SCHOOL OF COMPUTING, CREATIVE TECHNOLOGIES & ENGINEERING

(Broadcast Media Technologies, Games Design, Business Information Technology, Computer Animation & Visual Effects, Creative Media Technology, and Computing)

LEVEL 4 – 1ST YEAR UNDERGRADUATE

Module information	Semester	Credit
Graphics for Broadcast **Module Description**: This module will introduce students to theories and techniques related to the use of graphic design in the broadcast environment. Students will learn to use problem-solving methods as well as creative techniques to address the requirements of specific briefs. Students are also introduced to graphic design software, composition, typography and graphic representation. **Module content**: An introduction to key industry standard software packages and their uses; Graphic design theory – colour, composition and layout, typography and aesthetics; Designing for different formats; and The design process. **Assessment**: Presentation of Research and work-in-progress 40%; Demonstration of final product work 60%	Autumn	20
Academic & Broadcast Research Skills **Module Description**: Students will develop an understanding of the theoretical and contextual background to their course of study and to the wider principles of academic study. Content to include basic journalistic skills that are necessary for the successful practice in Broadcast Media and an understanding of referencing, academic research and writing. **Module content**: Students will learn basic academic and broadcast research skills and how they are applied in the media industries and in academic contexts. These areas of contextual study will be associated through the course of the module with the skills students should develop as they progress on the award's modules. These include Research, Evaluation Skills, use and handling of resources, writing, referencing & ethics. **Assessment**: Online reflective journal/ blog 20%; Online reflective journal/ blog 80%	Autumn	20
Camera and Audio Production Technologies **Module Description**: This module will introduce students to the basics of video and audio recording and manipulating. Students will be able to prepare equipment, shoot, record, edit and broadcast video and audio content in standalone form as well as integrated with other media. **Module content**: Research Skills; Time management; Production Processes; Video recording; Location management; Health and Safety / Risk Assessment; Creative potential of Editing; and Global outlook: examination of differing approaches to/mores in video/audio broadcasting internationally. **Assessment**: Viva Voce 40%; Production of media artefact 60%	Autumn	20
Game Design **Module Description**: This module introduces students to the key principles and tools for designing and prototyping games. Through hands on practical exercises students will learn about the modern game production techniques.	Autumn	20

Information is correct at the time of publishing (January 2017). All information are subject to change. Any queries please email studyabroad@leedsbeckett.ac.uk

Module content: Game analysis: Analysis of paper and digital product with hands on examples; and Game design: Concepting & pitching for both internal and External (inc. digital pitching), Walkthroughs, Mockups and Game component presentations. **Assessment**: Concept pitch and flyer for greenlight 40%; Digital game video crowdfunding campaign and materials 60%		
Game Development 1 **Module Description**: This module introduces students to the fundamental programming concepts associated with designing and developing for games. Introductory programming methodologies, principles & techniques will be taught in an applied context, through practical prototyping and middleware implementation exercises. **Module content**: Introduction to Object-Oriented Programming paradigms; Rapid computer based prototyping testing & evaluation strategies; Individual & game system mechanic prototyping; and Proof of concept development. **Assessment**: Programming Prototype Portfolio 40%; Project 60%	Autumn	20
Game Asset Creation 1 **Module Description**: This module introduces students to the key principles and tools for creating 2D and 3D assets suitable for use within a games environment. This includes creation of 2D textures and game objects, and several different modelling techniques to create objects within polygon limits, and the effective application of materials and textures to these objects. **Module content**: Introduction to the software interfaces for working within a 2D and 3D environment; 2D asset and UI element creation; Modelling using primitives; Box modelling; Basic materials and textures; and UV unwrapping for advanced application of materials. **Assessment**: Creation of digital 2D assets 40%; Creation of textured digital 3D model assets 60%	Autumn	20
Applied Animation **Module Description**: Throughout this module students will experiment with 3D animation applying observational research to the creation of realistic movement. **Module content**: Develop self-reflection through appropriate e-tools; Use of observation to complete task based practical animations; Simple motion study; Motion recreation; and Review and application of Balance, Weight, Staging the action, Timing, and Emotion. **Assessment**: Project 40%; Project 60%	Autumn	20
Drawing for Animation **Module Description**: Students will develop not only their drawing skills but just as importantly their observations skills through a variety of creative techniques. **Module content**: Still life drawing; Observation; Anatomy; Figure drawing; Balance; Light and shade; Drawing for animation; and Storyboarding. **Assessment**: Project 40%; Project 60%	Autumn	20
Animation Principles **Module Description**: This module introduces the students to the core principles of animation. The core principles that are introduced are aligned closely with the industry field of animation and VFX. **Module content**: Review current techniques i.e. stop frame, cell, rotoscope, 3D; Appreciate how audience and diverse cultures and first languages may see, use and react to different animation shorts; Basic 12 principles of animation; and Use software	Autumn	20

