

SM5307: DIGITAL MEDIA AND MOVING IMAGES

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

Digital Media and Moving Images

Subject Code

SM - School of Creative Media

Course Number

5307

Academic Unit

School of Creative Media (SM)

College/School

School of Creative Media (SM)

Course Duration

One Semester

Credit Units

3

Level

P5, P6 - Postgraduate Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

The objectives of this studio course are twofold: to introduce computer programming as an artistic medium and to explore innovative and alternative forms of expressions for moving image-based media. Students will experiment with Processing

and Max/MSP/Jitter, two artist-friendly programming environments, to develop their creative ideas and implement their projects. They are expected to design and create their own tools to address the specific artistic and technical needs as required by their respective projects. One of the main ideas of this class is to foster a holistic approach of moving image and audio-visual art-making in which the technology and artistic form of the work are closely integrated and informed by each other. Topics such as experimental cinema, new media art, computer music and media performance will be addressed in class in order to facilitate a cross-disciplinary understanding of the various contexts and issues of contemporary moving image practices.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if DEC-A1 app.)		DEC-A2	DEC-A3
1	Describe the basic concepts of computer programming for moving image and audio-visual media		x	x	
2	Apply digital media and computational techniques in art-making				x
3	Identify the characteristics of digital audio-visual art		x	x	
4	Produce artworks with the use of algorithmic techniques and transform basic technical competence into a unique style or personal signature				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	Workshops	Technical instruction on Processing and Max/MSP/Jitter	1	
2	Workshops	Technical instruction on the use of sensors, actuators, controllers and DMX lighting equipment	2	
3	Lectures/Screenings	Explain key concepts and introduce recent works in the field of digital art, media performance and contemporary audio-visual art	3	

4	Presentations/Critiques	Students are required to present their final projects during group critique sessions	4	
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Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Project #1	1, 2, 3	30	-	Yes
2	Final Project & presentation	1, 2, 3, 4	70	-	No

Continuous Assessment (%)

100

Examination (%)

0

Minimum Continuous Assessment Passing Requirement (%)

0

Minimum Examination Passing Requirement (%)

0

Assessment Rubrics (AR)**Assessment Task**

Creative Project (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Students should demonstrate ability to utilize primary and secondary sources, execute creative ideas and projects. The threshold of 'discovery' lies in a student's proactively turning theory into praxis, to transform course material into self-owned authorship.

Excellent

(A+, A, A-) - Work has strong affective quality and the articulation of personal styles and signature
 - Excellent appreciation, exploration and/or application of the aesthetic and expressive qualities of the medium
 - Work raises questions and instill insights about the process of conception, creative strategization and production
 - Innovative exploration by combining knowledge from different disciplines (e.g. mathematics, psychology, physics, anthropology, etc.) to create an inter-disciplinary project
 - Efficient adjustment of plans and strategies in response to resources (time, space, equipment, etc) available with constructive adjustment

Good

(B+, B, B-) - Strong appreciation, exploration and/or application of the aesthetic and expressive qualities of the medium
 - Ability to create project/ work that demonstrate the processes of thinking and creative exploration
 - Proper adjustment of plans and strategies in response to resources (time, space, equipment, etc) available and constructive feedback/ suggestions

Fair

(C+, C, C-) - Basic appreciation and/or application of the aesthetic and expressive qualities of the medium
 - Limited ability to create project/ work that demonstrate the processes of thinking and creative exploration
 - Adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

Marginal

(D) - Marginal appreciation of the aesthetic and expressive qualities of the medium

- Marginal ability to create project/ work that demonstrate the processes of thinking and creative exploration
- Limited adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

Failure

(F) - No appreciation of the aesthetics and expressive qualities of the medium

- Fail to create project/ work that demonstrate the processes of thinking and creative exploration
 - Minimal adjustment of plans and strategies in response to resources (time, space, equipment, etc) available
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Assessment Task

Presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

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.

Excellent

(A+, A, A-) - 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 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

Good

(B+, B, B-) - 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

Fair

(C+, C, C-) - 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

Marginal

(D) - 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

Failure

(F) - 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
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Assessment Task

Creative Project (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Students should demonstrate ability to utilize primary and secondary sources, execute creative ideas and projects. The threshold of 'discovery' lies in a student's proactively turning theory into praxis, to transform course material into self-owned authorship.

Excellent

- (A+, A, A-) - Work has strong affective quality and the articulation of personal styles and signature
- Excellent appreciation, exploration and/or application of the aesthetic and expressive qualities of the medium
 - Work raises questions and instill insights about the process of conception, creative strategization and production
 - Innovative exploration by combining knowledge from different disciplines (e.g. mathematics, psychology, physics, anthropology, etc.) to create an inter-disciplinary project
 - Efficient adjustment of plans and strategies in response to resources (time, space, equipment, etc) available with constructive adjustment

Good

- (B+, B) - Good appreciation, exploration and/or application of the aesthetic and expressive qualities of the medium
- Ability to create project/ work that demonstrate the processes of thinking and creative exploration
 - Proper adjustment of plans and strategies in response to resources (time, space, equipment, etc) available and constructive feedback/ suggestions

Marginal

- (B-, C+, C) - Marginal appreciation of the aesthetic and expressive qualities of the medium
- Marginal ability to create project/ work that demonstrate the processes of thinking and creative exploration
 - Limited adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

Failure

- (F) - No appreciation of the aesthetics and expressive qualities of the medium
- Fail to create project/ work that demonstrate the processes of thinking and creative exploration
 - Minimal adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

Assessment Task

Presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

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.

