



# Faculty of Law, Humanities and the Arts

## School of the Arts, English and Media

### Subject Outline

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#### **MEDA102**

#### **Computational Media**

6 Credit Points

**Spring Session 2017**

Wollongong, On Campus

Pre-requisites: Nil

Co-requisites: Nil

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#### **Teaching Staff**

Position	Name	Room	Telephone	Email	Consultation Times/Mode
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Subject Coordinator/ Lecturer/ Tutor	Dr Etienne Deleflie	TBC	TBC	etienne@uow.edu.au	TBC
Tutor	Mat Wall-Smith			matws@uow.edu.au	In class
Tutor	Alanna Vial			avial@uow.edu.au	In class

#### **Head of Students**

Name	Contact
Dr Jo Law	Contact via <a href="#">LHA Central</a>

#### **LHA Central**

Location	Telephone	Email	Web	Hours
19:1050	4221 3456	<a href="mailto:lha-enquiries@uow.edu.au">lha-enquiries@uow.edu.au</a>	<a href="#">LHA Central</a>	9am-5pm Monday - Friday

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# Subject Information

## Subject Description

This subject provides an accessible introduction to a broad range of creative coding practices including programming, computational media and electronic art. It explores the role of code in art and wider sociocultural and political contexts. Students engage in a series of practical exercises that aim to develop an understanding of the material conditions of digital media and encourage exploration of its creative possibilities. The subject considers historical and contemporary debates concerning the relationship between art and technology, and examines the role of computation and codes in contemporary arts and current cultural contexts.

## Learning Outcomes

### Course Learning Outcomes

Course Learning Outcomes can be found in the [Course Handbook](#). Students should refer to the Handbook pertaining to the year of their commencement and the course in which they are enrolled.

### Subject Learning Outcomes

On successful completion of this subject, students will be able to:

1. Engage critically with the history and aesthetics of codes as explored in creative practice
2. Demonstrate a sound understanding of creative coding and computational media
3. Produce creative works that demonstrate fundamental skills in coding and computational media
4. Develop creative work that demonstrates a conceptually informed engagement with the history and traditions of media arts

## Attendance

*Students are expected to attend all classes. Active and constructive presence in class makes an important contribution to your education as well as that of your peers. Failure to meet attendance requirements as set out below may significantly diminish your mark, and possibly lead to failure.*

*Students who do not attend at least 80% of all classes (fewer than 10 of 12 classes) including lectures, tutorials, practicals, workshops, computer labs, studios and seminars, risk possible failure in the subject. Roll books will be maintained. Arrival 10 minutes late at class may be deemed an absence. Similarly, students who leave a class early without a satisfactory explanation will be regarded as having been absent from that class and roll books marked accordingly.*

*Early departure in order to attend another class or an employment commitment does not constitute a satisfactory explanation. Absences incurred by a timetable clash with another subject or by employment commitments do not represent legitimate reasons for absence.*

*Students should note that the teaching session includes the study recess (week 14) and examination period (weeks 15 and 16) and they must therefore be available if required for final assessments scheduled by the Faculty or the University.*

*A student's attendance which falls below 60% (fewer than 8 classes of 12) owing to unforeseen circumstances or a serious medical condition, should apply for a withdrawal without academic penalty on compassionate grounds. A passing grade cannot be awarded in these circumstances.*

*It is the student's responsibility to advise the Subject Coordinator or tutor of the reasons for any absence from a class. It is not the responsibility of teaching staff to provide remedial instruction to those who have not attended classes.*

*The maximum mark for a student who fails to satisfy the above requirements is 49% (Technical Fail).*

*Students unable to attend a class due to serious or extenuating circumstances should apply for [Academic Consideration](#).*

## Timetable

For current timetable information please refer to the online [Subject Timetables](#) on the [Current Students](#) webpage.

