SM2715: CREATIVE CODING

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Creative Coding

Subject Code
SM - School of Creative Media
Course Number
2715

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
CS1103 Introduction to Media Computing or SM1103A Introduction to Media Computing or CS1103B Media Computing

Precursors
Nil

Equivalent Courses
SM2705 Creative Media Studio III - Technology, Coding and Tangible Media

Exclusive Courses
Nil

Part II Course Details

Abstract
This course focuses on developing students' software literacy within the context of visual and interactive art. Students will be exposed to a wide range programming techniques and code-based art projects to enhance their literacy in transforming

technology to a new art form. They will learn an open-source programming platform, called Processing, which is specifically designed for artists and designers to create visuals and interaction. Illustrative examples and hands-on exercises will be given to build up students' coding competence and the ability to utilize computer as an expressive medium.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify and describe the characteristics of computer programs that are created for artistic, expressive or creative purposes		x	x	
2	Achieve good level of competence in the programming language to be used in the course			x	
3	Apply programming techniques to develop works that are creative rather than purely functional		x	x	x
4	Integrate different basic techniques to realize more complicated effects			x	x
5	Embody artistic concepts in code-based works		x	x	x
6	Develop original coding-based work with personal style and high aesthetic quality		x	x	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.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	In-depth discussions about the theory and practical use of a range of programming techniques for creative coding	1, 2, 4	
2	Coding workshops	Examples and in-class coding exercises to get hands-on experience and skills in implementing different techniques	1, 2, 3, 4	
3	Coding assignments	Bi-weekly exercises with specific requirements to explore different topics within the context of creative coding	1, 2, 3, 4, 5, 6	

4	Project(s)	Group or individual project(s) to develop larger scale code-based work(s) and to transform basic coding competence into a unique style or personal signature	2, 3, 4, 5, 6	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Coding assignments	1, 2, 3, 4, 5, 6	50	
2	Project(s)	2, 3, 4, 5, 6	40	
3	Attendance and participation	1, 2, 3, 4	10	

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)

Assessment Task

1. Coding assignments

Criterion

Ability to apply fundamental programming concepts to the context of visual arts and media computing

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

2. Project(s)

Criterion

Software literacy for developing original coding-based work with personal style and high aesthetic quality

Excellent (A+, A, A-)

High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Assessment Task
3. Attendance and participation

Criterion
In-class participation, positive listening, ability to stimulate class discussion and comment on other points

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Additional Information for AR
All A+/A/A- grade assignment should comply with the highest performance of Discovery-oriented learning.

Part III Other Information

Keyword Syllabus
Processing, computer programming, creative coding, software, open-source, syntax, datatype, class, structure (iteration, functions), algorithm, geometry, coordinate transformation, interactivity, libraries, image processing/filtering, pixels, generative art, network art

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Reas, Casey, and Ben Fry. Processing: A Programming Handbook for Visual Designers and Artists (Second Edition). The MIT Press, 2014.
2	Shiffman, Daniel. Learning Processing, Second Edition: A Beginner's Guide to Programming Images, Animation, and Interaction. Morgan Kaufmann, 2015.
3	Shiffman, Daniel. The Nature of Code: Simulating Natural Systems with Processing. 2012.
4	Reas, Casey, Chandler McWilliams, and Jeroen Barendse. Form+ code in design, art, and architecture. Princeton Architectural Press, 2010.
5	Bohnacker, Hartmut, et al. Generative Design: Visualize, Program, and Create with Processing. Princeton Architectural Press, 2012.
6	Pearson, Matt. Generative Art: A Practical Guide Using Processing. Manning, 2011.
7	http://processing.org/
8	http://www.openprocessing.org/
9	http://www.learningprocessing.com/
10	http://fyprocessing.tumblr.com/
11	http://www.creativeapplications.net/
12	http://thecreatorsproject.com/