

SM3701: DIGITAL COMPOSITION

Effective Term

Semester A 2026/27

Part I Course Overview

Course Title

Digital Composition

Subject Code

SM - School of Creative Media

Course Number

3701

Academic Unit

School of Creative Media (SM)

College/School

School of Creative Media (SM)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

Digital composition is a crucial aspect of the digital content creation and entertainment industry. It is used in the creation of digital film, video, animation, video games, and digital visual effects (DVFX) production. The purpose of digital composition

is to organise, manipulate, and integrate visual information from various sources to create a seamless and aesthetically pleasing final product. It helps to enhance believability and improve visual storytelling. This subject covers both the theoretical and practical aspects of digital composition, from the fundamental visual components, visual structure, the art and concept of composition and video editing to its practical application in digital live-action video production. Students will learn how to use principles and techniques to represent, manipulate, and compose visual information, as well as how to communicate ideas using digital techniques such as green screen studio production, professional cinema camera and lighting setup and operation, recording, transcoding, colour management, editing, manipulation, alpha masking, layers blending, integration, transformation, chrominance keying, image tracking, colour correction, grading, and final delivery.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if DEC-A1 DEC-A2 DEC-A3 app.)			
1	Self-exploration and self-reflection of the subject matter		x	x	
2	Discuss the art and science of composition, principles of visual components, visual structure, art, and editing of pictorial information for visual storytelling in life-action digital video production. Recognise the knowledge and techniques for digital video recording, manipulation, editing, composition, delivery, file type and format, and the associated production workflow, including studio setup and operation of the hardware, software, and the calibration of the green screen studio.		x	x	
3	Apply composition's aesthetic and technical know-how for seamless, believable digital composition, manipulation, editing, colour correction and grading, and green screen studio production.			x	x
4	Synthesise and convey ideas visually, audibly, and emotionally through the creation of digital videos using digital composition, manipulation, editing, colour correction, grading, and green screen studio production. This involves creative research, pre-visualisation, pre-production, documentation, visualisation, production, and post-production.		x	x	x
5	Demonstrate problem-solving, project management, teamwork, and awareness of attitude and professionalism.		x	x	x
6	Critically evaluate and appreciate the form and aesthetic of cinematography, composition, visual structure, and visual storytelling.		x		

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 real-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.

Learning and Teaching Activities (LTAs)

LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Self-exploration and self-reflection	Students will engage in a self-exploration and recognition of one of the primary visual components - Space and the four basic sub-components of space, namely Deep Space, Flat Space, Limited Space and Ambiguous Space, visually and aesthetically in the form of digital photography and report (caption) writing. Besides, they will engage in writing and presenting course-end self-reflection reports.	1

2	- Case study - Demonstration - Practices - Discussion	Students will participate in lectures, screenings, and discussions covering production workflow and practices. This includes concept generation, pre-visualisation, pre-production, visualisation, production, and post-production. The course will also integrate principles of visual components and visual structure, covering topics such as space and its primary sub-components (deep space, flat space, limited space, and ambiguous space), art and concepts of composition, basic camera, lighting and movement, digital representation of pictorial information, basics of TV and digital video, standard file formats and codecs, intermediate codecs, colour subsampling, production pipeline and hardware, introduction to injection, transcoding, asset management, archive, editing concepts and workflow, camera dynamic range, log, de-log, LUTs, use of waveform scope, lighting concerns, studio setup for chrominance keying, layers, blending, mask, transformation, chrominance keying, image stabilisation and tracking, colour theories, colour correction, grading, and the workflow.	2	
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3	- Case study - Demonstration - Practices - Discussion	Students will engage in practical workshops on the techniques for digital video recording, manipulation, editing, composition, delivery, file type and format, and the associated production workflow, including studio setup and operation of the hardware, software, and the calibration of the green screen studio.	3, 4, 5	
4	- Case study - Presentation - Critique - Discussion - Project Management	- Final Project Pre-production Presentation, Critique & Discussion; - Projects Screening, Presentation, Critique & Discussion	6	

