the unit. Learners will first utilize a psychological concept of their choice and analyse their use in the formal elements of games. Furthermore, they will have the opportunity to observe how elements of play can have possible long lasting effects on a player's cognitive development.

Finally, learners will have the opportunity to design a mini-game that is informed by psychological concepts mentioned in class. Although learners are not expected to perform a psychological study on the players through the game created, they will have the opportunity to interview the players to witness how the planned techniques have been experienced by the players.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Describe essential elements and concepts of play and psychology.*
- 2. Explain psychological theories related to gameplay.*
- 3. Analyse psychological concepts in the design of games and player experience.*
- 4. Design & evaluate a game informed by psychological concepts and collect feedback.*

CAGMA-506-1507 2D Animation

Unit level (MQF): 5

Credits: 6

Unit description

Encompassing various artistic fields used across different media, animation is the medium of expression and communication that enables artists to combine various disciplines into a unique and possibly interactive art form. 2D Animation can be as intimate and personal as a stick figure at the corner of a flipbook, or as expensive and public as animated laser lights splashed upon a cityscape.

Building on the artistic skills gained in previous units, this content is designed to introduce the learner to the knowledge and skills involved in the design and production of two-dimensional computer animation.

They will gain a basis on its fundamental principles and techniques, along with a basic outline of the relationship between cell and computer-generated animation. Following a careful collection of visual references detailing character style and motion, the learner will pursue the creation of 2D animations for use in games. They will correctly design and construct two-dimensional resources within a current software program, and carefully test the outcome on the target medium.

Learning Outcomes

On completion of the Unit learners should be able to:

- 1. Explain the basic principles of current 2D animation styles and techniques.*
- 2. Produce visual references for the creation of a complex character or object animation.*
- 3. Produce complex animations for use in a commercial game.*
- 4. Assess own final product through a visual demonstration.*

CAIMA-506-1502 Introduction to Artificial Intelligence

Unit level (MQF): 5

Credits: 6

Unit description

Artificial Intelligence (AI) has become a specialty within the realms of computer science. Mobile devices such as smart phones and tablets have provided a platform for constant communication where intelligent assistance is expected for both simplistic and complex tasks. Already the idea of the ‘virtual assistant’ has been implemented; Siri, a voice activated component of the iPhone/iPad, is an early example of an integrated AI ‘being’ who can assist with questions asked by the user. However, this type of technology is still in its infancy and has vast untapped potential. The possibility of using AI to add a ‘smart layer’ to hardware devices that are currently being tried and tested is an exciting prospect; for example, Google’s glasses currently make use of Augmented Reality using existing applications and functions. However, missing from this development is the embedding of AI to maximise the potential of the glasses in the provision of more information and customisable options.

The role of AI in accomplishing tasks on mobile devices and within games is worthy of study as it is an area which will continue to develop and provide consumers with ever more solutions to their needs. This unit has been designed to enable the learner to gain knowledge of the role of AI within computer games and mobile applications. The learner will undertake research into current and emerging applications or games using AI and gain an understanding of their functionality and future potential. Since finding a solution is easier when working with others, the learner will have the opportunity to work as part of a small team with 3 or 4 of their peers. This teamwork involves the learners planning a strategy for implementing an intelligent component of a computer game or mobile application.

Following this, each learner will be able to critically evaluate their team plan and the efficacy of the teamwork including participating in a peer evaluation for each member of the team. This unit is intended for learners who are proposing to follow a career in the computer games or mobile technology industries. The impact that smart mobile applications will have for the world in the future will be immense therefore, this should be an exciting subject for the learner to investigate.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Discuss the importance of Artificial Intelligence in Interactive Media products.*
2. *Construct documentation for the development of a simple AI agent.*
3. *Apply basic algorithms to simulate AI behavior.*
4. *Appraise the developed AI strategy for its efficacy at solving identified problems.*

CAGMA-606-1509 Production Modelling

Unit level (MQF): 5

Credits: 6

Unit description

Environment design and production is a more varied and prolific core aspect of commercial games and interactive media activity than ever before. As hardware and software capabilities and features continue to push boundaries of expectation and possibility exponentially it becomes ever more crucial to ensure that an increasingly high standard of new entrants are delivered to industry with a healthy balance of creative and technical skills.