## Weekly Outline

Week / Date	Outline of Lecture Topic/Description	Tutorial/Seminar/Practical	Task Due
<b>Week 1</b> Commencing 24 July	Introduction to Computational Media	Subject introduction; abstracting visual patterns	
<b>Week 2</b> Commencing 31 July	Cybernetic Serendipity	Executing instructions; Introducing Processing	
<b>Week 3</b> Commencing 7 August	Conceptual Art	Processing: Static Sketches	
<b>Week 4</b> Commencing 14 August	Media and Mediation	Processing: Loops and Iteration	
<b>Week 5</b> Commencing 21 August	Algorithm and Art	Processing: Media	Assessment 1 due
<b>Week 6</b> Commencing 28 August	Generative Art	Processing: Functions	
<b>Week 7</b> Commencing 4 September	<b>POSTGRADUATE WEEK – NO CLASSES (TAEM)</b>		
<b>Week 8</b> Commencing 11 September	Data Materialisation	Introducing Physical Computing/ Arduino/ Other Computational Tools	
<b>Week 9</b> Commencing 18 September	New Aesthetics	Processing/ Computational Media: Audiovisual	Assessment 2 due
Week Commencing 25 September	<b>MID-SESSION RECESS - NO CLASSES</b>		
<b>Week 10</b> Commencing 2 October <i>2 October Bank Holiday</i>	Guest Lecture TBC	Processing/ Computational Media: Words	
<b>Week 11</b> Commencing 9 October	Contemporary Media Art	Project review	

<b>Week 12</b> Commencing 16 October	Summary and Projection	Project review	
<b>Week 13</b> Commencing 23 October	Project presentation	Project presentation	Assessment 3 due
Week Commencing 30 October	<b>Study Recess</b>		
Week Commencing 4 – 16 November	<b>Examination Period</b>		

## Recent Changes and Subject Improvements

2017	No substantive changes have been made to the subject.	Jo Law
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## Changes after release of the Subject Outline

In extraordinary circumstances the provisions stipulated in this Subject Outline may require amendment after the Subject Outline has been distributed. All students enrolled in the subject must be notified and have the opportunity to provide feedback in relation to the proposed amendment, prior to the amendment being finalised.

## Assessment Information

### Assessment

The Faculty of Law, Humanities and the Arts reserves the right to scale marks in accordance with the University's Scaling Guidelines as set out in the [Standards for the Finalisation of Student Results](#). Marks are not final until declared by the Faculty Assessment Committee.

### Referencing

Referencing is an essential component of academic writing or presentation since it enables the reader to follow up the source of ideas and information presented in your work, and to examine the interpretation you place on the material discovered in your research. Reliable referencing clearly indicates where students have drawn their own conclusions from the evidence presented. Importantly, much of the material students will use is covered by copyright which means that they must acknowledge any source of information, including books, journals, newsprint, images and the internet.

It is obligatory for students to reference all sources used in their written work including electronic material.

Clear examples of how to reference correctly, across a wide variety of source materials, can be found on the UOW Library website:

- Library Resources - Referencing and Citing  
<http://www.library.uow.edu.au/resourcesbytopic/UOW026621.html>

Different programs use different referencing styles to reflect the needs of their discipline. It is the student's responsibility to ensure they use the correct referencing style as advised in this Subject Outline.

*For Subjects offered by the School of the Arts, English and Media, all assessment tasks should be referenced using the Author-Date Harvard Referencing system, unless otherwise stated in the assessment criteria of a particular task.*

# UOW Information

## UOW Grade Descriptors

The UOW Grade Descriptors describe student performance at each of the University's grade levels. They provide a frame of reference for moderation of assessment activities to ensure that assessment practice across the University is appropriate, consistent and fair.