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Assignment 1 – Self-Exploration on Composition - Four Basic Sub-Components of Space	1	20	Composition exercises through photography work	No
2	Assignment 2 - Digital composition Project: Create Limited Space from Still Images to Moving Images	2, 3	15	Digital composition: Masking, layering, blending, and animation exercise from 2D to 2.5D moving images with limited space by using Blackmagic Design DaVinci Resolve	No

3	Assignment 3 – Chrominance Keying Project: Clone and Interact with Yourself (Individual Project with Team Shooting)	3, 4, 5, 6	25	Digital composition: Studio green screen shooting, chrominance keying, masking, layering, blending, animation, colour correction and grading exercise through pre-production, studio production, to post-production by using Blackmagic Design DaVinci Resolve	No
4	Assignment 4 – Final Group Project: Tribute to Zach King's Illusions	3, 4, 5, 6	40	Digital composition: Outdoor shooting, studio green screen shooting, chrominance keying, masking, layering, blending, animation, tracking, and colour correction and grading exercise through pre-production, outdoor and studio production, to post-production by using Blackmagic Design DaVinci Resolve	No

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)**Assessment Task**

Assignment 1 – Self-Exploration on Composition - Four Basic Sub-Components of Space

Criterion

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, defensible, and standing on personal insight.

Excellent (A+, A, A-)

- Rich content, excellent ability to interpret and integrate various resources
- Rigorous organisation, 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 opinion and other views initiated in class discussion
- Discussion shed light on new dimensions of the issue

Good (B+, B, B-)

- Adequate content, sufficient ability to integrate various resources based on demand
- Reasonable organisation with balanced structure and composition
- Clear elaboration of ideas that sticks to the point, with clearly differentiated issues, ability to interpret opinions independently
- Sufficient responses to peer comments to sustain a discussion

Fair (C+, C, C-)

- Adequate content, fair ability to integrate various resources based on demand
- Fair organisation 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

Marginal (D)

- Weak content, limited use of resources
- Poor organisation, structure and composition
- Relevant points to the subject matter, marginal ability to interpret opinions
- Ability to respond to other comments in simple terms

Failure (F)

- Inadequate content, no/ irrelevant use of resources
- No organisation, structure or/and composition
- Irrelevant points to the subject matter, no ability to interpret opinions

Assessment Task

Assignment 2 - Pre-production: Create Limited Space with Still Images

Assignment 3 – Chrominance Keying Project: Clone and Interact with Yourself (Individual Project with Team Shooting)

Assignment 4 – Final Group Project: Tribute to Zach King's Illusions

Criterion

- Ability to discuss 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

Excellent (A+, A, A-)

- Strong evidence of original thinking; good organisation, capacity to analyse and synthesise; 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
- The project was highly original, involved significant logistical challenges and required frequent problem-solving and re-assessment of project methods and goals throughout the project; the student demonstrated exceptional and frequent initiative and self-direction in identifying and overcoming problems as they arose.

Good (B+, B, B-)

- Evidence of grasp of the subject, some evidence of critical capacity and analytic ability, reasonable understanding of issues, evidence of familiarity with literature.
- Compare and contrast information from various sources with own interpretation relating to issues discussed

- Demonstrated openness to experiment with new approaches and challenge conventions (comfort zone).
- The project was originally challenging and required consistent problem-solving and re-assessment of project methods and goals throughout the project; the student demonstrated consistent initiative and self-direction in identifying and overcoming problems as they arose.

Fair (C+, C, C-)

- Students who profit from the university experience have an understanding of the subject and have the ability to develop solutions to simple problems in the material.
- Some discussion of the issue raised in class, drawing on a few sources of information
- Experimented with several different approaches, techniques, and materials to solve problems but did not go beyond conventions (comfort zone).
- The project was challenging and required minor problem-solving and re-assessment of project methods and goals throughout the project; the student demonstrated some initiative and self-direction in identifying and overcoming problems as they arose.