As any experienced 3D professional will acknowledge as, if not more important to the likely hood of success in this industry is a confidence in communication skills and the ability to accurately identify and interpret a clients' requirements and expectations as well as the skills required to negotiate these.

All of the skills and application of knowledge involved take time to learn and practice. This unit has been developed to provide candidates with a safe learning environment that straddles education and industry practice so that they can begin their journey in honing these skills such that it should provide potential for a gradual transition to professional practice whilst also developing specialist skills.

Technically and creatively this is a very broad specialism. Whilst this unit provides an opportunity for learners to explore and further develop their practice in a manner tempered, to an extent, their own individual approach to balancing design and production it is intended mainly to provide them with an opportunity to develop or add to fundamental modelling, texturing, and lighting skillset in a manner focused on their clients' needs as priority over their own personal ambitions.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Understand a variety of processes and software that can be utilized to create 3D environment assets for game engines including key approaches to creating geometry, uv layout, texturing, and lighting.*
- 2. Liaise with a client demonstrating ability to accurately interpret a given brief or game design document through application of research, idea generation and development leading to client sign off of proposed developed environment design solutions.*

3. *Demonstrate skills required to apply this knowledge and understanding by creating appropriate textured and lit models economically in response to a game design document.*
4. *Present outcomes to client with working interactive prototype using open-source game engine or equivalent engine provided by client.*

CAGMA-506-1604 Game Engines I

Unit level (MQF): 5

Credits: 6

Unit description

Throughout the development of this introductory unit, learners will acquire hands-on experience in the creation, prototyping and release of 2D and 3D games on computers and mobile devices.

Using one of various game engines available on the market, learners will gain knowledge on the specifications and resources required to create a commercial game.

Learners will be encouraged to explore a variety of 2D and 3D engines on the market, to familiarize with the common tools and components available in the industry. These features may include level editors, scripting methods, cinematic tools, manipulation tools, and User Interface tools. With the necessary knowledge in place, the learner should then be encouraged to create various game prototypes with the intent of exploring a game engine's toolset. These projects should help the learner identify reusable code and game assets where appropriate and explore innovative approaches to game mechanics.

Once the process is defined, the learners should undertake the development of a functional game or level to maximize the learners' output and experience, this unit should be linked with other game-related units, particularly: Game Design, Psychology of Play for Gaming, 3D Modelling Foundations, and Artificial Intelligence for Interactive Media.

Learning Outcomes

On completion of this unit the student will be able to

1. *Conduct research about the use of game engines in real-world projects.*
2. *Prepare workspace and assets for game development.*
3. *Assemble a game level using standard tools within a game editor.*
4. *Build and deploy a game project to a chosen platform.*

CAART-606-1524 Personal Style and Self Promotion

Unit level (MQF): 6

Credits: 6

Unit description

Understanding personal style and developing a self-promoting image is fundamental to anyone who aspires to work in the creative arts sector. It is easy to rest in the safety of a familiar style and such a unit will inspire learners to push their boundaries, leave their comfort zone and develop new styles of work with a range of different media, then use these to design a campaign of self-promotion across a range of platforms.

This is a practical unit that enables learners to explore a personal response to different styles using a wide range of media in a wide range of outcomes that culminate in a body of work that serves as a self-promotional tool and promotes the learner within the creative arts sector by helping him/her build a broad skill set. Learners will have the possibility to achieve the latter through research, experimentation with different media and also the development of their own self-image. The unit also aims to develop skills to communicate a personal style and explore ways of creating a self-promotional tool and portfolio of work.