Grade	Mark (%)	Descriptor
<b>High Distinction HD</b>	85-100	<p>A high distinction grade (HD) is awarded for performance that provides evidence of an outstanding level of attainment of the relevant subject learning outcomes, demonstrating the attributes of a distinction grade plus (as applicable):</p> <ul style="list-style-type: none"> <li>• consistent evidence of deep and critical understanding</li> <li>• substantial originality and insight in identifying, generating and communicating competing arguments, perspectives or problem-solving approaches</li> <li>• critical evaluation of problems, their solutions and their implications</li> <li>• use of quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work</li> <li>• creativity in application as appropriate to the discipline</li> <li>• eloquent and sophisticated communication of information and ideas in terms of the conventions of the discipline</li> <li>• consistent application of appropriate skills, techniques and methods with outstanding levels of precision and accuracy</li> <li>• all or almost all answers correct, very few or none incorrect</li> </ul>
<b>Distinction D</b>	75-84	<p>A distinction grade (D) is awarded for performance that provides evidence of a superior level of attainment of the relevant subject learning outcomes, demonstrating the attributes of a credit grade plus (as applicable):</p> <ul style="list-style-type: none"> <li>• evidence of integration and evaluation of critical ideas, principles, concepts and/or theories</li> <li>• distinctive insight and ability in applying relevant skills, techniques, methods and/or concepts</li> <li>• demonstration of frequent originality in defining and analysing issues or problems and providing solutions</li> <li>• fluent and thorough communication of information and ideas in terms of the conventions of the discipline</li> <li>• frequent application of appropriate skills, techniques and methods with superior levels of precision and accuracy</li> <li>• most answers correct, few incorrect</li> </ul>
<b>Credit C</b>	65-74	<p>A credit grade (C) is awarded for performance that provides evidence of a high level of attainment of the relevant subject learning outcomes, demonstrating the attributes of a pass grade plus (as applicable):</p> <ul style="list-style-type: none"> <li>• evidence of learning that goes beyond replication of content knowledge or skills</li> <li>• demonstration of solid understanding of fundamental concepts in the field of study</li> <li>• demonstration of the ability to apply these concepts in a variety of contexts</li> <li>• use of convincing arguments with appropriate coherent and logical reasoning</li> <li>• clear communication of information and ideas in terms of the conventions of the discipline</li> <li>• regular application of appropriate skills, techniques and methods with high levels of precision and accuracy</li> <li>• many answers correct, some incorrect</li> </ul>
<b>Pass P</b>	50-64	<p>A pass grade (P) is awarded for performance that provides evidence of a satisfactory level attainment of the relevant subject learning outcomes, demonstrating (as applicable):</p> <ul style="list-style-type: none"> <li>• knowledge, understanding and application of fundamental concepts of the field of study</li> <li>• use of routine arguments with acceptable reasoning</li> <li>• adequate communication of information and ideas in terms of the conventions of the discipline</li> </ul>

		<ul style="list-style-type: none"> <li>ability to apply appropriate skills, techniques and methods with satisfactory levels of precision and accuracy</li> <li>a combination of correct and incorrect answers</li> </ul>
<b>Fail F</b>	~ <50	A fail grade (F) is given for performance that does not provide sufficient evidence of attainment of the relevant subject learning outcomes.
<b>Technical Fail TF</b>		A technical fail (TF) grade is given when minimum performance level requirements for at least one assessment item in the subject as a whole has not been met despite the student achieving at least a satisfactory level of attainment of the subject learning outcomes.
<b>Satisfactory S</b>		A satisfactory grade (S) is awarded for performance that demonstrates a satisfactory level of attainment of the relevant subject learning outcomes.
<b>Unsatisfactory U</b>		An unsatisfactory grade (U) is awarded for performance that demonstrates an unsatisfactory level of attainment of the relevant subject learning outcomes.
<b>Excellent E</b>		An excellent grade (E) may be awarded, instead of a satisfactory grade (S), within subjects from the School of Medicine that have been completed with a consistent pattern of high standard of performance in all aspects of the subject.

## The Assessment Quality Cycle

The Assessment Quality Cycle provides a level of assurance that assessment practice across the University is appropriate, consistent and fair.