Marginal (D)

- Sufficient familiarity with the subject matter enables students to progress without repeating the course.
- Only a little discussion of issues raised in class, drawing on a few sources of information.
- There are some attempts to experiment, but the approaches, techniques, and materials used are limited and lack diversity.
- The project was simplistic and required little problem-solving. The student demonstrated little initiative and self-direction in identifying and overcoming problems as they arose.

Failure (F)

- 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
- The project was simplistic and required no problem-solving; the student failed to demonstrate initiative and self-direction in identifying and overcoming problems as they arose.

Additional Information for AR

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

Part III Other Information

Keyword Syllabus

Digital Composition

- Composition Principles and Aesthetics
- Visual Structure

Digital Video Production Pipeline

- Digital Video Signal Connections
- Post-Production Processes
- Linear and Non-linear/Log Processing

Cameras, Recording and Studio Operation

- Digital Cinema Camcorders and Lenses
- Mirrorless Digital Cameras
- RAW and Log Recording Formats
- Log Curve and Lookup Tables (LUTs)
- Sony High-Dynamic-Range Log Curve (S-Log3) with Color Space (S-Gamut3.Cine)
- Canon C-Log
- Lighting Techniques
- Light Metering

Digital Video Formats

- Digital Negative (RAW)
- Digital Video Codecs
 - Acquisition Video Codec
 - Intermediate Video Codec
 - Delivery Video Codec
- Apple QuickTime Movie
- Apple ProRes
- H.264 and H.265

Scanning Techniques

- Progressive Scanning
- Interlaced Scanning
- Chroma Subsampling (Ratio-Based)
- 3:2 Pulldown

Media Management

- Media Injection
- Metadata
- Transcoding
- De-log

Image Manipulation

- Layer Blending
- Image Integration
- Generative AI Image Manipulation
- Alpha Channel
- Masks
- Depth Maps
- Image Patching
- Roto-Painting
- Wire Removal
- Clean Plate

Animation Techniques

- Matte Painting
- Chrominance Keying (Green Screen and Blue Screen)
- Image Tracking
- Image Stabilization
- Super White and Super Black

Color Management

- DaVinci Resolve Color Management
- ACES
- Color Grading and Color Correction
- Color Gamut and Color Space
- Color Space Transformation
- Waveform Scope
- Vector Scope
- Broadcast Save

Editing Techniques

- Arts of Editing
- Online Editing
- Offline Editing
- Proxy Editing

Software and Equipment

- Blackmagic Design: DaVinci Resolve Studio
- Apple: Compressor
- Green Screen Studio Setup and Production
- Studio Lighting and Light Ratios
- Slate and Color Bar

- Apple Mac Computer and macOS

Reading List

Compulsory Readings

Title	
1	Block, Bruce. (August 5, 2020). The Visual Story: Creating the Visual Structure of Film, TV, and Digital Media. 3rd edition. Milton Park, Abingdon-on-Thames, Oxfordshire, England, UK: Routledge.
2	Katz, Steven. D. (April 6, 2011). Film Directing Cinematic Motion, 2nd Edition: A Workshop for Staging Scenes. City, CA, USA: Michael Wiese Productions Studio
3	Foster, Jeff. (2014). The Green Screen Handbook: Real-World Production Techniques (2nd Edition). Hoboken, NJ, USA: Sybex, John Wiley & Sons, Inc.
4	Blackmagic Design Pty. Ltd. (n.d.). Blackmagic Design Channel. YouTube. Retrieved May 30, 2024, from https://www.youtube.com/@BlackmagicDesignOfficial
5	Blackmagic Design Pty. Ltd. (n.d.). DaVinci Resolve 19 Training. Blackmagic Design. Retrieved May 30, 2024, from https://www.blackmagicdesign.com/hk/products/davinciresolve/training

Additional Readings

Title	
1	Nil