and cameras to produce simple animations i.e. Stop motion, 2D cell animation, 3D animation and Keyframe animation. **Assessment**: Project 40%; Project 60%		
Graphic Design **Module Description**: This module will introduce students to the theories and techniques related to the field of graphic design. Students will learn to use problem-solving methods as well as creative techniques to address the requirements of specific briefs. Students are also introduced to graphic design software, composition, typography and graphic representation. **Module content**: An introduction to key industry standard software packages and their uses; Graphic design theory – colour, composition and layout, typography and aesthetics; Designing for different formats; and The design process. **Assessment**: Project 40%; Project 60%	Autumn	20
Web Authoring **Module Description**: This is an introduction to authoring interactive content for the web. Students will gain a broad knowledge of the tools and processes involved in authoring interactive products. They will learn to design specifically for the web and apply basic programming to bring these designs to life. At the end of the module students will have produced a website, interactive applications and animated advertisements. The module highlights the challenges of deploying to a growing number of formats and devices. **Module content**: HTML/CSS; Interface design; Interactive programming; Concept documentation and presentation; Case studies and critique; Web animation; and Integrated online campaigns. **Assessment**: Project 40%; Project 60%	Autumn	20
Broadcast Coverage of a Live Event **Module Description**: This module develops ideas and concepts from research to support the creation, delivery and evaluation of a two pieces of digital film-making. The module is designed to encourage students to produce two significant and different pieces of work ending with the delivery of digital media coverage of a live event. **Module content**: Ideas and Research: Document the research of ideas and write treatments/proposals for digital content. Generate and adapt proposals and prepare effectively to produce broadcast media content. Digital Media Gathering: Produce two separate items of digital media content to a set brief and a set running time: Item 1 – A pre-recorded and edited interview conducted by the student and completed as an individual task; and Item 2 – Edited coverage of a live event where material is produced using team-work and edited/post-produced individually. Delivery of product: presentation and demonstration of the product and process to peers and assessors via digital portfolio/class presentation. **Assessment**: Digital Upload of media content product 50%; Digital Upload of media content product 50%	Spring	20
Studio Broadcast **Module Description**: This module will equip students with the practical skills required to undertake a range of roles in a professional studio environment. It will examine some successful studio based productions, explore the roles and working practices in this environment, develop an understanding of the operational techniques in the utilisation of studio hardware and software and apply the acquired skills and knowledge in a practical studio production context.	Spring	20

Module content: Students will gain practical skills in a variety of studio roles including: Floor Manager, Camera Operator, Sound Mixer, Director, Teleprompting operation, Vision Mixer, Producer, and Video Tape Operator. The module will also develop Research Skills, Time management skills, Audio and Video recording, Team working and examine Financial constraints/ implications of broadcasting production decisions and relevant ethical issues. **Assessment**: TBC		
Intro to Online Media **Module Description**: Students are introduced to content production, conversion techniques and services appropriate to video distribution in online contexts. Students will study: Digital content delivery platforms for online video and online audio; Structural and technical considerations in preparing video and audio content for digital dissemination; Curation, collection and taxonomy of online content; Editing with online distribution in mind; and Combining other online media with video and audio. **Module content**: Students will explore emerging and standardised approaches to the creation, optimisation, conversion and dissemination of video and audio material in online contexts. Students will learn to generate and bring together a portfolio of their creative work in an online environment. Students will develop technical and design skills required by video and audio producers in online environments. Students will learn historical context of online media with priority given to developing skills to deal with the speed of technological change in online media. **Assessment**: Workshop Portfolio 40%; Online Content Portfolio 60%	Spring	20
Game Development 2 **Module Description**: This module introduces students to intermediate programming concepts, as well as asset/media pipelining required in integrated game product development. Programming methodologies, principles & techniques will be taught in an applied context to produce a game product/artefact to brief. **Module content**: Object-Oriented Programming paradigms; Game design patterns and system coherency; Asset pipelining and middleware game engine integration; and Game development, design prototyping & implementation to brief. **Assessment**: Project Proof of Concept 30%; Project 70%	Spring	20
Concept Art & Visualisation 1 **Module Description**: This module introduces students to the key principles and techniques used in drawing and sketching. It develops students' skill and competence through a range of drawing, observation and compositional exercises. Students will also explore the colour theory for creating suitable colour schemes for their concept designs. In particular it will focus on several different themes to create and develop a body of visual research and investigation. **Module content**: Introduction to sketching and drawing; Observational and compositional exercises; Visual styles and themes; and Drawing techniques and practice. **Assessment**: Product 1 40%; Product 2 60%	Spring	20
Game Asset Creation 2 **Module Description**: This module introduces students to the key principles and tools for designing and producing game assets for use in a game engine. Looking at techniques for developing character assets in a high resolution format, re-topology, rigging and weighting. Through hands on practical exercises students will learn about the modern game production techniques utilised in a growing entertainment sector.	Spring	20