Assessment Quality Cycle Activities are undertaken to contribute to the continuous improvement of assessment and promote good practices in relation to the:

- design of the assessment suite and individual assessment tasks;
- marking of individual assessment tasks;
- finalisation of subject marks and grades; and
- review of the subject prior to subsequent delivery

Copies of student work may be retained by the University in order to facilitate quality assurance of assessment processes.

## Learning Analytics

Data on student performance and engagement (such as Moodle and University Library usage, task marks, use of SOLS) will be available to the Subject Coordinator to assist in analysing student engagement, and to identify and recommend support to students who may be at risk of failure. If you have questions about the kinds of data the University uses, how we collect it, and how we protect your privacy in the use of this data, please refer to [Learning Analytics Information for Students](#).

## Academic Integrity Policy

The University's Academic Integrity Policy, Faculty Handbooks and subject guides clearly set out the University's expectation that students submit only their own original work for assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work (either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement or without the explicit permission of the Subject Coordinator. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as 'resources'), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the University to be intentionally or recklessly helping other students to cheat. Uploading an assessment task, subject outline or other course materials without express permission of the university is considered academic misconduct and students place themselves at risk of being expelled from the University.

Students should refer to:

- Student Conduct Rules  
<http://www.uow.edu.au/about/policy/UOW058723.html>

- Academic Integrity Policy  
<http://www.uow.edu.au/about/policy/UOW058648.html>

## **Submission, Receipt and Collection of Assessment Tasks**

Assessments are to be submitted on the due dates and via the submission method specified in each assessment task listed in this Subject Outline. Penalties apply for late submission.

### **Submission of Assessment Tasks**

Unless otherwise indicated in this Subject Outline, written assessments must be submitted through **LHA Central in Building 19, Room 1050, no later than 4pm on the due date.**

All submitted assessments must have attached an individualised LHA Assignment Coversheet with a bar code. Instructions on how to create and submit the cover sheet can be found at the Faculty's webpage: <http://lha.uow.edu.au/current-students/UOW154553.html>

If an extension is not granted, any assessment lodged after 4pm on the due date will be considered late and will incur late penalties (see 'late submission' section below).

### **Receipt of Assessment Tasks**

At LHA Central, assessments submitted with an individualised LHA Assignment Coversheet and barcode will automatically receive an electronic receipt as evidence of submission; this receipt will be issued to students' University email account.

Please note that the Assignment Coversheet must be printed on a laser printer (use the library or computer lab printers if necessary) as ink jet printers may not print to the quality needed to make the barcode readable by the scanners.

It is the responsibility of the student to keep a copy of all work submitted for assessment to the Faculty.

In the case where a student submits an assessment that does not incorporate an automated electronic receipt as evidence of submission, the student may request a paper receipt as proof.

### **Electronic Submission of Assessments**

Where an assessment must be submitted electronically (i.e. through an eLearning site such as Moodle) this will be specified in the assessment task listed in this Subject Outline. The procedure for electronic submission will be set out on the Moodle site. Students are required to retain a copy of material submitted electronically until the release of final results for the assessment task.

### **Assessment task submission via post, fax or email**

Assessments submitted via post, fax or e-mail will *only be accepted with the written prior approval from the Subject Coordinator.*

As a general rule, assessments will not be accepted or marked if submitted by fax except in special cases where the Subject Coordinator has given prior approval. Students who are given prior approval to submit an assessment via fax must have the relevant Assignment Coversheet attached and clearly address the fax to the Subject Coordinator via fax number 02 4221 5341.

Students who are given prior approval to submit an assessment via email must have the relevant Assignment Coversheet attached with the assessment and email the Subject Coordinator directly and copy the LHA Central email [lha-enquiries@uow.edu.au](mailto:lha-enquiries@uow.edu.au).

