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:	Digital Composition
Course Code:	SM3701
Course Duration:	One semester
Credit Units:	3
Level:	B3
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)*	Nil
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)

Digital composition plays an important role in the digital content creation and entertainment industry especially for creating the digital film, video, animation, video games and visual effects production to organise, manipulate and integrate pictorial information from multiple sources into a single, seamless whole. It also aesthetically enhances and reinforces the believability and a better visual storytelling in context. This subject teaches both the "know-why" and the "know-how" of digital composition from the basic visual component & structure, art & concept of composition and editing, to practical application in digital live action video production. From this subject, the student will learn how to use appropriate principles and techniques for representation, manipulation and composition of pictorial information to synthesise and communicate ideas, which including digital techniques for green screen studio production, professional camera and lighting setup and operation, recording, transcoding, editing, manipulation, alpha masking, layers blending, integration, transformation, chrominance keying, image tracking, colour correction, grading, and the final delivery.

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.	Self-exploration and self-reflection of the subject matter		✓		
2.	Recognise the principles of visual component & structure, art & concept of composition and editing of pictorial information for visual storytelling in the form of life action digital video. Recognise the knowledges and techniques for digital video recording, manipulation, editing, composition, and the associated production workflow including setup and operation of the hardware, software, and the green screen studio.		✓		
3.	Use the aesthetic and technical know-how for seamless believable digital video composition, manipulation, editing and green screen studio production.			✓	✓
4.	Synthesize and communicate ideas visually in the form of seamless believable digital video composition, manipulation and editing.			✓	✓
5.	Demonstrate problem-solving skill and project management skills			✓	✓
6.^	Critically evaluate and appreciate the form of seamless believable digital video composition, manipulation and editing.		✓		
** If weighting is assigned to CILOs, they should add up to 100%.*		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	
Self-exploration and self-reflection	- To explore, discover and critique on student's knowledge and technique of the application of Principles of Visual Structure, Basic Visual Component: Space and its Primary Sub-Components: Deep Space, Flat Space, Limited Space and Ambiguous Space.	✓						
Lectures, Case Studies, Demonstrations and Discussion	Recognize the: - Principles of Visual Component & Structure, Basic Visual Component: Space and its Primary Sub-Components: Deep Space, Flat Space, Limited Space and Ambiguous Space. Art & Concepts of Composition. - Basic Camera, Light and Movement. - Digital Representation of Pictorial Information, Basic of TV & Digital Video, Common File Format and Codec; Intermediate Codec; Color Subsampling; Production Pipeline and Hardware - Introduction to Injection, Transcoding, Intermediate Codec, Asset Management and Archive; - Art & Concept of Editing; Editing Workflow. - Camera Dynamic Range, Log, De-Log, LUTs, Use of Waveform Scope; - Lighting Concern and Studio Setup for Chrominance Keying. - Layers, Blending, Mask, Transformation, and Chrominance Keying - Image Stabilization and Tracking - Color Theories, Color Correction, Grading and the Workflow.		✓					
Practical In-Class and In-Studio Workshop & Assignments	Hands-on Practice and Assignments on the: - Basic operation of DSLR Camera, Professional Studio Camera and the Use of Light Meter. - Basic Composition With Layers, Blending, Masks and Transformation - Transcoding Using Compressor and Turbo264HD; Editing Workflow, Software Setup, UI, Media and Project Management. - Basic Digital Video Editing, Editing Software Setup, UI, Media & Project Management. - Digital Composition with 2D & 3D Layers, Workflow, Software UI, Mask and Basic Chrominance Keying. - Camera Dynamic Range, Log, De-Log and LUTs; Use of Waveform Scope; - Green Screen Studio Workshop: Safety Briefing, Studio Facility Introduction and Chrominance Key Setup - Image Stabilization and Tracking - Color Correction, Grading and the Workflow.			✓	✓	✓		
Presentation, Critique and Discussion	- Final Project Pre-production Presentation, Critique & Discussion; - Projects Screening, Presentation, Critique & Discussion						✓	

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		
Continuous Assessment: 100%								
- Assignment 1 – Self-Exploration & Reflection	✓							
- Assignment 2 – Basic Composition with Layers, Masks & Transformation		✓	✓					
- Assignment 3 – Chrominance Keying Composition (Individual Project with Group Shooting)			✓	✓	✓	✓		
- Assignment 4 – Final Group Project			✓	✓	✓	✓		
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)
1. Assignment	This assessment task reviews the student's ability to understand and demonstrate critical awareness of the concept, workflow, application, and tool set. It reinforce learning by doing - a reflection of aesthetic and artistic sense / storytelling skill /tool proficiency / tool manipulation / application of technology / technological theory It also review the student's ability to plan, execute and evaluate a project – a reflection of innovation / originality / imagination / lateral thinking / production management / learning attitude / ethics.	• 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	• 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	• 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	• 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)
		significant logistical challenges and required frequent 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.	and re-assessment of project methods and goals throughout the duration of the project; student demonstrated consistent initiative and self-direction in identifying and overcoming problems as they arose.	and goals throughout the duration of the project; student demonstrated some initiative and self-direction in identifying and overcoming problems as they arose.		
2. Self-exploration Daily (Scrapbook) and Reflection Report	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	• 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,	• 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	• 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)
		grounded in insightful interpretation of existing literature • Readiness to respond to peer opinion and other views initiated in class discussion • Discussion shed light on new dimensions of the issue	with clearly differentiated issues, ability to interpret opinions independently • Sufficient responses to peer comments to sustain a discussion	statements and engage in class discussion		
3. Presentation and Critique	This assessment will grade on content and fluency of presentation. Students should show their co-operation to conduct a well-organized presentation with their own argument and evidence from readings and notes. The threshold of 'discovery' lied in a student's self-initiatives to conduct additional research and to personalize theories for her/his personal daily experience.	• Rich, informative content, excellent grasp of the material with in-depth and extensive knowledge of the subject matter • Rigorous organization, coherent structure, and systematic exposition with a strong sense of narrative • Superior presentation	• Adequate content with firm grasp of the material that informs the audience on a subject matter • Reasonable organization, balanced structure and composition • Good verbal communication: comprehensible pronunciation, fluent expression and diction, fair time-management	• Adequate content with comprehensive grasp of the material demonstrating basic knowledge of the subject matter • Fair organization, weak structure and composition • Fair presentation skills: acceptable pronunciation, expression and diction, fair time-management	• Weak content, loose grasp of the general ideas with some knowledge of the subject matter • Poor organization, structure and composition • Poor presentation skills: marginal pronunciation, expression and diction, poor time-management	• Inadequate content, fail to identify the general ideas with knowledge of the subject matter • No organization, structure or/and composition • Poor presentation skills: marginal pronunciation, expression and diction, minimal time-management