The unit compliments the visual components of the course by creating a vehicle in which to showcase work and act as a portal to the learners' self-image. Throughout their courses, learners should already have investigated a specialism with an individual style of expression and visual outcomes. Learners will explore a broad range of media to communicate a range of messages in a contemporary context. Learners will be encouraged to experiment and explore the limits of their preconceived notions and their abilities. Contemporary styles in visual communication will be seen in context and learners will be encouraged to work towards their continuous progression in the understanding of their own self-image.

Learner's preconceived ideas about their personal style should be challenged. In a world where new forms of communication constantly change and where a sophisticated audience demands new approaches, the development of personal style should be seen as a continuous activity. It is important that learners experiment with different media both in print and digital to test their enthusiasm for a particular style.

By the end of this unit, learners would have produced a sequential portfolio of work that demonstrates a willingness to experiment with different media and develop the promotion of their own identity as someone working within the very competitive creative arts sectors. Learners should also test their own convictions in the style they lean towards and in their ability to use it to communicate a wide range of messages to different audiences.

Learning Outcomes

On completion of this unit the learner will be able to:

1. *Research the historical origins of a chosen personal style applied to a contemporary context.*
2. *Select a specialized medium or media to create a self-initiated project in a contemporary context.*
3. *Determine own identity and personal visual style when creating self-promotional material.*
4. *Compile a professional portfolio of work specific to a chosen career path in the creative arts industry.*

CAART-606-1633 Law and Ethics

Unit level (MQF): 6

Credits: 6

Unit Description

In this unit learners will have a first approach to law and ethics and to their applications to art and communication.

They will have the opportunity to have a sight of what is law, what are juridical systems, how to compare them and what are their historical roots. They will be guided into juridical concepts like “rule of law”, “right” and “source”.

They will then apply the juridical approach to their activity. They will learn how their activity can be labelled from a juridical point of view, then work on the right of expression and its juridical and factual limitations. Then they will work on copyright and defamation.

In addition to this, learners will have the occasion to approach ethics. They will work on some ethical concepts like “good” and “bad”, “right” and “wrong” as well as approach some ethical systems. Thus learners will realize how one can know or decide that something is good or bad and focus on some contemporary ethical issues.

Moreover, learners will also apply the ethical approach to their activity. They will explore their personal ethical system and discover their inner values, working on them and also on the influence that ego and emotions have on them. Finally, learners will then identify possible ethical issues in their activity and in team working.

Learning Outcomes

On completion of this unit the learner will be able to:

1. *Understand what is a juridical point of view in relation to work in the different sectors of the creative arts.*
2. *Understand the definition of an ethical point of view in relation to various areas of the creative arts.*
3. *Identify possible juridical problems related to own area in creative media.*
4. *Choose which ethical approach to use in relation to own creative media area.*

CAAMT-506-2101 Composting & Animation

Unit level (MQF): 5

Credits: 6

Unit Description

This unit is designed to provide the learner with the knowledge and skills involved in the design and production of animation using 2D digital software. This unit would be suitable for learners wishing to develop a competence in the design, creation and production of 2d animation techniques for narrative as well as the design, creation and production of animation for interactive platforms e.g. interactive game, interactive presentation, application, interactive infographic etc.

The learner will begin by understanding the relationship between cell animation and computer generated animation, the basic principles of current animation drawing styles and the basic animation techniques, to key framing and composting.

The learner will gain a knowledge and understanding of narrative in the form of concepts and storyboards in colour to the correct specifications, and demonstrate drawing styles and techniques using both traditional as well as digital media.

The learner will correctly design and construct composition and animation within a current software program.

Animations will be accurately tested and saved to the correct file format for the specified requirements.