Students who are given prior approval to submit an assessment, with the relevant Assignment Coversheet attached, via Australia Post must use registered mail – this will ensure there is an official receipt of mailing the assessment on the due date. Students must retain the evidence of posting the assessment.

The envelope should be addressed to:

*Subject Coordinator or Tutor's name*  
Faculty of Law, Humanities and the Arts



### **Collection of Assessment**

The University's [Teaching and Assessment: Assessment and Feedback Policy](#) requires that at least one assessment be assessed and returned prior to the deadline for students to withdraw from a subject without academic penalty (Week 9 in a standard session)..

Assessments submitted during session will be returned to students by their lecturer, tutor or seminar leader. LHA Central does not hold any assessments for student collection during session.

Assessments submitted at the end of session will be held at LHA Central 19 up until the end of Week 3 of the following session. After this time, assessments will be returned to the respective Subject Coordinator for return or disposal.

### **Late Submission of Assessments**

In the absence of an approved request for Academic Consideration in the form of an extension, assessment tasks must be submitted no later than 4pm (unless otherwise specified in the Assessment Task information) on the due date.

Late work (i.e. any work required for assessment that has not been given an extension) will be subject to a 10% penalty per calendar day. The penalty is applied to the mark awarded. Work submitted after seven calendar days will not be marked and will be given a mark of 0.

An assessment task that is submitted after 4pm on any day will be deemed to have been submitted on the next working day. Penalties accrue on each day that the assessment task is late, including Saturday, Sunday and public holidays.

For assessments that are required to be submitted in hard copy via LHA Central in Building 19, submission must be made by 4pm on weekdays to be recorded as submitted on that day.

**Only with the written prior approval from the Subject Coordinator**, may students submit their assessment on a Saturday, Sunday or public holiday in electronic format via email to the Subject Coordinator's email address. This is on the condition that they submit the hard copy of this assessment task by 4pm on the next working day with a completed [Statutory Declaration](#) to the effect that they confirm that the electronic and hard copies of the assessment are identical in all material respects. Where this is done, the submission date will be deemed to be that of the electronic submission for purposes of calculation of any late penalty.

In the absence of an extension having been granted pursuant to the Academic Consideration Policy, work submitted beyond seven (7) days of the due date will be accepted only if submission of that assessment is necessary to pass the subject but a mark of 'zero' will be recorded.

### **Retention of Assessments**

Copies of student work may be retained by the University in order to facilitate quality assurance of assessment processes.

### **Student Review of Mark / Grade**

In accordance with the Coursework Student Academic Complaints Policy, a student may request an explanation of a mark for an assessment task or a final grade for a subject consistent with the student's right to appropriate and useful feedback on their performance in an assessment task. Refer to the Coursework Student Academic Complaints Policy for further information.

- Coursework Student Academic Complaints Policy: <http://www.uow.edu.au/about/policy/UOW058653.html>

# Subject Assessment Tasks

## Assessment 1: Analogue Coding

<b>Marking</b>	Marked out of 100 - 25%
<b>Description</b>	<p>From weeks 1 to 4, you will be introduced to computational media through the concept of Abstraction – the translation of tangible or intangible things into a set of instructions. Select one two-dimensional art or design work and <i>abstract</i> this image into a set of instructional actions. These written instructions should be designed for a human subject to execute with the goal to reproduce the original work. You will have the opportunity to test your ‘code’ in class and improve on your instructions. Provide this set of instructions and its execution by at least 3 people, accompanied by a brief statement (300 – 400 words) that explains the approach and process of your instructional design, its successes and failures.</p> <p>Detailed project outlines will be provided and assessment will be discussed in week 1.</p>
<b>Due Date</b>	Week 5
<b>Format</b>	Written blog entry (400 words) with relevant support materials
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Depth and breadth of research engagement with lecture and workshop materials, and relevant references</li> <li>• Effectiveness in translating image content into instructions/ pseudo codes</li> <li>• Criticality in analysing the process of abstraction</li> <li>• Clarity and succinctness in writing</li> </ul>
<b>Submission Method</b>	Electronic submission via Medadada.net
<b>Required Performance Level</b>	Must attempt
<b>Subject Learning Outcome Addressed</b>	<p>This assessment task addresses Subject Learning Outcome:</p> <ol style="list-style-type: none"> <li>1. Engage critically with the history and aesthetics of codes as explored in creative practice</li> <li>2. Demonstrate a sound understanding of creative coding and computational media</li> </ol>