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
		skills: distinct pronunciation, fluent expression and appropriate diction, exact time-management • Critical analysis with insightful comments opening up new issues, or suggesting the ability to theorize				

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.)

Digital Composition, Composition Principles, Visual Structure Principles, Digital Video Production Pipeline, Digital Video Signal Connection, Post-production, Digital Video Camcorder, HDSLR, Log Curve, Digital Video Codec, Digital Video Formats, Intermediate Codec, Progressive Scanning, Interlaced Scanning, Co-sited Sampling, 3:2 Pull-down, Image Capture, Injection, Transcoding, De-log, Image Manipulation, Layer Blending, Image Integration, Alpha Channel, Mask, Roto-paint, Wire Removal, Clean Plane, Animation, Matte Painting, Chrominance Keying, Green Screen, Blue Screen, Lighting, Light Metering, Image Tracking, Image Stabilization, Lookup Table (LUT), Super White, Super Black, Color Grading, Color Correction, Color Gamut, Waveform Scope, Vector Scope, Broadcast Save, Arts of Editing, On-Line Editing, Off-Line Editing, Proxy, Blackmagic Design: DaVinci Resolve, Adobe: After Effects, The Foundry: Nuke, Apple: Final Cut Pro X, Autodesk: Smoke, Apple: Compressor, The Foundry: Keylight, Green Screen Studio Setup & Production, Studio Lighting, Light Ratio, Intermediate Codec, Color Subsampling, Apple QuickTime Movie, Apple ProRes, Photo JPEG, H.264, H.265, Slate, Colour Bar, Apple Mac Computer, Apple OS X, Canon EOS C500, Canon C-log, Canon EOS 5D MKII, Sony Alpha a7S II, Video Devices PIX-E7, AJA Ki Pro Quad.

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.	Block, Bruce. (2001). *The Visual Story: Seeing the structure of Film, TV, and New Media* MA, USA: Focal Press
2.	Brinkmann, Ron. (2008). *The Art and Science of Digital Compositing (2nd Edition).* San Diego, CA, USA: Academic Press
3.	Foster, Jeff. (2014). *The Green Screen Handbook: Real-World Production Techniques (2nd Edition).* Hoboken, NJ, USA: Sybex, John Wiley & Sons, Inc.
4.	Van Hurkman, Alexis. (2013). *Color Correction Handbook: Professional Techniques for Video and Cinema (2nd Edition).* Berkeley, CA. USA: Peachpit Press
5.	Scoppettuolo, Dion. (2016). *Learning DaVinci Resolve 12.5: A step-by-step guide to editing and color grading*. Learning-paths.com
6.	Meyer, Chris (2012). *After Effects Apprentice: Real World Skills for the Aspiring Motion Graphics Artist.* MA, USA: Focal Press
7.	Christiansen, Mark. (2013). *Adobe After Effects CC Visual Effects and Compositing Studio Techniques.* CA, USA: Adobe Press
8.	CreativeCow.net: Video-Tutorials: *Blackmagic Design: DaVinci Resolve* (Accessed 30 July 2016) https://library.creativecow.net/tutorials/davinci
9.	Color Grading Central LLC (2016): *Free [Live] Webinar: Free Online Live Davinci Resolve 12.5 Training* (Accessed 30 July 2016) http://www.colorgradingcentral.com/davinci-resolve-tutorials/
10.	CreativeCow.net: Video-Tutorials: *Adobe After Effects Basic* (Accessed 30 July 2016) https://library.creativecow.net/video-tutorials/adobeaftereffectsbasics

2.2 Additional Readings

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

1.	Van Hurkman, Alexis. (2014). *Autodesk Smoke Essentials: Autodesk Official Press.* Hoboken, New Jersey, USA: SYBEX, John Wiley & Sons, Inc.
2.	Autodesk: AREA: *The Smoke Learning Blog* (Accessed 30 July 2016) https://knowledge.autodesk.com/search?search=2017#?p=SMOKE&sort=score
3.	YouTube: *Smoke Learning Channel* (Accessed 30 July 2016) https://www.youtube.com/user/SmokeHowTos
4.	Mulligan, Brian (2014). *Everything You Need to Learn: Autodesk Smoke 2015*. The Beat: Premium Beat: Arbour Interactive Inc. (Accessed 30 July 2016)

	http://www.premiumbeat.com/blog/everything-you-need-to-learn-autodesk-smoke-2015/
5.	The Foundry: Products: Nuke: *Learn Nuke* (Accessed 30 July 2016) http://www.thefoundry.co.uk/products/nuke/learn1/
6	CreativeCow.net: Video-Tutorials: *Apple Final Cut Pro X* (Accessed 30 July 2016) https://library.creativecow.net/video-tutorials/fcpxtechnique