Finally, learners should have the underpinning knowledge and understanding of composition and animation techniques to create 2D animations to a given design brief.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Research 2D Animation Techniques.*
- 2. Develop Concepts, Storyboards and assets for 2D Animation.*
- 3. Create 2D Animation Sequence to a given brief.*
- 4. Produce 2D Animation for interactivity.*

CAGMA-606-1511 3D Rigging

Unit level (MQF): 6

Credits: 6

Unit Description

Character rigging is a highly technical process. No 3D character, for whichever platform can be brought to life without it. There are crucial conventions that must be followed to achieve good results. Whether choosing to be a 3D generalist or a specialist rigger, the level of knowledge and understanding concerning the character rigging process and application that will be developed from undertaking this unit will provide a strong starting point with an understanding of the principles of 3D Rigging and Animation that can be transferred to aid a working knowledge of 3D character rigs of a variety of complexities.

This unit provides a solid foundation in character rigging skills from design concept to the development and construction of a digital 3D model which applies the correct use of rigging, ready for animation. On completion of the unit the learners should not only be able to reproduce this learning, but also be aware of and understand the reasons why these systems and techniques work the way they do.

This provides the potential to adapt and refine the techniques flexibly to suit a wide range of 3D character rigging requirements for animation.

Learning Outcomes

On completion of this unit the student will be able to

1. *Describe the animation design and production pipeline.*
2. *Develop a concept for a simple 3D animation in response to own interpretation of a given brief.*
3. *Produce a simple rendered character animation using an independently created rig.*
4. *Evaluate and discuss the effectiveness of the rig used.*

CAART-506-1507 Drawing I

Unit level (MQF): 6

Credits: 6

Unit Description

This unit provides learners with the opportunity to explore drawing concepts and techniques with the aim of encouraging the development of a personal visual language of drawing. Learners will start practicing observational drawing techniques and will explore aspects such as perspective, composition, and mark making. They will be required to draw from various subject matter and will be encouraged to experiment with approaches to drawing and the use of drawing media. The unit will cover some of the various uses of the medium: drawing as a way of exploring ideas and of gathering information about a subject; a means of producing preparatory work; a medium which may be used to produce finished works of art.

Learners should also complete a personal project and are therefore required to develop a personal approach to drawing via the completion of a coherent body of work. Learners will be required to set their own aims, to evolve a technical means to achieve them and to evaluate the success of their approach both during the project and after completion.

Learning outcomes

On completion of the unit students will be able to:

- 1. Use a variety of drawing techniques and media in response to a given subject matter.*
- 2. Produce landscape drawings showing effective use of linear perspective and aspects of composition.*
- 3. Investigate a subject matter of own choice to develop an independent work of art.*
- 4. Present own work for constructive criticism and evaluation by own self and peers.*

CAPRJ-606-1527 Interactive Design Open Project

Unit level (MQF): 6

Credits: 6

Unit Description

Interactive Design has become a term that contains a plethora of creative computing areas that combine visuals and information through interaction. When learners transition to employees, they might find themselves working in a particular area of Interactive Design such as: interactive advertising, web design, UX and UI, front-end or back-end development, animation and game design amongst others. All these areas require specific training, and in this unit learners have the opportunity to identify which area in Interactive Design they would like to specialise in, to then develop a project that is tailored to it. This is a unit that would benefit from group work, where each learner can focus on their area of specialisation to work towards a larger project.

Since the unit will be learner-driven, software tutorials might not be necessary because each learner will require specific training. Nevertheless, it is essential that learners pinpoint specialist software and training that they will require to produce their open project, and state how they plan to acquire this knowledge through a proposal. Tutors should still assist learners with their training, and should also point them to further resources and information about their area of interest.

This unit can potentially be combined with other units, where the learners can create a site-specific project. In this case, tutors must make sure that learners can still achieve a result that is appropriate to their area of interest. Alternatively the unit can be delivered with a unit that will allow learners to experiment with a variety of interactive software, thereby getting a better idea of which area they would like to concentrate on. The word 'open' is key to this unit, as it should allow learners to creatively interpret the design brief rather than be dictated specifics.