Module content: Game character development: Sculpture/ Researching/ Proportions; Re-topology; Mapping; Texturing; Character Rigging; and Character Weighting. **Assessment**: High resolution sculpture 40%; Final asset, Re-topology, textured, rigged and weighted 60%		
Graphics & Design **Module Description**: Students will be introduced to digital graphics and design developing both digital textures and concept art. **Module content**: Principles of Design; Design Theory and Terminology; Composition and Layout; Concept Design; Colour Theory; and Drawing and Illustration. **Assessment**: Prototype 40%; Project 60%	Spring	20
Video Concepts **Module Description**: Students will develop their video editing skills. Along with introducing basic special effects techniques and pre-production and production techniques. **Module content**: Research Skills; Time management; Production Processes; Video recording; Location management; Health and Safety / Risk Assessment; Creative potential of Editing; and Global outlook. **Assessment**: Prototype 40%; Project 60%	Spring	20
3D Graphics **Module Description**: Students will develop their 3D graphics skills via sessions in 3D modelling, Texturing, Lighting, and Rendering for use in virtual environments and animation shorts. **Module content**: 3D Modeling Techniques - Box modeling, Polygon modeling, Hi–resolution and low polygon modeling and Simple modifiers - bend and taper; 3D Texturing Techniques – Mapping, UVW modifiers; 3D Visualisation – Lighting and Camera control; and 3D Animation – Keyframing and rendering. **Assessment**: Prototype 40%; Project 60%	Spring	20
Digital Video **Module Description**: An introduction to the core concepts and practical techniques involved in contemporary video production. Students are given the basic skills to research, plan, shoot and edit a short video production. **Module content**: Video production theory; Concept development; Production of storyboards and other pre-production planning documentation; Camerawork; Video capture and editing; Post production effects techniques; Export and delivery to relevant formats. **Assessment**: Project 40%; Project 60%	Spring	20
3D Principles **Module Description**: Students will develop skills in 3D modelling, texturing, lighting and rendering. They will also develop their understanding of the principles of animation. **Module content**: 3D Modelling Techniques - Box modelling, Polygon modelling, Hi–resolution modelling , Low polygon modelling and Simple modifiers; 3D Texturing and Mapping; 3D Visualisation; Lighting and Camera control; The principles of animation; and Rendering. **Assessment**: Project 40%; Project 60%	Spring	20

LEVEL 5 – 2ND YEAR UNDERGRADUATE

Some modules will have pre-requisite requirements which you must meet before study commences. It is important that you pay particular attention to this to ensure that you have the necessary level of study to take these modules.

Module information	Semester	Credit
Post-Production for Broadcast **Module Description**: This module will provide students with practical experience of film editing technique and associated post-production tasks and workflow and will help them develop an understanding of the operational technologies of video and audio post-production software. **Module content**: Students will learn post-production workflow, non-linear editing skills and techniques. Emphasis will be given to understanding principles of film-editing and how they relate to digital process and industry practice. **Assessment**: Portfolio 40%; Product 60%	Autumn	20
Scriptwriting for Broadcast Media Platforms **Module Description**: This module develops students' written work relating to broadcast media content. Students will be introduced to scriptwriting for broadcast and will learn how to provide effective written content for use in broadcast environments. **Module content**: Research skills; Written Skills; Design Skills; Enterprise; Digital Literacy; Criticism and review of individual work; Criticism and review of peers' work; Creative potential of writing; Use of writing to enhance content; and Production of media artefacts from scripts. **Assessment**: Scriptwriting 50%; Media Product/artefact production 50%	Autumn	20
Visual Presentation **Module Description**: This module aims to build on skills developed in Graphics for Broadcast (L4) and build students' ability to originate and communicate complex ideas using the principles of graphic design for the broadcasting industry. **Module content**: Design methodologies; Creative visualisation; Image correction and adjustment; Aesthetics, layout and composition; Design Unity; Typography & Colour; Document design; Image formats; and The Adobe Creative Suite – Photoshop, Illustrator, Indesign, After Effects. **Assessment**: Pitch Presentation of research/work-in-progress 40%; Project Delivery of final product 60%	Autumn	20
Game Development 3 **Module Description**: The 'game programming' emphasis is on mechanisms that address game play mechanics. These can include input devices, AI, multiplayer/networked games, web integration, shaders, audio etc. Topics will vary from year to year to include the current literature and issues in game development. **Module content**: The module will commence with managing software projects and cover version control. Advanced topics in game development will be covered. These can vary from year to year to reflect the current market place and trends. Examples can include: - hierarchical data structures and xml - programmable shaders and multipass rendering - artificial intelligence - game user interface design - networking and mutliplayer. **Assessment**: Programming Portfolio with Version Control 30%; Product 70%	Autumn	20
Character Animation	Autumn	20

Information is correct at the time of publishing (January 2017). All information are subject to change. Any queries please email studyabroad@leedsbeckett.ac.uk

Module Description: This module introduces students to the key principles and tools for creating 3D Character animations suitable for use within a games environment. In particular it will focus on several different animation techniques to create character animations that are applicable within a real time, interactive or game environment. **Module content**: 12 Principals of Animation; Character Rigging & Skinning; Pose to Pose Key frame Character Animation; and Motion Capture. **Assessment**: Product 1 40%; Product 2 60%		
Games Studies **Module Description**: The module provides a conceptual & critical overview of the social, cultural and technological impact of games as well as providing a framework by which students can evaluate games as a media text. **Module content**: Analyse the variant aspects of digital media and phenomena recognised as 'game' & 'play'; Historically frame and identify key developments in games entertainment media and design; Understand games as dynamic systems of cultural meaning making; and Position games within the broader context of digital, popular culture and information society/technologies. **Assessment**: Presentation 50%; Report 50%	Autumn	20
3D Modelling **Module Description**: This module examines the essential 3D modelling techniques required within the Animation and Visual Effects Industry. Techniques covered will examine the professional pipeline required to achieve a proficient level of artistry for digital sculpting and soft surface modelling within a typical VFX workflow. **Module content**: Advanced 3D Modelling Techniques - Box modelling, Polygon modelling, Hi–resolution and low polygon modelling; Advanced 3D Texturing Techniques – Mapping, UVW modifiers; 3D Visualisation – Lighting and Camera control; and 3D Animation –and rendering. **Assessment**: Project 40%; Project 60%	Autumn	20
Concept Development and Animation **Module Description**: Based on research into real world motion they will develop an animation portfolio. Furthermore students will gain an appreciation of storytelling in animation and actively gain a skill base for creating, adapting and contextualising conceptual ideas and delivering them within an appropriate visual framework. **Module content**: Outline the indicative module content for students: Study of human & animal anatomy; Study and recreation of natural motion; Storytelling; Acting; Design methodologies; Creative visualisation; Image Correction and adjustment; Image Aesthetics and Composition; and Image Formats. **Assessment**: Project 40%; Project 60%	Autumn	20
Digital Visual Effects **Module Description**: Develop and implement appropriate industry techniques and tools required to utilise 3D and compositional skills to a professional level. **Module content**: Audio formats, sound effects and integration with visual effects; Camera Tracking, Camera Matching and Stabilising; Keying Techniques, Alpha Channels, Mattes and transparencies; Colour Correction, Post production filtering and effects; File Formats & File Management; and Production values and workflow. **Assessment**: Project 40%; Project 60%	Autumn	20
Visual Communication **Module Description**: This module aims to extend the student's creative understanding of how conceptual ideas are developed, constructed and communicated within a creative production environment. It further aims to actively	Autumn	20

