City University of Hong Kong
Course Syllabus

offered by School of Creative Media
with effect from Semester B 2017 /18

Part I Course Overview

Course Title:	Character Animation
Course Code:	SM4124
Course Duration:	One semester
Credit Units:	3
Level:	B4
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☐ Study of Societies, Social and Business Organisations ☐ Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	SM3605 3D Contents Production in Maya / SM2231 3D Animation I - Basic (Waiver may be granted on a case-by-case basis to students who have undertaken Maya Fundamental Training or Equivalent)
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

(A 150-word description about the course)

Character animation is an important and specialized area of the animation process concerning the animation of one or more characters featured in an animated production. It is artistically and technically unique from other animation in that it involves the creation of apparent thought and emotion in addition to physical action. This course aims at providing specialized lectures and training in both the "know-why" and the "know-how" of researching, designing, animating and rigging virtual characters using Maya 3D technologies. Students will learn how to use appropriate techniques to portray character personality, create fluid body motion and organic movement, staging gesture, weight, thought, action & reaction, lips-sync, and acting with an emphasis on character building and storytelling. Besides, students will discover the technical aspect and process of character rig mechanics for non-human and realistic biped virtual character.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs[#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Portray 3D character personality in form of body language, body movement, gesture, weight, expression, action & reaction, staging, acting and performance with an emphasis on storytelling.			✓	✓
2.	Communicate ideas for character design and development in the form of creative research		✓	✓	✓
3.	Use the technical know-how for Maya 3D character animation and rigging			✓	✓
4.	Synthesise and communicate ideas visually in the form of 3D character animation		✓	✓	✓
5.	Demonstrate problem-solving and project management skills		✓	✓	✓
6.	Critically evaluate and appreciate the form of character animation		✓		
7. ^	Self-exploration and self-reflection of the subject matter in form of creative research and final character animation project		✓	✓	
		100%			

** If weighting is assigned to CILOs, they should add up to 100%.*

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

^ Negotiated Learning Outcome (NLO) explicitly articulating the elements of Discovery oriented learning.

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: *Accomplishments*
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative

works/new artefacts, effective solutions to real-life problems or new processes.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.							Hours/week (if applicable)
		1	2	3	4	5	6	**7**	
- Self-exploration - Self-reflection	Self-exploration of Character Design & Development, and final Self-reflection Report writing		✓				✓	✓	
- Case study - Screening - Demonstration - Practices - Discussion	Regular lecture, workshop, screening and discussion of - Character Design & Development - Body Language, Body Movement, Gesture, Weight, Expression, Action & Reaction, Staging, Seven Essential Acting Concepts; Rudolph Laban Movement Theory, Eight LMA Efforts; - Staging Multiple Characters; - Staging Standing – The Still Action - Portraying Character Personality	✓	✓	✓					
- Case study - Screening - Demonstration - Practices - Discussion	Regular lecture, workshop, screening and discussion of - Effort Animation; - Walk and Run Animation - Lip Sync and Facial Animation with Voice Recording - Jump, Climb, Push and Pull Animation - Character Rig Mechanics and Rigging for 3D Virtual Characters	✓		✓			✓		
- Demonstration - Practices - Problem Solving - Discussion	Individual Maya 3D character animation exercises on: - Staging Multiple Characters - Staging Standing – The Still Action - Portraying Character Personality - Effort Animation; - Walk and Run Animation - Lip Sync and Facial Animation with Voice Recording - Character Rig Mechanics and Rigging for 3D Virtual Characters	✓		✓	✓	✓	✓		
- Project Execution and Management - Problem Solving - Screening - Presentation - Critique - Discussion	Individual Maya 3D character animation project execution and management. This project is focus on the application and illustration of action & reaction between two characters with jump, climb, push, pull, thought and demonstrate the understanding of illustrating of weight, speed, impact, physical interaction with rigid objects and characters and character acting & performance visually and aesthetically in the form of Maya 3D character animation without the use of voice-over, dialog nor subtitle.	✓		✓	✓	✓	✓	✓	