Learning Outcomes

On completion of this unit the learner will be able to:

1. Identify examples of creative interactive design projects in a specific area of interest.
2. Develop a proposal for a creative interactive design open project.
3. Produce material using specialist skills in an interactive design open project.
4. Present and evaluate an interactive design open project.

CAGDN-506-1501 Interactive Editorial Design

Unit level (MQF): 5

Credits: 6

Unit Description

This unit is intended for delivery as part of a group award or may alternatively be delivered on a stand-alone basis. The unit has a practical outcome that can be disseminated to peers and/or prospective employers as a portfolio piece. The outcome can also be linked to work experience or simulation. Furthermore, there is scope to deliver the unit as a collaborative project between two or more students, either in the same class, or across disciplines. One example might be with Photography students who supply the imagery. If collaboration is included in this unit, art direction and content assembly should be appropriately delegated and recorded as part of learning outcome 1.

The unit allows learners to study the production of interactive editorial content, specifically for magazine, e-book, app, newspaper or related media. Controlling typography, layout, images and interactive content are key components of the process. Navigation, flow and sequence of information, legibility, readability and visual hierarchy, creation of form and organisation of content as well as ease of use are paramount to the learning experience of this unit to successful outcomes.

Editorial design can be defined as a form of *visual journalism*; an editorial publication aims to educate, inform, or a combination of these but above all it aims to communicate a message. The majority of editorial work aims to communicate a story through carefully planned organisation and a calculated presentation of visuals and words.

Delivery of the unit recognises that there are close connections to other units and areas of visual communication, these would include digital imaging, design production, desktop publishing and typography. The completed project can be viewed in the target medium (web or tablet). The unit also provides the opportunity for learners to explore and experiment with emerging user experience techniques and concepts using industry-standard software. Finally the unit provides learners with the opportunity to evaluate and disseminate their work to peers and prospective employers.

Learning Outcomes

On completion of this unit the student will be able to:-

1. Explore and study the use of grids and typography in print and screen-based media for editorial.
2. Explore and develop an interactive design solution in editorial/digital publishing.
3. Apply design techniques in typography, layout and user experience to a given format.
4. Execute the digital publishing workflow in appropriate software, publish the project as an interactive product and evaluate.

CAGMA-506-1514 Game Design

Unit level (MQF): 5

Credits: 6

Unit Description

Due to their accessibility and diversity, games have become an integral part of popular culture. Interest in game design has experienced an explosive growth, where creators seek to express themselves, socially engage with others, and incite learning and critical thinking through imaginative solutions. There are various tools and techniques available to game designers, which aid in making their games creative, compelling and profitable. This unit covers a practical approach to the theory behind the design of engaging games.

This unit encourages the learner to develop the core analytical skills to deconstruct successful games, while understanding the concepts that make them appeal to their audience. Learners will analyse different game genres in detail, learn how to recognize differences in rules and conventions, and subsequently apply them to develop new games or modified variants. All analysis will base on the fundamental theories of game design, defined by the formal and dramatic elements of gameplay.

Individual research skills will be encouraged through various analyses on historical and contemporary games, with focus put on determining what has made them successful. Research may also include an investigation of technological developments that have enabled changes in traditional game design, to give better or more portable gameplay.

Being at the centre of their experience, the learner will oversee choosing their own areas of interest for research. This element of choice will allow them to focus on games they know well, genres they particularly like, and games that inspire them. Their skills will be challenged with comparative and evaluative work, critical report writing, and the development of a game or modification to put the established theory into practice.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Deconstruct existing games to determine effectiveness.*
- 2. Produce a new or modified game concept based on documented theories.*
- 3. Develop a game concept supported by design theories and peer feedback.*
- 4. Assess own work in view of the outlined game theories.*

CAGMA-506-1508 3D Modelling Foundations

Unit level (MQF): 5

Credits: 6

Unit Description

3D computer-generated art is a versatile practice, which has transformed numerous disciplines, including computer games, filmmaking, architecture, and product design. Despite the variance of its outcome, the fundamental basis of 3D production is identical across all media. This introductory Unit aims to teach its underlying concepts, techniques and developments in the production of high-quality 3D content.

