

**City University of Hong Kong  
Course Syllabus**

**offered by School of Creative Media  
with effect from Semester A 2018 / 19**

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**Part I Course Overview**

<b>Course Title:</b>	<u>Creative Coding</u>
<b>Course Code:</b>	<u>SM2715</u>
<b>Course Duration:</b>	<u>One Semester</u>
<b>Credit Units:</b>	<u>3 credits</u>
<b>Level:</b>	<u>B2</u>
<b>Proposed Area:</b> <i>(for GE courses only)</i>	<input type="checkbox"/> Arts and Humanities <input type="checkbox"/> Study of Societies, Social and Business Organisations <input type="checkbox"/> Science and Technology
<b>Medium of Instruction:</b>	<u>English</u>
<b>Medium of Assessment:</b>	<u>English</u>
<b>Prerequisites:</b> <i>(Course Code and Title)</i>	<u>CS1103 Introduction to Media Computing or SM1103A Introduction to Media Computing or CS1103B Media Computing</u>
<b>Precursors:</b> <i>(Course Code and Title)</i>	<u>Nil</u>
<b>Equivalent Courses:</b> <i>(Course Code and Title)</i>	<u>SM2705 Creative Media Studio III - Technology, Coding and Tangible Media</u>
<b>Exclusive Courses:</b> <i>(Course Code and Title)</i>	<u>Nil</u>

## Part II Course Details

### 1. Abstract

(A 150-word description about the course)

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.

### 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 <sup>#</sup>	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Identify and describe the characteristics of computer programs that are created for artistic, expressive or creative purposes		✓	✓	
2.	Achieve good level of competence in the programming language to be used in the course			✓	
3.	Apply programming techniques to develop works that are creative rather than purely functional		✓	✓	✓
4.	Integrate different basic techniques to realize more complicated effects			✓	✓
5. ^	Embody artistic concepts in code-based works		✓	✓	✓
6. ^	Develop original coding-based work with personal style and high aesthetic quality		✓	✓	✓
		100%			

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

<sup>#</sup> 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	
Lectures	In-depth discussions about the theory and practical use of a range of programming techniques for creative coding	✓	✓		✓			
Coding workshops	Examples and in-class coding exercises to get hands-on experience and skills in implementing different techniques	✓	✓	✓	✓			
Coding assignments	Bi-weekly exercises with specific requirements to explore different topics within the context of creative coding	✓	✓	✓	✓	✓	✓	
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		✓	✓	✓	✓	✓	

**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%								
Coding assignments	✓	✓	✓	✓	✓	✓	50%	
Project(s)		✓	✓	✓	✓	✓	40%	
Attendance and participation	✓	✓	✓	✓			10%	
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. Coding assignments	Ability to apply fundamental programming concepts to the context of visual arts and media computing	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Project(s)	Software literacy for developing original coding-based work with personal style and high aesthetic quality	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Attendance and participation	In-class participation, positive listening, ability to stimulate class discussion and comment on other points	High	Significant	Moderate	Basic	Not even reaching marginal levels

**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.)*

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

#### 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.	Nil
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##### 2.2 Additional Readings

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

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.	<a href="http://processing.org/">http://processing.org/</a>
8.	<a href="http://www.openprocessing.org/">http://www.openprocessing.org/</a>
9.	<a href="http://www.learningprocessing.com/">http://www.learningprocessing.com/</a>
10.	<a href="http://fyprocessing.tumblr.com/">http://fyprocessing.tumblr.com/</a>
11.	<a href="http://www.creativeapplications.net/">http://www.creativeapplications.net/</a>
12.	<a href="http://thecreatorsproject.com/">http://thecreatorsproject.com/</a>