develop skills allowing the student to create, adapt and contextualise visual ideas and deliver them at an appropriate professional level. **Module content**: Design methodologies. Creative visualisation. Image correction and adjustment. Aesthetics, layout and composition. Typography & Colour. Document design. Image formats. The Adobe Design Suite – Photoshop, Illustrator, Indesign. **Assessment**: Project 40%; Project 60%		
Web Design **Module Description**: This module builds upon the foundation skills developed in the Level 4 Web Authoring module. It focuses on successful web sites and will help students identify the factors that contribute to their success. With this knowledge students will learn to build professional websites for desktop and mobile, using code which validates to Web Standards. The module features guest lectures from industry to show students how these skills are applied in the real world of web design. **Module content**: HTML/CSS; Javascript/jQuery; Wordpress; Designing to grids; Responsive Design; and Web Typography. **Assessment**: Project 40%; Project 60%	Autumn	20
Advanced 3D Animation **Module Description**: Students will develop their 3D animation skills to an advanced level. They will also further their understanding of 3D modelling, texturing, lighting and rendering. **Module content**: 3D Modelling Techniques - Box modelling, Polygon modelling, Hi–resolution modelling, Low polygon modelling and Modifiers; 3D Texturing and Mapping; 3D Visualisation; Lighting and Camera control; The principles of animation; and Rendering systems and techniques. **Assessment**: Report 30%; Project 70%	Autumn	20
Business Dynamics **Module Description**: The module presents a range of skills and technical abilities in order to prepare the learners to develop a sound understanding of the general systems notion, systems thinking and practice including system and business dynamics. The module will offer the students a range of theoretical and experimental concepts by which they will be able to examine, analyse and model business systems in discrete time. **Module content**: 'Systems Thinking & Business Dynamics' module introduces the general systems notion. It would also present two methodologies of SSM (Soft Systems Methodology) and VSM (Viable System Model). Contents include theoretical and philosophical concepts on the general systems notion, Fundamentals of System and Business Dynamics, Causal Loop Diagramming, Stock Flow Diagramming and an introduction to the relevant equations in discrete time. **Assessment**: Assignment 50%; Exam 50%	Autumn	20
Database Systems **Module Description**: This module builds on your experience of designing and implementing databases and allows you to apply database application development skills and programming to build robust applications. **Module content**: Modern database applications: Client/Server architectures and languages; Database server programming; code reuse; Integrity: Declarative vs. procedural: advantages/disadvantages of SQL; PL/SQL - problems for which procedural code is required; triggers and constraints; DDL, DML and SQL from SQL; Database architecture and technologies, application tools and development approaches; Development process: models, normalisation, physical design, testing	Autumn	20

and documentation; Advanced Application Development: Forms and Interactive Reports. **Assessment**: Project 50%; Exam 50%		
Web Applications & Technologies **Module Description**: This module will explore the design and development of dynamic websites. The design process as applied to the development of websites will be examined alongside an introduction to server side web development, to a point where students are able to build a well designed interactive site. **Module content**: Explore techniques applied to the specification and design of web applications; Consider key theories and principles of usability and interaction design; Investigate architectures for building n-tier web applications; Server-side processing e.g. PHP; Interacting with web applications e.g. Forms, Data Stores; and Security and authentication techniques. **Assessment**: Project 70%; Exam 30%	Autumn	20
Application Programming **Module Description**: This module extends the basic knowledge of programming by introducing the technologies required in order to build graphical user interface (GUI) type programs. An understanding of event driven programming using GUI class libraries along with object oriented development techniques will be the primary themes. The module will also include an introduction to appropriate graphical modelling technique, such as the Unified Modelling Language. OO concepts such as classes, objects, inheritance, encapsulation and polymorphism will be covered. **Module content**: Use of GUI class libraries; Core OO concepts; Implementing classes; Managing encapsulation; Implementing inheritance hierarchies; OO support for common data structures; An introduction to the Unified Modelling Language (UML); and Mapping models to code. **Assessment**: Assignment 40%; Assignment 60%	Autumn	20
Broadcast Media Planning **Module Description**: Students will further develop research, planning and evaluation/production management skills enabling them to understand and work effectively producing filmed content for the broadcasting industries. **Module content**: In the context of a student-managed project activity: personal and team responsibility, negotiation skills; task analysis, estimating, planning, organisation, scheduling and delegation; application of appropriate techniques, methodologies and tools; monitoring, recording, control and quality review; and awareness of legal and ethical issues: quality, honesty, social responsibility and professionalism; privacy laws, copyright laws. **Assessment**: Presentation 40%; Final production 60%	Spring	20
Online Broadcasting **Module Description**: Students explore online audio and video production and dissemination techniques for broadcast media production. The emphasis is in creating original product for online contexts, rather than conversion or appropriation. Distribution tools studied will include social media and individual publishing platforms. They will pay particular attention to: Social dynamics in online media; Use of multi-platform approaches to content dissemination; The design and production of video and/or audio content for online use; and The collation and re-distribution of content acquired through social media. **Module content**: Students will be guided in the creation of video and/or audio content specifically optimised for online publication and/or live streaming. This will be published to online platforms that, in turn, will integrate into social and participatory	Spring	20