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.							Weighting*	Remarks
	1	2	3	4	5	6	7		
Continuous Assessment: 100%									
In-Class Workshop	✓	✓	✓	✓		✓		N.A.	Associate with Assignment 1 to 6
Assignment 1 – Self-Exploration: Creative Research on Character Design & Development		✓					✓	14%	
Assignment 2 – Staging	✓		✓		✓	✓		12%	
Assignment 3 – Effort Animation – Fluid Body Motion and Organic Movement	✓		✓	✓	✓	✓		12%	
Assignment 4 – Walk and Run with Performance	✓		✓	✓	✓	✓		12%	
Assignment 5 – Lip Sync and Facial Expression Animation	✓		✓	✓	✓	✓		12%	
Assignment 6 – Final Project	✓		✓	✓	✓	✓	✓	30%	
Assignment 7 – Self-Reflection Report Presentation						✓	✓	8%	
Examination: 0% (duration: , if applicable)									
** The weightings should add up to 100%.*								100%	

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
In-Class Workshop	This assessment task reviews students' participation and performance in discussions, debates and peer critique during the tutorial sessions. The evidence of 'negotiation', the sign of discovery, lies in students' pre-class preparation and interpersonal sensitivity to his/her peer members.	• Active in-class participation, positive listening, strong ability to stimulate class discussion and comment on other points • In-depth pre-class preparation and familiarity with other related materials • Interpret others' views with an open mind and ready to negotiate • Readiness to share personal insight via analysis and synthesis with informed views • Constructively critical, thus facilitating the discovery of new issues	• Active in-class participation, positive listening, ability to initiate class discussion and comment on other points • Adequate pre-class preparation and familiarity with other related materials • Interpret opinions effectively	• Attentive in in-class participation, listening with comprehension, but only infrequently contributing • Adequate pre-class preparation but little familiarity with other related materials • Fair ability in interpreting opinions	• Unmotivated to participate in class discussion or comment on other people's views • Little pre-class preparation and familiarity with other related materials • Poor ability in interpreting opinions	• Unwilling to participate in class discussion and comment on other points, even when requested by the teacher • No pre-class preparation and familiarity with other related materials • Minimal ability in interpreting opinions

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Assignment 1 – Self-Exploration: Creative Research on Character Design & Development **Assignment 2** – Staging **Assignment 3** – Effort Animation – Fluid Body Motion and Organic Movement **Assignment 4** – Walk and Run with Performance **Assignment 5** – Lip Sync and Facial Expression Animation **Assignment 6** – Final Project	These assessments will be graded on: • Ability to understand and demonstrate a critical awareness of the concept, workflow, application, and tool set. • Learning by doing. Reflection of Tool Proficiency / Tool Manipulation / Application of Art and Aesthetic/ Technology / Technological Theory • Ability to plan, execute and evaluate a project. Reflection of Innovation / Originality / Imagination / Lateral Thinking / Production Management / Learning Attitude / Ethics / Presentation Skills	• Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base. • Furthering knowledge through analysis and interpretation of issues discussed using information from a range of source • Exhibited courage to leave comfort zones and test existing boundaries, conventions and rules for unknown possibilities • Project was highly original, involved significant logistical challenges and required frequent	• Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature. • Compare and contrasted information from various sources with own interpretation relating to issues discussed • Demonstrated openness to experiment with new approaches and challenge conventions (comfort zone). • Project was original, challenging and require consistent problem-solving and re-assessment of project methods and goals throughout the duration of the	• Student who is profiting from the university experience; understanding of the subject; ability to develop solutions to simple problems in the material. • Some discussion of issue raised in class, drawing on few sources of information • Experimented with a number of different approaches, techniques & materials to solve problems but did not go beyond conventions (comfort zone). • Project was challenging, require minor problem-solving and re-assessment of project methods and goals throughout the duration of the project; student demonstrated some initiative and self-direction in identifying and overcoming	• Sufficient familiarity with the subject matter to enable the student to progress without repeating the course. • Only little discussion of issues raised in class, drawing on few sources of information. • Some attempts to experiment, but the approaches, techniques & materials used are limited and lacked diversity. • Project was simplistic and required little problem-solving; student demonstrate little initiative and self-direction in identifying and overcoming problems as they arose.	• Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited, or irrelevant use of literature. • No or little discussion of issues raised in class • No or little evidence of attempted experiment • Project was simplistic and required no problem-solving; student failed to demonstrate initiative and self-direction in identifying and overcoming problems as they arose.

