

Title of Module: Computer Animation Techniques

Code: COMP09025	SCQF Level: 9 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
-----------------	---	-------------------	---

School:	School of Computing, Engineering and Physical Sciences
---------	--

Module Co-ordinator:	Patrick Walder
----------------------	----------------

Summary of Module

This module will teach advanced animation techniques involving dynamics simulation and scripted behaviour. Dynamics simulation topics covered include particle systems, fluids, hair and cloth. Some basic motion graphics tools and techniques will also be explored.

Scripting topics focus on development of tools for automation of animation tasks, as well as using expressions to control animation and simulation processes. The focus is on solving practical problems rather than learning about programming structures. Practical and theoretical grasp of the techniques covered in lectures and lab exercises will be demonstrated through completion of coursework assignments.

- This module embeds the key “I am UWS” graduate attributes and in particular: Universal(keywords), Work Ready(keywords) and Successful (keywords) Academic Universal Critical Thinker Analytical Inquiring Work Ready Knowledgeable Digitally Literate Problem-solver Successful Autonomous Innovative Personal Universal Culturally aware Work Ready Effective communicator Motivated Successful Creative Professional Universal Research-minded Work Ready Enterprising Successful Transformational

Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
✓	✓				

Face-To-Face
Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

Blended
A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered “blended” if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

Fully Online
Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

HybridC
Online with mandatory face-to-face learning on Campus

HybridO
Online with optional face-to-face learning on Campus

Work-based Learning
Learning activities where the main location for the learning experience is in the workplace.

Campus(es) for Module Delivery

The module will normally be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/ Online Learning:	Other:
----------	------	-----------	--------------	---------	----------------------------------	--------

✓						
Term(s) for Module Delivery						
(Provided viable student numbers permit).						
Term 1		Term 2	✓	Term 3		

[\[Top of Page\]](#)

Learning Outcomes: (maximum of 5 statements)	
<p>On successful completion of this module the student will be able to:</p> <p>L1. Demonstrate knowledge and understanding of 3D dynamics simulation methods for animation of fluids, particles, hair and cloth systems</p> <p>L2. Demonstrate the ability to implement scripting methods to support the generation of complex animated scenes</p> <p>L3. Apply advanced animation techniques in order to accurately simulate real-world processes</p>	
Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	<p>SCQF Level 9.</p> <p>Develop understanding of key concepts in scripting and dynamics simulation used in the 3D animation industry.</p> <p>Selection of appropriate techniques and strategies used in production of 3D simulations using current industry standard tools.</p>
Practice: Applied Knowledge and Understanding	<p>SCQF Level 9.</p> <p>Application of techniques in dynamics simulation to accurately simulate real world dynamic systems.</p> <p>Carrying out research into real world dynamical systems and applying this understanding within the context of 3D computer animation.</p>
Generic Cognitive skills	<p>SCQF Level 9.</p> <p>Characterisation of problems in dynamics simulation, and relating these to equivalent real world situations.</p> <p>Identification of appropriate scripting solutions for complex animation tasks.</p>
Communication, ICT and Numeracy Skills	<p>SCQF Level 9.</p> <p>Development of the numeric skills and techniques necessary to implement dynamics simulation techniques, and to study the mechanics of movement.</p> <p>Critical awareness of a range of complex software tools used for 3D simulations.</p>

Autonomy, Accountability and Working with others	SCQF Level 9. Students will engage in individual projects but will be expected to subject their work to review by lecturing staff and their peers.	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code: COMP08013	Module Title: 3D Asset Production 1
	Other:	
Co-requisites	Module Code:	Module Title:

* Indicates that module descriptor is not published.

[\[Top of Page\]](#)

Learning and Teaching	
<p>The module will be delivered by means of lab-based sessions aimed at developing relevant knowledge and skills. Classes will introduce and develop the essential underlying concepts common to dynamics simulation processes, and apply these to specific application areas. Key concepts and methods in scripting for 3D animation will also be explored. The sessions will allow students to put into practice what they have learned. Exercises will primarily be delivered via video tutorials. Student knowledge will be assessed through practical assignments that entail implementation a range of techniques covered in the module.</p>	
<p>Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:</p>	<p>Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)</p>
Laboratory/Practical Demonstration/Workshop	36
Lecture/Core Content Delivery	12
Independent Study	152
	200 Hours Total
<p>**Indicative Resources: (eg. Core text, journals, internet access)</p>	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Notes and online resources Or Other suitable reference/text book covering animation techniques.</p> <p>Palamar, T. (2016). Mastering Autodesk Maya 2016. Indianapolis, Indiana: Sybex, A Wiley Brand.</p> <p>Keller, E. and Dayan, M. (2013). Maya visual effects : the innovator's guide. New York: Autodesk.</p>	
<p>(**N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)</p>	

Engagement Requirements

In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the

relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: [Academic engagement procedure](#)

Where a module has Professional, Statutory or Regulatory Body requirements these will be listed here: Students are expected to demonstrate engagement through submission of all coursework and attendance at scheduled lab and lecture sessions. Students should inform the lecturer of any external circumstance requiring non-attendance. Missing any session without good reason and communication may result in removal from the module. Failure to submit coursework may also result in the removal from the module.

[\[Top of Page\]](#)

Supplemental Information

Programme Board	Computing
Assessment Results (Pass/Fail)	No
Subject Panel	Creative Computing
Moderator	Peter Satera
External Examiner	S Kennedy-Parr
Accreditation Details	N/A
Version Number	2.09

[\[Top of Page\]](#)

Assessment: (also refer to Assessment Outcomes Grids below)

Practical (100%) [Two practical assignments, to be submitted in weeks 8 and 13 of the semester] Formative exercises will be incorporated into the lab tasks to enable students to gain feedback on their understanding of the module contents.

(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed.

(ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Handbook.)

Assessment Outcome Grids (Footnote A.)

Component 1					
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Portfolio of practical work	✓	✓	✓	100	0
Combined Total For All Components				100%	0 hours

Footnotes

A. Referred to within Assessment Section above

B. Identified in the Learning Outcome Section above

[\[Top of Page\]](#)

Note(s):

1. More than one assessment method can be used to assess individual learning outcomes.
2. Schools are responsible for determining student contact hours. Please refer to University Policy on

contact hours (extract contained within section 10 of the Module Descriptor guidance note). This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

Equality and Diversity

The University policies on equality and diversity will apply to this module: the content and assessment are based on the ability to communicate in English but are otherwise culture-neutral. This module is almost entirely computer based and students must be proficient computer users within a windows, icons and mouse pointer environment with the use of suitable aids where required. When a student discloses a disability an enabling support advisor will agree the appropriate adjustments to be made, consulting with the module coordinator if necessary. Further guidance available from Student Services, Enabling Support Co-ordinators or the University's Equality and Diversity Co-ordinator. [UWS Equality and Diversity Policy](#)

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

2014 University of the West of Scotland
University of the West of Scotland is a Registered Scottish Charity.
Charity number SC002520.

[Copyright & Privacy](#) | [FOI](#) | [Accessibility](#)