Excellent

- (A+, A, A-) - 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 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

Good

- (B+, B) - 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

Marginal

- (B-, C+, C) - 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

Failure

- (F) - 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

Part III Other Information

Keyword Syllabus

Digital literacy and creativity, Max/MSP/Jitter, Processing, software prototyping and design, computational cinema, video art, new media art, media performance, algorithmic techniques in art-making

Reading List

Compulsory Readings

	Title
1	Programming:
2	Cipriani, Alessandro. Electronic Music and Sound Design - Theory and Practice with Max/MSP. Rome: ConTempoNet, 2010.
3	Elsea, Peter. Peter Elsea's Max Tutorials (from ftp://arts.ucsc.edu/pub/ems/maxtutors/)
4	Levin, Golan. "Computer Vision for Artists and Designers: Pedagogic Tools and Techniques for Novice Programmers", 2006. (from http://www.flong.com/writings/)
5	Maeda, John. Design by numbers. Cambridge, Mass: MIT Press, 1999.
6	Manzo, V.J. Max/MSP/Jitter for music : a practical guide to developing interactive music systems for education and more. New York : Oxford University Press, 2011.
7	Reas, Casey and Ben Fry. Processing: a programming handbook for visual designers and artists. Cambridge, Mass: MIT, 2014.
8	Shiffman, Daniel. Learning Processing: a beginner's guide to programming images, animation, and interaction. Amsterdam; Boston : Morgan Kaufmann/Elsevier, c2008.
9	Dixon, Steve. Digital performance: a history of new media in theater, dance, performance art, and installation. Cambridge, Mass. : MIT Press, 2007.
10	Faulkner, Michael (ed.). VJ: audio-visual art + VJ culture. London: Laurence King, 2006.
11	Reas, Casey. Form+Code in Design, Art, and Architecture. New York : Princeton Architectural Press, 2010.
12	Shaw, Jeffrey (ed.). Future cinema: the cinematic imaginary after film. Cambridge, Mass: MIT, 2003.
13	Youngblood, Gene. Expanded cinema. New York: Dutton, 1970.

Additional Readings

	Title
1	Programming/software tools
2	- ARTToolkit- http://www.aranarproductions.com/artk/
3	- CNMAT external downloads- http://cnmat.berkeley.edu/downloads
4	- CV objects- http://jmpelletier.com/cvjit/
5	- CCV- http://ccv.nuigroup.com/
6	- EyesWeb- http://www.infomus.org/EywMain.html
7	- EyeCon- http://eyecon.palindrome.de/
8	- Field- http://openendedgroup.com/field/

9	- GEM - http://gem4mac.sourceforge.net/
10	- Isadora- http://www.troikaranch.org/isadora.html/
11	- jit.kinect- http://jmpelletier.com/freenect/
12	- JMax- http://freesoftware.ircam.fr/rubrique.php?id_rubrique=14
13	- Korsakow- http://www.korsakow.com/ksy/index.html
14	- Keyworx- http://www.keyworx.org/
15	- Lily- http://www.lilyapp.org/
16	- Max- http://www.cycling74.com/
17	- Modul8- http://www.modul8.ch/
18	- Mrmr- http://poly.share.dj/projects/%23mrmr
19	- NodeBox- http://nodebox.net/code/index.php/Home
20	- Open Sound Control (OSC)- http://opensoundcontrol.org/
21	- oscP5- http://www.sojamo.de/libraries/oscP5/index.html
22	- OpenFrameworks- http://www.openframeworks.cc/
23	- Processing- http://processing.org/
24	- Pure Data - http://puredata.info/
25	- reacTIVision- http://reactivision.sourceforge.net/
26	- Resolume - http://www.resolume.com/
27	- Syphon - http://syphon.v002.info/
28	- TouchDesigner- http://www.touch077.com/
29	- Tx-transform- http://www.tx-transform.com/Eng/index.html
30	- Vidvox - http://vidvox.net/
31	- Voodoo camera tracker - http://www.digilab.uni-hannover.de/docs/manual.html
32	- VPT- http://hcgilje.wordpress.com/vpt6-manual/
33	- VVVV- http://vvvv.org/tiki-index.php/
34	Hardware
35	- Arduino - http://www.arduino.cc/
36	- Eowave - http://www.eowave.com/
37	- Electrotap - http://www.electrotap.com/
38	- ENTTEC (DMX) - http://www.enttec.com/
39	- iCube - http://infusionsystems.com/
40	- Imaging Source - http://www.theimagingsource.com
41	- Ms Pinky - http://www.mspinky.com/
42	- Phidgets - http://www.phidgets.com/
43	- Unibrain - http://www.unibrain.com/
44	Artists/People/Groups
45	- Alva Noto - http://www.alvanoto.com/
46	- Anti VJ - http://www.antivj.com/
47	- Avatar - http://www.lenomdelachose.org/
48	- Blast Theory - http://www.blasttheory.co.uk/
49	- Burst TV - http://www.burst-tv.net