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
		problem-solving and re-assessment of project methods and goals throughout the duration of the project; student demonstrated exceptional and frequent initiative and self-direction in identifying and overcoming problems as they arouse.	project; student demonstrated consistent initiative and self-direction in identifying and overcoming problems as they arose.	problems as they arose.		
Assignment 7 – Self-Reflection Report Presentation	This assessment will grade on rationality, clarity and fluency of argument and comment. The threshold of 'discovery' lies in a student's ability to negotiate a position that is informed, defendable, and standing on personal insight.	• Rich content, excellent ability to interpret and integrate various resources • Rigorous organization, coherent structure, systematic composition • Precision in argument, well defined and reasoned points of view grounded in insightful interpretation of existing literature • Readiness to respond to peer	• Adequate content, sufficient ability to integrate various resources based on demand • Reasonable organization with balanced structure and composition • Clear elaboration of ideas that sticks to the point, with clearly differentiated issues, ability to interpret opinions independently • Sufficient	• Adequate content, fair ability to integrate various resources based on demand • Fair organization with adequate structure and composition • Relevant points made to the subject matter in question • Ability to respond to other statements and engage in class discussion	• Weak content, limited use of resources • Poor organization, structure and composition • Relevant points to the subject matter, marginal ability to interpret opinions • Ability to respond to other comments in simple terms	• Inadequate content, no/ irrelevant use of resources • No organization, structure or/and composition • Irrelevant points to the subject matter, no ability to interpret opinions • Fail to respond to other comments

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
		opinion and other views initiated in class discussion • Discussion shed light on new dimensions of the issue	responses to peer comments to sustain a discussion			

Note: All A+/A/A- grade assignment should comply with the highest performance of Discovery-oriented learning.

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

(An indication of the key topics of the course.)

Character Animation, Maya 3D Computer Animation, Principle of Animation, Acting for Animation, Storytelling, Character Design, Creative Research for Character Building, Characterization, Portray Character Personality, Pre-production, Pre-Visualization, Story-reel, Fluid Body Motion, Organic Movement, Staging Gesture, Force, Speed, Weight, Thought, Action & Reaction, Take & Accent, Facial Expression, Lip-Sync, Character Rig Mechanics, Character Rigging, Maya MEL, Apple QuickTime Movie, Photo JPEG, H.264.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	Hooks, Ed. (2003). *Acting for Animators, Revised Edition: A Complete Guide to Performance Animation.* NH, USA:Heinemann Drama
2.	Miller , Eric and Thuriot, Paul and Unay, Jeff. Alias Learning Tools. (2006). *Maya Techniques: Hyper- Real Creature Creation.* Hoboken, NJ: Sybex
3.	Derakhshani, Dariush (2015). *Introducing Autodesk Maya 2016: Autodesk Official Press.* Hoboken, NJ: Sybex
4.	Palamar, Todd (2015). *Mastering Autodesk Maya 2016: Autodesk Official Press.* Hoboken, NJ: Sybex
5.	Autodesk, Inc. (2016). *Autodesk Knowledge Network: Support: Autodesk Maya* https://knowledge.autodesk.com/support/maya/getting-started?sort=score (Accessed November 17, 2016)
6.	Pluralsight LLC. (2016). *Subject: 3D: Animation: Maya Tutorials* http://www.digitaltutors.com/11/training.php?tid=12&cid=5 (Accessed November 17, 2016)

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	Williames, Richard. (1940). *The Animator's Survival Kit: A Manual of Methods, Principles, and Formulas for Classical, Computer, Games, Stop Motion, and Internet Animators.* London, United Kingdom: Faber and Faber Ltd.
2.	Whitaker, Harold and Halas John (2002). *Timing for Animation.* New Ed edition. St. Louis, USA: Focal Press, Inc.
3.	Johnston, Ollie and Thomas, Frank. (1995*). The Illusion of Life: Disney Animation.* (Rev Sub edition). CA, USA: Disney Editions
4.	Creative Crash: High Quality 3D Models, Scripts, Plugins and More! (2012) http://www.creativecrash.com/maya/tutorials (Accessed November 17, 2016)
5.	Asifa-Hollywood: The International Animated Film Society. (2008) http://www.asifa-hollywood.org/ (Accessed November 17, 2016)
6.	Animation Magazine Inc. (2007) http://www.animationmagazine.net/ (Accessed November 17, 2016)
7.	Lasseter, John. (1987). Tricks to Animating Characters with a Computer. https://www.siggraph.org/education/materials/HyperGraph/animation/character_animation/principles/lasseter_s94.htm (Accessed November 17, 2016)
8.	Owen, G. Scott (2000). Computer Animation http://www.siggraph.org/education/materials/HyperGraph/animation/anim0.htm (Accessed November 17, 2016)
9.	Owen, G. Scott (1999). Principles of Traditional Animation Applied to 3D Computer Animation. https://www.siggraph.org/education/materials/HyperGraph/animation/character_animation/principles/prin_trad_anim.htm (Accessed November 17, 2016)