By carefully researching the applications of 3D computer-generated art in different media, learners will acquire an understanding of the basic principles of current 3D modelling. With the fundamental theory at hand, they will be exposed to first-hand experience on the processes used to build a variety of 3D models for different purposes. Throughout their development, learners should ultimately be able to: create objects, manipulate meshes, set up UV maps, apply materials and texture maps to their work, set up the appropriate lighting and cameras, and create high-resolution renders to distribute their work.

The output used for this Unit can be paired with others within the same semester to give purpose to the learner's work.

Learning Outcomes

On completion of this unit the student will be able to:

- 1. Investigate the implications of 3D modelling within a commercial setting.*
- 2. Assess sources for the creation of 3D computer models to a defined concept.*
- 3. Create textured 3D models for a virtual environment.*
- 4. Prepare source files for use in a commercial product.*

CAGMA-606-1512 Animation for Games

Unit level (MQF): 6

Credits: 6

Unit Description

Animation is a fast-growing industry in the arts, design, media and entertainment. Starting from early television, cartoons and films, animation can now be found in computer games, mobile games and applications, advertising, e-books and web articles, in advertising and the fine arts.

Although the basic principles of animations are consistent in most animated projects, animation techniques will change according to platform and whether or not the project is employing 2D or 3D animation. Exporting files for animations will also change according to whether an animator is exporting for a game, for a short film, or for an animated gif.

This unit will introduce learners to both 2D and 3D animation principles and techniques. Learners should first be introduced to traditional principles of animation, where they can understand the concept of timing, narrative, movement and many other principles through hands-on exercises, drawing and observation. Learners will then become familiar with the 2D and 3D animation software interface and a range of tools within the software package. In the second half of the unit, learners will be required to create an animated sequence in 2D or 3D animation, or a combination of both. In this outcome, learners can be allowed to be more creative in the subject of their animation, however they must still show evidence of proper use of animation principles and techniques.

By the end of this unit, learners should be able to show evidence of both 2D and 3D animation techniques through a variety of technical exercises and an industry-standard creative animated sequence produced to a brief.

Learning Outcomes

On completion of this unit the learner will be able to:

1. *Describe the production pipeline in contemporary 2D and 3D animation*
2. *Use effectively a variety of 2D and 3D animation techniques and principles*
3. *Produce a creative short animated sequence for a particular platform*
4. *Export and evaluate an animated show reel up to industry standards.*

CAIMA-606-1603 Game Engines 2

Unit level (MQF): 6

Credits: 6

Unit Description

This Unit is designed to follow the practices covered in **Game Engines 1** and related Units, by enabling a group of learners to team up and create a complex digital game.

Learners will start by undertaking research into the structure and conventions of a game development studio. By observing a tailored approach to the creation of games, they will build a realistic expectation of the practices used within the industry. With a design brief at hand, learners will be required to team up and plan the creation of a new digital game. They will be encouraged to identify their strengths, take up a role within their team, and work together to plan and produce a concept of their choosing. They will be encouraged to decide all facets of their development, including which game engine or design software to use, as well as the standards they wish to operate with.

With a viable project plan at hand, each member of the team will take responsibility to produce high-quality and functional work according to their roles. For instance, learners working as 3D artists will not only create game models but will package them and provide the basic code to prepare them for use. Through this method, learners will experience the process of developing a game as a multidisciplinary team and learn from each other's strengths.

While creating their game, learners are encouraged to maintain and optimize their resources to the make the best use out of a computer's capabilities. Through this practice, learners should learn to observe their work, and improve it until an effective solution is reached.