## Assessment 2: Digital Coding

<b>Marking</b>	Marked out of 100 - 35%
<b>Description</b>	<p>Based on assessment 1, create a Processing sketch that translates the selected two-dimensional art or design work into a digital execution. The completed sketch can be static or dynamic.</p> <p>Supply your sketch’s written code (in Processing) along with your exported Processing sketch on your personal subject blog. It is essential to include extensive comments throughout your written code to demonstrate your understanding of Processing. Borrowing from existing software is permitted but you must limit borrowed code to less than 30% of your total sketch. Wholesale copy of code is easily identified and will be penalised.</p> <p>Write a 150-word statement that explains how your sketch chose to abstract a visual pattern or design as well as how your experiment relates to relevant research and media artworks discussed in the lectures and workshops.</p>
<b>Due Date</b>	Week 9
<b>Format</b>	Processing sketch, source code, and statement (150 words) embedded/ posted on a blog entry on your personal blog.
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Depth and breadth of research engagement with lecture and workshop materials, and relevant references</li> </ul>

	<ul style="list-style-type: none"> <li>• Quality of codes and comments in the Processing sketch</li> <li>• Execution of concept in response to abstraction process in Processing sketch</li> </ul>
<b>Submission Method</b>	Electronic submission via Medadada.net
<b>Required Performance Level</b>	Must attempt
<b>Subject Learning Outcome Addressed</b>	<p>This assessment task addresses Subject Learning Outcome:</p> <ol style="list-style-type: none"> <li>1. Engage critically with the history and aesthetics of codes as explored in creative practice</li> <li>2. Demonstrate a sound understanding of creative coding and computational media</li> </ol>

### Assessment 3: Project work

<b>Marking</b>	Marked out of 100 - 40%
<b>Description</b>	<p>Research an existing art, design or media work discussed in the lectures and/or workshops and create a project in response to how the selected work make use of abstraction as a process.</p> <p>The form/output can be images or animation displayed on screens, as prints, drawings, textiles, interactive installations, 3-d objects, or performances. Provide a 200-word artist statement that outlines your concept, rationale, processes, and how you responded to the existing media artwork referenced. Refer to relevant lecture materials to contextualise your project in relation to contemporary media arts.</p>
<b>Due Date</b>	Week 13
<b>Format</b>	Screen-based, paper-based, object-based, interactive or performance work Written statement (200 words)
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Depth and breadth of research engagement with lecture and workshop materials, and relevant references</li> <li>• Conceptual development of Project work in response to theme</li> <li>• Execution of Project work in terms of functionality and presentation</li> </ul>
<b>Submission Method</b>	Presentation of work (as directed in class) Artist's statement (200 word)
<b>Required Performance Level</b>	Must Attempt
<b>Subject Learning Outcome Addressed</b>	<p>This assessment task addresses Subject Learning Outcome:</p> <ol style="list-style-type: none"> <li>3. Produce creative works that demonstrate fundamental skills in coding and computational media</li> <li>4. Develop creative work that demonstrates a conceptually informed engagement with the history and traditions of media arts</li> </ol>

### Supplementary Assessment

Supplementary assessment may be offered to students whose performance in this subject is close to that required to pass the subject, and are identified as meriting an offer of a supplementary assessment. The precise form of supplementary assessment will be determined at the time the offer of a supplementary assessment is made. Students who satisfactorily complete a supplementary assessment will be awarded a grade of 50% (Pass Supplementary).