media services. Students will also be required to take into consideration mobile dissemination scenarios. Interactive media tools will be used in the packaging and dissemination process. **Assessment**: Workshop blog 40%; Portfolio 60%		
Broadcast Media Production **Module Description**: This module develops ideas and concepts from research to support the creation, delivery and evaluation of body of work (a "product") appropriate for broadcast media made by a group of students. **Assessment**: Presentation 25%; Production of broadcast media content 75%	Spring	20
Environment Modelling **Module Description**: This module introduces students to the key principles and tools for designing and producing game environments. Through hands on practical exercises students will learn about the modern game production techniques adapted by this rapidly growing entertainment sector. Students will be introduced to photography to obtain reference materials. **Module content**: Environment Design - Landscapes and research, Photography for reference materials, Prop implementation, Optimising 3D objects for use in engine, Vista creation, Level playability; and Level creation – Scales, Building for a camera view, Building to a polygon count, Texture limitation and creation. **Assessment**: Design 30%; Final level 70%	Spring	20
Concept Art & Visualisation 2 **Module Description**: This module develops students principles and techniques used in drawing and sketching. It develops students' skill and competence through a range of drawing, observation and compositional exercises. Students will also develop and explore research and development techniques for their concept designs. In particular it will focus on a more singular theme to create and develop a body of visual research and investigation. **Module content**: Development of sketching and drawing; Visual styles and themes; Drawing to develop complex ideas; and Developing a drawn portfolio containing both non digital and digital rendered work. **Assessment**: Product 1 40%; Product 2 60%	Spring	20
Animation & Simulation **Module Description**: The film industry is currently utilising current technologies to create believable virtual creatures and Visual Effects. This is done by using simulation of real world physics and appreciation of the anatomical considerations for rigging for animation. **Module content**: Outline the indicative module content for students: Anatomical considerations when rigging a character/creature – Facial, Full body; and Uses of Simulation in animation i.e. Atmospheric Effects, Combustion Effects, Dynamics and Controllers and Constraints. **Assessment**: Project 50%; Project 50%	Spring	20
Performance Capture **Module Description**: This technology is fundamental to the realistic performance of virtual characters, both within film and games. Students will be expected to analyse how an actor or other type of professional performance can be harnessed, using digital motion capture techniques. Students will be expected to edit and manipulate captured data.	Spring	20

Module content: Single person take; Multiple person take; Real-time Motion Capture; Props; Blending of Motion Capture data; Motion Capture Pipeline; Enhancing performance data through manual key frames; and HUD's. **Assessment**: Project 40%; Project 60%		
Post Production & Digital Compositing **Module Description**: This module will provide students with practical experience of compositing and finishing for a professional visual effects product through the seamless merging of live action footage with computer generated imagery (Utilizing visual effects assets created in the semester 1 module; Digital Visual Effects). Introducing the ability to work to standard industry workflow and practices, which is essential to a career within this subject area. **Module content**: Understanding of Digital File Formats; Video Post-Production Roles and Pipeline; CGI Geometry; Appropriate Rendering; Multipass Compositing; Effective Lighting; Matchmoving; Digital Matte Painting; Colour Grading; and Projection mapping. **Assessment**: Project 40%; Project 60%	Spring	20
Video Post Production **Module Description**: This module aims to provide students with practical experience of producing multimedia content at professional standards. Students will develop an understanding of the post-production techniques used in video and audio production hardware and software. **Module content**: Video Post-Production best practice and theory; Visual Concept Development; Creation of pre-production conceptual materials and other planning documentation; Use of advanced hardware and software; Post-production techniques explored; and Export and delivery to relevant formats. **Assessment**: Project 30%; Project 70%	Spring	20
Interactive Media Design **Module Description**: In Interactive Media Design students will learn how to integrate visual design, animation, sound, video and gameplay to create engaging interactive products. Students will develop their skills in basic programming and by the end of the module, will be able to identify the factors that make usable interfaces and apply this learning in creating their own. This module encourages students to approach the assignment brief in an original and creative way. It offers the students a chance to create a strong piece of work for their portfolios. **Module content**: Flash animation; Actionscript; HTML5/Javascript/jQuery; Technical documentation – flowcharts, structure charts, etc; User testing; Programming structures; Debugging; and Preparation of assets. **Assessment**: Project 40%; Project 60%	Spring	20
Business Analysis **Module Description**: This module aims to introduce students to a range of approaches suitable for business analysis in a variety of organisational contexts. Particular attention will be paid to the issues relevant to the development and implementation of both packaged solutions and bespoke developments. Analytical approaches will be focussed on the soft end of the spectrum of available methods and students will be expected to acquire a range modelling skills. **Module content**: The module introduces contrasting approaches to business and organisational analysis in a variety of contexts. Content includes: study of business process modelling in a variety of contexts; diagramming for problem definition; the characteristics and data science approaches. **Assessment**: Coursework 50%; Project 50%	Spring	20