50	- Camille Utterback - http://www.camilleutterback.com/
51	- Casey Reas - http://reas.com/
52	- Christian Moeller - http://www.christian-moeller.com/
53	- Cory Arcangel- http://beigerecords.com/cory/
54	- D-fuse - http://www.dfuse.com/
55	- Diane Landry- http://www.clic.net/~dilandry/
56	- Daniel Shiffman - http://www.shiffman.net/
57	- David Rokeby- http://homepage.mac.com/davidrokeby
58	- Daito Manabe- http://www.daito.ws/
59	- Daniel Rozin- http://www.smoothware.com/danny/newbio.html
60	- Daniel Sauter- http://daniel-sauter.com/
61	- deKam- http://www.node.net/main.shtml
62	- Dumbtype- http://dumbtype.com/
63	- Exonemo - http://www.exonemo.com/
64	- Golan Levin- http://www.flong.com/
65	- Granular Synthesis- http://www.granularsynthesis.info/ns/index.php
66	- GRL- http://graffitiresearchlab.com/
67	- HC Gilje - http://www.nervousvision.com/
68	- Interactive Sonic Systems - http://mtg.upf.es/reactable/
69	- Jasch - http://www.jasch.ch/
70	- Jennifer & Kevin McCoy- http://www.mccoyspace.com/
71	- Jeffrey Shaw- http://www.jeffrey-shaw.net/
72	- Jim Campbell- http://www.jimcampbell.tv/
73	- John Klima- http://www.cityarts.com/lmno/
74	- John Maeda- http://www.maedastudio.com
75	- Joshua Goldberg- http://www.goldbergs.com/
76	- Julien Maire- http://julienmaire.ideenshop.net/
77	- Kurt Ralske- http://retnull.com/
78	- Lia - http://www.strangethingshappen.org/
79	- Light Surgeons- http://www.thelightsurgeons.co.uk/
80	- Lev Manovich- http://www.manovich.net/
81	- Luc Courchesne- http://www.din.umontreal.ca/courschesne
82	- Marc Lafia- http://www.marclafia.net/
83	- Martijn van Boven - http://www.474746.org/
84	- Masaki Fujihata- http://www.fujihata.jp/
85	- Masayuki Akamatsu- http://www.iamas.ac.jp/~aka/
86	- Michael Mateas- http://users.soe.ucsc.edu/~michaelm/
87	- Miller Puckette- http://crca.ucsd.edu/~msp/
88	- Otolab - http://www.otolab.net/
89	- Paul Kasier- http://www.openendedgroup.com/
90	- Philip Worthington- http://www.worthersoriginal.com

91	- Rafael Lozano-Hemmer- http://www.lozano-hemmer.com/eprlh.html
92	- Robert Rowe- http://homepages.nyu.edu/~rr6/
93	- Ryoji Ikeda- http://www.ryojiikeda.com/
94	- Ryoichi Kurokawa- http://www.ryoichikurokawa.com/
95	- Scott Snibbe- http://www.snibbe.com/
96	- Semiconductor- http://www.semiconductorfilms.com/
97	- Stelarc - http://www.stelarc.va.com.au
98	- Sue C. - http://www.sue-c.net/
99	- Suguru Goto- http://suguru.goto.free.fr/Contents/SuguruGoto-e.html
100	- Telcosystems- http://www.telcosystems.net/
101	- Teatro Cinema- http://www.teatrocinema.cl/
102	- Troika Ranch- http://www.troikaranch.org
103	- Ulf Langheinrich- http://langheinrich.net/
104	- Vasulkas - http://www.vasulka.org/
105	- Wooster group- http://www.thewoostergroup.org/
106	- Young-Hae Chang- http://www.yhchang.com/
107	- Zachary Lieberman - http://www.thesystemis.com/
108	Organizations/Centers
109	- CNMAT- http://cnmat.berkeley.edu/
110	- CRCA- http://crca.ucsd.edu/
111	- EMPAC- http://empac.rpi.edu/
112	- Eyebeam - http://eyebeam.org/
113	- iAMAS- http://www.iamas.ac.jp/
114	- ICC - http://www.ntticc.or.jp/index_e.html
115	- iCinema- http://www.icinema.unsw.edu.au/
116	- IRCAM- http://www.ircam.fr/
117	- The Labyrinth Project - http://college.usc.edu/labyrinth/
118	- MIT Media Lab - http://www.media.mit.edu/research/
119	- Sonar - http://www.sonar.es/
120	- Sonic Acts - http://www.sonicacts.com/
121	- V2 - http://www.v2.nl/
122	- STEIM - http://www.steim.org/
123	- ZKM - http://on1.zkm.de/zkm/e/