

Title **Critical Studies: Computational   
Thinking and Creative Practice**

Professor Sheldon Brown

Term 2019/2020

What do computational thinking and creative practice mean to each other? This unit explores some of the implications that come about with the intertwining of creative cultural practice and computation. We will look at some particular issues in depth as domains in which the engagement of creative acts with computation have a particular poignancy.

We will also look at this field from a historical perspective and with ideas of cultural critique from the mid- 20th century on.

From this we will identify aspects of our particular cultural condition that are uniquely inflected by the affordances of computation, exploring how creative engagements manifest and develop these tools, while also providing a critical perspective on their extents.

A few vantage points that we will consider: 1) the functional basis of rapidly developing computational capacity and the types of problems that this toolset may or may not be suited for, 2) the ways in which computational systems and products differ from previous cultural forms, 3) the manner by which these come into being through creative acts that involve a circuit of actions between producers, users, and materials. These are some of the attributes of our computational culture to consider the range and depth of our creative agency.

We will think of this as an arena of cultural research whose agenda not only includes new technological methods, but the exploration of how experience is understood, the nature of creativity, and what constitutes a work of culture. Those ontological questions are intertwined with the epistemological ones of how cultural forms create meaning and serve as vehicles of expression, as well as the social context for the roles that vanguard culture plays in the human condition. While these can be quite heady concepts to take on fully – they will provide the aura of discourse that we will delve into while you create works that invent new kinds of experiences with the emerging technological capabilities of our time.

In this class, you will do weekly readings with in-class discussion, several presentations to the class, several writing assignments, one speculative project proposal, and some possible excursions. These are detailed below. Writing assignments will employ standards appropriate for a post-graduate university course, i.e. utilize and cite research resources as needed, and use spelling and grammar checking.

I reserve the right to adjust any of the content outlined in this syllabus. These adjustments can include adding or subtracting assignments, changing the content of the assignments, changing dates, or adjusting requirements. If dates are changed to make assignments due earlier, I will give at least 2 weeks alert.

The goal of the class is to develop your analytical understanding of how new forms of media can create new kinds of experiences. Approaching your creative activity from this vantage point gives you the basis for creating innovative work in this field.

**Indicative Content**

* What is computational thinking
* The history of computers and creativity
* Critical issues with computational approaches
* Creative futures for computational thinking

**Learning Outcomes**

On completion of this unit students will be able to:

LO1 Demonstrate an awareness computational thinking and its application to creative practice. (Enquiry)

LO2 Identify and discuss the limits of computational thinking (Enquiry)

LO3 Identify and discuss the cultural impact of computational thinking (Enquiry)

**Unit Assessment Summary**  
This unit is assessed through

Presentations 1 – 4, 5% each

Writings 1 – 3, 10% each

Writing 4, 20%

Project, 20%

Class Participation, 10%

**Teaching and Learning Methods**

To enable you to demonstrate achievement against the learning outcomes, the subject will be introduced through a range of readings, class discussions, lecture presentations, assignments, critiques, and visits.

**Presentation 1 and Writing Assignment 1, Weeks 2, 3 and 4: The Methods of your Madness**

As you share your work with the class, reflect on the methods you employ in creating your work. Consider that these methods have inherent meaning and context. The paper should be ~500 words.

Answer these questions about your work as you share it with us.

* Do you consider your work to be art or design or another category?
  + What does your work gain or lose by considering it in this way?
* Why do you work the way that you do? (talent, access, intellectual interest, historical situation, etc.)
* Are your methods assumptions, or are they strategic or aesthetic in and of themselves?
* Are your methods effective for meeting the goals of your ambitions?
* How is your art/design making relevant to contemporary culture at large:
  + the way it is materially produced
  + how it creates meaning
  + the subjects of consideration
* Is your work changing the nature of its field of practice? How?

**Presentation 2 and Writing Assignment 2. Weeks 8, 9, 10 : Critical Computational Transformation**

Present on a subject of how the development of computation has changed and will continue to transform a specific area of culture and society. In your presentation, outline the cultural condition as it existed before its engagement with computation, its current state, and potential future directions that might come about due to the increasing capabilities of computation, considering the broader transforming socio-cultural condition. In particular, find examples in art and design that are relevant, as well as theoretical sources and perspectives. 15 – 20 minutes per presentation. Paper should be ~1500 words.

Topic area assigned/approved by instructor

**Presentation 3 and Writing Assignment 3. Weeks 12, 13, 14: Working Critique**

In the second quarter, present what you have accomplished in your creative practice while at UAL, and provide an update of your plans for the remainder of the program. This can include works that you have done in other courses that are of particular importance for reasons that might be conceptual, aesthetic, or technical, but it will also include work you have outside of courses. Each student will have another student assigned as a reviewer of that students work and will write a review ~1000 words, which will be sent to the class ahead of the following week. The purpose of the writing is to explore and develop the means of critique.