Digital Organisations **Module Description**: In the networked society, digital organisations can be found in business, government and social life. Students on this module will be introduced to the technological and managerial issues associated with the digital organisation. Additionally, consideration will be given to the ethical and social issues introduced by this form of organisation. **Module content**: E-commerce: fundamentals and business models; e-government; Key applications for digital firms: digital markets; digital goods; collaboration models for virtual organizations; Managing global systems: global strategies; technological issues; and Ethical and social issues: privacy; intellectual property; challenges. **Assessment**: Exam 40%; Essay 60%	Spring	20
Software Systems Development **Module Description**: This module will focus on more advanced contemporary programming techniques. Concepts such as exception handling, defining interfaces, use of collections etc. will be included. The module should also include topics such as analysis of algorithms. **Module content**: Data structures; Algorithm efficiency; Error and exception handling; Design patterns and interfaces; Formal approaches to code documentation; and Testing strategies. **Assessment**: Assignment 50%; Exam 50%	Spring	20

LEVEL 6 – FINAL YEAR UNDERGRADUATE

Some modules will have pre-requisite requirements which you must meet before study commences. It is important that you pay particular attention to this to ensure that you have the necessary level of study to take these modules.

Module information	Semester	Credit
Advanced Graphics for Broadcast **Module Description**: This module is about creating advanced graphic content/ motion graphics sequences for broadcast environments. The students: develop a library of thematically linked visual materials; process, adjust and composite materials into layered documents suitable for animation; animate layered documents creating broadcast appropriate graphics/motion graphics sequences. The content/sequences generated by the students should be appropriate for delivery within a Broadcast Media context. **Module content**: Preparing visual materials for animation; Motion Graphics software; Advanced motion control; Audio-visual synchronisation; 3D Motion Graphics; Masking; Scripting & Automation; Typography in Motion; Special Effects; and Stop Motion Animation. **Assessment**: Pitch presentation 25%; Viva 75%	Autumn	20
Radio Production **Module Description**: A practical module aimed at teaching students basic radio techniques, developing skills in recording and broadcasting audio and providing an understanding of writing and programme content creation for radio. Assessment will be a portfolio of radio work, plus a report on an aspect of radio production. **Module content**: How a radio production environment works, roles, responsibilities, technical production and output; Identification of appropriate content, content gathering and reporting skills; Writing for radio, structuring story, working to deadlines; Packaging audio reports and bulletins; Technical training: digital recording, editing, using studio and portable equipment; and Presentation and interviewing skills. **Assessment**: Portfolio 80%; Report 20%	Autumn	20
Broadcast Industry Practice **Module Description**: This module helps students develop enterprise skills that will enable students to turn their creative practice into work as an employee or by establishing a functioning business. They will revisit mobile and digital production methods, explore working practice in broadcasting, and begin establishing industrial networks. **Module content**: Working methods in media production; Presentation of professional skills; Quality and formatting of work for promotion; Pitching to industry; Self-Marketing; Adapting with innovation to changes in media markets; and Interview and professional profile development. **Assessment**: Portfolio 40%; Production of media artefact/research product 60%	Autumn	20
Advanced 3D Visualisation **Module Description**: This module introduces students to the key principles and tools for creating high quality 3D assets suitable for a range of applications such as marketing, portfolios, game engines, visualisations. In particular it will focus on different modelling, shading, rendering and lighting techniques to create realistic 3D characters, or 3D architecture/environments, or 3D vehicles.	Autumn	20