Learning Outcomes

On completion of this unit the student will be able to

1. *Recognise the industrial roles and practices in game production.*
2. *Formulate documentation supporting the creation of a digital game within a team.*
3. *Produce complex mechanics and visual effects with relevant game engine resources as part of a game development team.*
4. *Evaluate in a reflective manner own finished game up to industrial standards.*

CAIMA-506-1503 App Development for Mobile Devices

Unit level (MQF): 5

Credits: 6

Unit Description

Smartphones and tablets are increasingly becoming the computer of choice for more consumers in the market, leaving software developers used to PC-sized application interfaces to grapple with a whole new outlook. Even though most have gone mobile, developers still struggle with the basics when it comes to building mobile applications. Programmers are used to the desktop “because they have a lot of screen.”

The aim of this Unit is to extend the knowledge gained in **Introduction to Web Development (HTML and CSS)** by applying taught mark-up techniques to mobile apps. By using a combination of HTML5, CSS3 and JavaScript, learners are set free to develop media-rich content for smaller screens intended to provide a service to the end-user.

Throughout the theoretical phase of this Unit, learners will gain knowledge on how to assess devices according to their various specifications spanning visual guidelines, technical features, and app store requirements. With this knowledge at hand, learners will be better armed to make informed decisions during the development of an effective mobile application, using the correct technologies. These skills will be later applied to a case study, in which the learner will be required to develop their own brief and create a suitable application to target their intended audience.

Testing procedures will conclude the unit content, in which the learners will be trained to appropriately test a mobile application using various techniques, in order to ensure its integrity and functionality.

This Unit may be joined with **PHP and Databases 1 or 2** to provide additional features using a server-based website. In this case, assignment briefs are to build upon each other to ensure that the learners get a good grasp of all taught programming languages.

Learning Outcomes

On completion of this unit the student will be able to:

1. *Identify the developments and challenges posed by current mobile devices and wireless communications.*
2. *Produce relevant design documentation for a mobile app to a given brief.*
3. *Develop a suitable application for a mobile device to a given brief, using current technologies.*
4. *Assess the limitations and challenges of working in a mobile environment.*

CASFT-506-1515 PHP & Databases I

Unit level (MQF): 5

Credits: 6

Unit Description

The purpose of this Unit is to teach learners the fundamental theory behind server-side web development, and consolidate knowledge by employing a hands-on approach to integrating a Server-Side programming language (PHP) with a Database using Structured Query Language (SQL). This Unit draws on the practice covered in **Introduction to Web Development** and builds on the knowledge and skills gained in implementing web design.

After exposing the crucial differences between client-side and server-side scripting, the learners will be shown how to set up and configure a Web Server, to employ a Client-Server architecture. Employing the two scripting methods mentioned above, the learners will be taught to create a website that uses Client-Side Scripting for User Interface design and Server-Side Scripting for functionality connected to an online database.

Setting up a Web Server solution, will allow learners to identify the main components needed to design and develop dynamic Web applications; the Web Server, Client-Side Scripting, Server-Side Scripting and a Database System. A hands-on experience with procedural PHP will consolidate the learners' fundamental knowledge of server-side scripting, while focusing on SQL will allow learners to contrast and differentiate between the four main sub languages found within SQL; the Data Definition Language (DDL), the Data Manipulation Language (DML), the Data Integrity Language (DIL) and the Data Control Language (DCL).

By the end of this Unit, learners must be able to set up their own web server and apply the necessary technology to create a dynamic website. Through ample practice and assignment work, they should be able to independently develop a dynamic web application based on the client-server architecture.

