Module Descriptor

Title	Computer Animation Techniques		
Session	2025/26	**Status**	
Code	COMP09025	**SCQF Level**	9
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**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.

Module Delivery Method	**On-Campus[1]** ☒	**Hybrid[2]** ☐	**Online[3]** ☐	**Work -Based Learning[4]** ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☐ London ☒ Paisley	☐ Online / Distance Learning ☐ Other (specify)	
Terms for Module Delivery	Term 1 ☐	Term 2 ☒	Term 3 ☐	

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Demonstrate knowledge and understanding of 3D dynamics simulation methods for animation of fluids, particles, hair and cloth systems
L2	Demonstrate the ability to implement scripting methods to support the generation of complex animated scenes
L3	Apply advanced animation techniques to accurately simulate real-world processes
L4	
L5	

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)	**SCQF 9** Develop understanding of key concepts in scripting and dynamics simulation used in the 3D animation industry. Selection of appropriate techniques and strategies used in production of 3D simulations using current industry standard tools.
Practice: Applied Knowledge and Understanding	**SCQF 9** Application of techniques in dynamics simulation to accurately simulate real world dynamic systems. Carrying out research into real world dynamical systems and applying this understanding within the context of 3D computer animation.
Generic Cognitive skills	**SCQF 9** Characterisation of problems in dynamics simulation and relating these to equivalent real-world situations. Identification of appropriate scripting solutions for complex animation tasks.
Communication, ICT and Numeracy Skills	**SCQF 9** Development of the numeric skills and techniques necessary to implement dynamics simulation techniques, and to study the mechanics of movement. Critical awareness of a range of complex software tools used for 3D simulations.
Autonomy, Accountability and Working with Others	**SCQF 9** Students will engage in individual projects but will be expected to subject their work to review by lecturing staff and their peers.

Prerequisites	**Module Code** COMP08013	**Module Title** 3D Asset Production 1
	Other Equivalent module for direct entry.	

Co-requisites	Module Code	Module Title

Learning and Teaching
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours. The module is delivered as 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 involve implementation of a range of techniques covered in the module.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Laboratory / Practical Demonstration / Workshop	36
Lecture / Core Content Delivery	12
Independent Study	152
Please select	
Please select	
Please select	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Notes and online resources Keller, E. and Dayan, M. (2013). Maya visual effects : the innovator's guide. New York: Autodesk.
(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)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** Attendance at all scheduled classes unless with reason for non-attendance. Submission of all coursework including non-graded class exercises. Clear and timely communication with

reasons for non-attendance or non-submission of/late coursework. Other areas of measure may also be used, including degree of access to University based online teaching resources. Students should note that the University has a minimum 80% attendance requirement in all modules. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Computing**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☒ **Yes** ☐ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Creative Computing
Moderator	Peter Satera
External Examiner	S Kennedy-Parr
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2.10

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
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.
Assessment 2
Assessment 3
(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 Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Portfolio of practical work	☒	☒	☒	☐	☐	100	0

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	hours

Change Control

What	**When**	**Who**
Update to new descriptor format, with minor changes to wording in some sections.	March 2025	