Module content: High resolution modelling; Hard surface modelling and sculpting; Organic surface modelling and sculpting; and Photorealistic lighting, shading and rendering techniques. **Assessment**: Work In Progress/ research documentation 40%; Renders/ Portfolio/ Turntable/ Walk through 60%		
Advanced Databases A **Module Description**: This module builds on students databases design and implementation experience to: Discuss and evaluate the capabilities of different database technologies for effective management and utilisation of an organisations data resource; Discuss and evaluate the main features of advanced database models and assess their applicability to the strategic requirements of organisations; and Appreciate and develop skills to critically evaluate database systems, structures and implementations required to manage a corporate database. **Module content**: Data Quality and Integrity, Data Analysis: Constraints, data control, data integration; Database Management: Database Administration, methodologies and techniques; data dictionary; DBA tools; interaction with other systems; Data Maintenance: database facilities for governing access; concurrency, locking, Data Maintenance and housekeeping; and Applications: data visualisation, data mining, data warehousing, emerging technologies and trends. **Assessment**: Project 50%; Project 50%	Autumn	20
Advanced Internet Development A **Module Description**: The module will focus on current development standards and tools within the area of dynamic internet application systems. Students will learn to build professional web-based systems utilizing a variety of current techniques. **Module content**: Development Tools and Technologies: e.g. Dreamweaver, web programming (PHP/MySQL), open source applications and tools; Presentation Technologies: CSS, media AJAX, streaming, plug-ins, Flash, client-side scripting (Javascript), DOM, XSLT, Mobile; Standards: W3, Accessibility; Information/Data Centric Technologies: Database Access, XML; and Service Oriented Technologies: Web services. **Assessment**: Project 100%	Autumn	20
Human Computer Interaction **Module Description**: The module provides an exclusive opportunity to gain knowledge of planning and conducting a professional-standard usability evaluation process, as well as gaining invaluable experience of analysing and presenting the results in a structured approach. Students explore theoretical and practical issues in the design, implementation and evaluation of user interfaces. User interface concerns that are fundamental to the success of any computer-based information system, such as task analysis, dialogue design, user support, evaluation, web 2.0 technologies, web accessibility and social impact are discussed. **Module content**: Human Information Processing; Evaluation Techniques; Design Approaches; Inclusive Design; Usable Web 2.0; Task Analysis; Multimedia-enhanced Interactivity; Social Issues in HCI; and Current Research in HCI. **Assessment**: Project 60%; Exam 40%	Autumn	20
Short Story **Module Description**: This module provides an opportunity for students to explore the conventions of short film production, with a view to them applying their own style and creative skills. In particular the module will review the importance of creative storytelling and the many innovative ways of depicting this in film.	Autumn	20

Module content: Storytelling; Cinematography; Composition; Metaphor; Narrative and Non Narrative; and Linear and nonlinear narrative. **Assessment**: Project 40%; Project 60%		
Motion Design **Module Description**: This module is about creating animated motion graphics sequences from static, two-dimensional visual content. Students develop a collection of visual assets into layered documents suitable for animation, and then animate the layered documents creating motion graphics sequences. **Module content**: Image aesthetics; Composition; Masking and Compositing; Non-destructive image processing; Advanced cutouts; Advanced vector graphics; Image adjustment and correction; Preparing visual materials for animation; Advanced motion control; Audio-visual synchronisation; 3D Motion Graphics; Scripting and Automation; Typography in Motion; and Special Effects. **Assessment**: Concept pitch 40%; Motion graphics 60%	Autumn	20
Scriptwriting **Module Description**: This module develops students' written work relating to provision of broadcast media content. Students will be introduced to scriptwriting for broadcast and will learn how to provide effective written content for online media and how to present their work in the digital environment for maximum clarity and impact. **Module content**: Principles of journalistic writing; Scriptwriting for factual broadcasts (news/doc); Scriptwriting for fiction broadcasts (drama/light entertainment); Scriptwriting for online content; Effective web delivery of written content; Writing for social media; Writing for an international audience; Writing for corporate/business clients; Use of writing to enhance content; Use of social media writing for marketing; Criticism and review of individual work; and Criticism and review of peers' work. **Assessment**: Scriptwriting 50%; Media production 50%	Autumn	20
3D Character Design for Film **Module Description**: This module introduces students to the key principles and tools for creating 3D Character designs. The sessions then look at the implementation of digital sculpture and appropriate mesh development. **Module content**: Character concept designs; Pose drawings; Development pipeline and file management; Digital Sculpture; and Advance mapping. **Assessment**: Project 30%; Project 70%	Autumn	20
Web Development **Module Description**: Web Development is a chance to take a more technical approach to web site construction. Students will learn how to create a development environment and how to integrate websites with databases to provide dynamic content. They will understand how to work with server side scripting languages, ecommerce systems and how to produce websites which are set up for Search Engine Optimisation. **Module content**: Role of a web developer; Responding to a creative brief; Wireframing and visual designs; Responsive Design and Mobile Web Apps; Setting up a development environment (e.g. XAMPP); and Creating a database and communicating using PHP and MySQL. **Assessment**: Prototype 40%; Final website 60%	Autumn	20
Advanced Software Engineering A **Module Description**: This module aims to extend programming skills and	Autumn	20

knowledge to a more advanced level of engineering rather than just development. It also aims to significantly develop transferable programming and design abilities. **Module content**: Programming Concepts: transfer of knowledge of one programming language to a new language; Advanced Programming Concepts: Advanced OO concepts, component manipulation; and Engineering Techniques: Agile development, test driven development, design patterns. **Assessment**: Project 50%; Project 50%		
Games Industry **Module Description**: The aim of this module is to investigate the technical challenges faced by the games industry in developing new and exciting products in a world where markets, delivery methods, technology and design solutions are constantly evolving and being updated. **Module content**: History of computer game development; production process and game development tools; industry communication techniques; game development roles; business of evolving markets such as online gaming, mobile gaming & collaborative play. The rapidly changing world of computer entertainment presents a variety of challenges which lend themselves well to short investigatory topics. This module provides students with the opportunity to focus on a number of topics and present findings back to their own peers. **Assessment**: Assignment 80%; Assignment 20%	Spring	20
Mobile Gaming **Module Description**: This module introduces students to the key principles and tools for designing and prototyping mobile games. Through hands on practical exercises students will learn about the mobile game production techniques using modern development tools. **Module content**: Mobile Games Design: development cycle (ideas, storyline, play modes), content generation; Technology: mobile game technology, emerging technologies, Cross platform product development, emulators/simulators and market delivery mechanisms; Environments and interaction: user input, content generation, collision detection and game audio; and Mobile games programming: scripting, syntax, programme structures, conditions, logic, exporting for target platform. **Assessment**: Prototype 70%; Game design 30%	Spring	20
Advanced Databases B **Module Description**: This module takes a practical perspective on the domain of data and database development and management. It seeks to justify, and implement appropriate modelling, design and programming strategies in satisfying requirements associated with a range of modern data/database applications. **Module content**: Database Administration: SQL against the Catalog; Database Tools; Performance; Optimisation; Security; SQL from SQL. Declarative vs. procedural: advantages/disadvantages of SQL; redundancy, implications for performance; problems for which procedural code is required; triggers and constraints; Packages, Procedures and Functions. Modern database applications: Client/Server architectures and languages; Database server programming; code reuse. **Assessment**: Assignment 60%; Assignment 40%	Spring	20
Emerging Technologies **Module Description**: Businesses are required to innovate and develop to ensure stability and growth, part of this involves the adoption and appreciation of how technology can support and advantage their Company. Students on this module will investigate and evaluate how Companies have innovated as part of their natural development and as a planned strategy. This innovation will be further appreciated	Spring	20