Learning Outcomes

On completion of this Unit the student will be able to

1. *Define the role and use of web and database servers in a dynamic website.*
2. *Prepare technical documentation to support the development of a dynamic website.*
3. *Develop a dynamic website using the fundamental concepts of PHP and MySQL.*
4. *Assess the architecture and technical specifications entailed in designing and implementing a server-based website.*

CASFT-606-2102 PHP & Databases II

Unit level (MQF): 6

Credits: 6

Unit Description

This unit aims to expand on the basics covered in **PHP and Databases 1**, by introducing the learners to PHP-based MVC frameworks employed by the industry. Through adequate hands-on practice, learners should learn to adapt their gained knowledge into a new and more efficient method of development.

At the start of this unit, learners should be introduced to the concept of an MVC framework, and exposed to the differences between procedural and object-oriented programming. Through practical exercises, they should further learn to employ the necessary techniques in the development of a website using the correct tools. Through tailored exercises, learners should develop the necessary skills to create full-featured websites more efficiently than established in previous Units.

Learning Outcomes

On completion of this Unit the student will be able to

- 1. Define the purpose of complete PHP frameworks in the creation of a dynamic website.*
- 2. Prepare documentation to promote and sustain the development of object-oriented code.*
- 3. Create a dynamic website using a PHP framework with advanced PHP code and MySQL queries.*
- 4. Ensure consistent practices throughout the developed website.*

CAGDN-606-1601 Sound and Image

Unit level (MQF): 6

Credits: 6

Unit Description

Sound is an essential component of multimedia design and visual projects as it introduces a multisensory approach as well as adds mood, tone and strengthens the project narrative. The aim of this unit is to help learners gain knowledge on the basics of sound and later plan and apply sound to a visual product using sound editing software. Learners will be introduced to sound in visual projects and gain an understanding of its use.

Learners will be encouraged to learn how to make appropriate and effective use of sound and later experiment further by using unconventional methods of sound recording and application. Although learners should ideally be given a set brief, this should be open enough for learners to select a visual medium of their choice. Possible projects could comprise of: sound design for a game, animation or animated infographic, interactive design project, web content and digital art projects. Although learners can choose to go for films and music videos, they must find a graphic design or interactive media context for such a project.

By the end of this Unit, learners will gain an additional skill that will help them in the way they approach multimedia work. Through a creative approach, this Unit also aims to introduce new possible combinations of sound and image that learners would not have otherwise considered.

Learning Outcomes

On completion of this unit the learner will be able to:

1. Identify effective use of sound in creative visual products
2. Devise sound assets for a creative visual product
3. Produce sound assets for creative visual product following industry standards
4. Apply sound assets to a creative visual product following industry standards

CAIMA-606-1504 Interactive Object Design

Unit level (MQF): 6

Credits: 6

Unit Description

Interactive designers have in modern times become product designers since today's interactive products are increasingly relying on digital and responsive technology. Interactive devices and products are remodelling the way we interact with technology and each other, and as such, interactive designers have become an essential part of a chain that can build life-changing products.

Throughout this unit, learners will explore theories and industry practices within interactive media, entertainment, product design and digital arts. They will carry out in depth analyses of how UX functions within interactive objects and design, covering user-centred design processes and interaction design including HCI.

This unit should encourage learners to experiment with hands-on projects particularly in the initial stages. Critical thinking should be engaged in a variety of creative experiments, where learners will design, implement, test and find solutions. Projects may take a variety of shapes depending on the learner's area of choice. The interactive objects can be designed for games, installations, entertainment as well as social and societal issues like improving education, healthcare and sustainability.

Following experiments with hands-on prototyping, learners should proceed with rapid prototyping and 3D printing, creative coding, using sensor technology and media, AI and other approaches to bring their project to life. By the end of the Unit, learners would have become familiar with the relationship between humans and objects by collaboratively creating innovative products and continuously observe, test and redesign to find the best solutions.

Learning Outcomes

On completion of this unit the learner will be able to:

1. *Analyse contemporary interactive object design using reflective thinking.*
2. *Build interactive object prototypes and observe user behaviour.*
3. *Design an original interactive object to a brief.*
4. *Evaluate user experience to identify points for redesign.*