# Subject Resources and Materials

These resources are recommended and are not intended to be exhaustive. Students are encouraged to use the Library catalogue and databases to locate additional resources and supplement the recommendations with resources discovered through their own research, both online and in hard copy.

- UOW Library

<http://www.library.uow.edu.au/index.html>

Berry, DM 2014, *Critical Theory And The Digital*, Bloomsbury Academic, New York.

Berry, DM 2016, *Copy, Rip, Burn : The Politics Of Copyleft And Open Source*, Pluto, London.

Blais, J. and Ippolito, J. 2006, *At the Edge of Art*, Thames & Hudson, London

Chun, W. H. K. and Keenan, T (eds) 2006, *New Media, Old Media*, Routledge, New York and London

Cramer, F. and Gabriel, U. 2001, *Software Art*. Transmediale.01 Arts Festival, Berlin Die Gestalten Verlag, Berlin.

Fry, B 2008, *Visualizing Data*, O'Reilly Media, Sebastopol, CA.

Gere, C. 2002, *Digital Culture*, Reaktion Books, London

Goriunova, O. and Shulgin, A. 2004, *read\_me: Software Art & Cultures*, Aarhus University Press, Denmark

Klanten, R, Ehmann, S & Hanschke, V 2011, *A Touch Of Code : Interactive Installations And Experiences*

LeWitt, S 2006, *Sol Lewitt : Wall Drawings*, Damiani, Bologna, Italy.

Lima, M 2011, *Visual Complexity : Mapping Patterns Of Information*, Princeton Architectural Press, New York.

Krysa, J & Parikka, J (eds) 2015, *Writing and Unwriting (Media) Art History: Erkki Kurenniemi in 2048*, MIT Press, Cambridge, Mass.

Manovich, L. 2001, *The Language of New Media*, MIT Press, Cambridge Massachusetts,

McCullough, M 1998, *Abstracting Craft : The Practiced Digital Hand*, MIT Press, Cambridge, Massachusetts.

McFadden, D & Edwards, J 2007, *Radical Lace & Subversive Knitting*, Museum of Arts & Design, New York.

Montfort, N 2016, *Exploratory Programming For The Arts And Humanities*, MIT Press, Cambridge, Massachusetts.

*Open Processing* n.d., viewed 4 July 2016, <<http://www.openprocessing.org/>>.

Reas, C 2014, *Processing : A Programming Handbook For Visual Designers And Artists*, MIT Press, Cambridge, Massachusetts.

Rushkoff, D 2011, *Program or be Programmed: Ten Commands for a Digital Age*, Soft Skull Press, Berkeley

Shanken, E. A. 1998, The House that Jack Built: Jack Burnham's Concept of "Software" as a Metaphor for Art. *Leonardo Electronic Almanac* 6(10).

Shanken, E. A. 2009, *Art and Electronic Media*, Phaidon, New York.

Shiffman, D 2008, *Learning Processing: A Beginner's Guide To Programming Images, Animation, And Interaction*, Morgan Kaufmann/Elsevier, Amsterdam & Boston.

Tribe, M. and Reena, J. 2006, *New Media Art*, Taschen, Koln.

Tullett, B 2014, *Typewriter Art : A Modern Anthology*, Laurence King Publishing, London.

Vantomme, J 2012, *Processing 2: Creative Programming Cookbook*, Packt Publishing, Birmingham.

Wardrip-Fruin, N. and Montfort, N. (eds) 2003, *The New Media Reader*, The MIT Press, Cambridge, Mass.

Subject materials, such as Subject Readers and Textbooks, can be purchased through the UniShop.

## General Advice Guide

Each session the Faculty of Law, Humanities and the Arts produces a guide to Faculty and University policies, programs and resources.

Students are encouraged to access a copy of the [General Advice Guide](#) at the start of each session.