with respect to the leverage and opportunity technology can provide. Lastly the module will look into new and emerging technologies with a view critically discussing the potential that these technologies can provide for a business. **Module content**: Students on this module will appreciate the role of innovation in a business and be able to look to historical case studies and examples to see good practice and how this is can be part of a Company strategy. You will gain an understanding of IT strategic management of these emerging technologies and analyse their applicability for particular uses in situations and solution offering. To enhance students' understanding of the role of technologies in organisations and be able to evaluate these with respect to departmental functions and company processes and strategy. Example technologies are: digital marketing, search engine optimisation; web strategies; open source; digital logs, big data, social media, 3D printing, data analytics, google analytics, cloud computing, google glass, virtual worlds. Students will become familiar with researching and evaluating new and emerging technologies particularly with respect to future vision and strategy for a Company or higher level policy (such as Government, European). Making them better equipped to anticipate and select, use and exploit emerging technologies of the future. The module will enable students to deepen their theoretical understanding of the relevant related theory. The module aims to challenge depth & breadth whilst enhancing critical thinking in students. **Assessment**: Assessment 50%; Assessment 50%		
Business Intelligence **Module Description**: This module introduces the students to the latest developments in Business Intelligence (BI), and in particular the ways in which they are applied, and/or could be applied, in business contexts. As well as having important applications in business and government, BI also raises ethical and social issues, which are discussed in the module. **Module content**: BI – The significant and development of BI – what it is and how it is used. Different types of BI (Artificial Intelligence (AI), Data Mining, neural networks, business analytics, Knowledge based systems, OLAP). BI systems – what they are, how they are developed, their strengths and weaknesses. Strategies for the use of BI. The role of data in a BI strategy – data issues, data quality, data identification, data protection issues, global data considerations, data as an asset. Data Warehouse models – evaluation of different data warehouse models as a solution to BI strategies. Data and information representation – reporting and visualisation. Specific types of BI for example machine learning and neural networks – perhaps the computer can learn the knowledge for itself? BI application areas, e.g. BI and Education, BI and Business, BI and big data. Social and ethical aspects of BI? What are the implications for businesses and society? **Assessment**: Assignment 70%; Presentation 30%	Spring	20
Animation & Visual Effects Industry **Module Description**: This module encourages the student to focus on a particular role within the industry. It also looks at the current state of the industry and promotes the importance of being properly preparing to apply for your desired job. **Module content**: Roles within the animation and visual effects industry; Career development plans; Realistic expectations of future careers; Postgraduate study opportunities; Legal, financial, and practical implications of employment in this industry; and Portfolios, CVs, showreels. **Assessment**: Project 40%; Project 60%	Spring	20
Advanced Animation & Visual Effects	Spring	20

Information is correct at the time of publishing (January 2017). All information are subject to change. Any queries please email studyabroad@leedsbeckett.ac.uk

Module Description: This module provides the students with the opportunity to create an animation or visual effects sequence to be used as the main show piece for their professional show-reel. **Module content**: Software based tutorials focusing on: Animation; Dynamic simulation; Volumetric simulation; Fluid simulation; Cloth simulation; Rendering; Digital compositing; Matte painting; and Match moving. **Assessment**: Project 40%; Project 60%		
Design Thinking **Module Description**: This module introduces students to the key principles of creating products using a design thinking approach. In particular it will focus on a service-centred design methodology, putting the needs and preferences of end users at the centre of the creative process. Students' natural creativity will be structured to find imaginative solutions to given problems. **Module content**: Products as Services; The role of empathy, creativity and rationality in the design process; Design thinking stages; Co-design, co-analysis and co-creation; and Method cards. **Assessment**: Proposal 20%; Design 80%	Spring	20
Advanced Software Engineering B **Module Description**: This module provides students with an opportunity to extend their software engineering knowledge to a level which will permit them to confidently work within industry while appreciating their limitations and future knowledge requirements. **Module content**: A range of advanced engineering techniques will be explored, for example: Graphics and multimedia programming techniques (GDI+ methods for graphics rendering); Multi-dimensional array and collections processing using templates; Image manipulation including animation; and Full development lifecycle activities including agile approaches to design and testing. **Assessment**: Project 50%; Project 50%	Spring	20