**Project: A Speculative New Reality. Week 15, 16, 17**

Let’s dare to consider Computational Thinking and Creative Practice as a utopian project. As enticing as this might seem, it might also be an inherently flawed approach. Propose a “New Reality” work in which you draw upon a rubric of aesthetic characteristics. Pick one from each category of the below categories of **Affect, Method, Style,** and **Context**, i.e., your work will elicit the *sublime* using *banality*, in a *kitchy* style to consider the *post-Anthropocene.*

**Affect**: sublime, awe, empathy, estrangement

**Method**: complexity, otherness, transcendence, banality, the real, meta-narrative

**Style**: realism, kitsch, surrealism, formalism, structuralism, assemblage

**Context**: ecology, post-Anthropocene, individual and social contract, justice, speculative media, utopianism

**Presentation 4 and Writing Assignment 4. Weeks 18, 19: Practice makes Perfect**

Discuss a broader range of cultural transformation brought on by our computational condition. Draw on at least three examples, and situate your creative practice with these examples and broader transformation. ~2500 words.

**Schedule (subject to change)**

Week 1 October 1 –

Introduce class and students

Sheldon Brown Presentation

Read: ***Art, Critique, and (a)Bit (of) politics***

**Cutting across somewhere between in the scalable city -** Bruce Sterling

**Grayson Perry: in defence of super-rich knick-knacks**

**Anatomy of an AI System: The Amazon Echo as an anatomical map of human labor, data and planetary resources** Kate Crawford  and Vladan Joler(2018) <https://anatomyof.ai/>

**The Black Stack** Benjamin H. Bratton e-flux Journal #53 - March 2014 <https://www.e-flux.com/journal/53/59883/the-black-stack/>

**A Declaration of the Independence of Cyberspace** John Perry Barlow 1996

Week 2 October 8 –

Students Present: **The Methods of your Madness** 5 – 7 students

Presentation: **Creativity, Imagination, and the Brain** -Uncanniness/dissonance, hybridity

Readings: ***Imaginative Dimensions of Engagement – Some theories from Neuroscience***

**The Artful Brain**  V.S. Ramachandran,

**The Neuroscience of Art** Mengfei Huang

**What Art Unveils,** Noe. New York Times 10/5/2015

**Strange Tools,** various excerpts – Noe

**An Essay On The New Aesthetic** Bruce Sterling Wired Magazine 4/2012

Week 3 October 15 –

Discuss Readings.

Students Present: **The Methods of your Madness** 5 - 7 students

Readings: ***Knowingness*** :(){ :|:& };:

**The Alternative Science of Computation** Mario Carpo

**Can an Algorithm be Agonistic? Ten Scenes from Life in Calculated Publics** Kate Crawford

[**Incomputable Aesthetics: Open Axioms Of Contingency**](http://computationalculture.net/incomputable-aesthetics-open-axioms-of-contingency/)**,** M. Beatrice Fazi,[Computational Culture](http://computationalculture.net/): A Journal Of Software Studies, 15th January 2016 <http://computationalculture.net/incomputable-aesthetics-open-axioms-of-contingency/>

**Bruno Latour, the Post-Truth Philosopher, Mounts a Defense of Science** Ava Kofman, NY Times Magazine Oct. 25 2018

Week 4 October 22 –

Discuss Readings

Students Present: **The Methods of your Madness** 5 - 7 students

Readings: ***Dimensions of digital space: unreeling the real***

**Specific Objects** Donald Judd

**Neromancer (excerpt)** William Gibson

**Snow Crash (excerpt)** Neil Stephenson

**Library of Babel** Jorge Louis Borges

**Production of Space (excerpt)** Henri Lefebvre

**Videogame Spaces** Michael Nitsche

**Understanding Media (excerpt)** – Marshall McLuhan

**Don Quixote and the Neuroscience of Metafiction**, Holland. pg. 73 – 88.

Week 5 October 29 –

Discuss Readings

Presentation – Simulation/VR

Readings:

**Defining AI Arts: Three Proposals** Lev Manovich June 2019

**An Essay On The New Aesthetic** Bruce Sterling, Wired Magazine 2/2012

**Contradictions (on Harold Cohen)** Paul Cohen December 27, 2016

**(The Speculative (or Propositional) Art of (Harold Cohen) && OR (Aaron)))** Sheldon Brown

**Interview With The Artist: Harold Cohen** Sheldon Brown

**The AI Cargo Cult, The Myth of a Superhuman AI,** Kevin KellyMedium 5/7/2017

Week 6 November 5 –

Discuss Readings

Presentation: AI Art and Representation

Readings:

**A Cyborg Manifesto: Science, Technology and Socialist-Feminism in the Late Twentieth Century” from Simians, Cyborgs and Women, the Reinvention of Nature.** Donna Haraway[**http://www.egs.edu/faculty/donna-haraway/articles/donna-haraway-a-cyborg-manifesto/**](http://www.egs.edu/faculty/donna-haraway/articles/donna-haraway-a-cyborg-manifesto/)

Week 7 November 12 –

Week 8 November 19 –

Discuss Readings

Present: Early AI and Art

Students Present**: Critical Computational Transformation** 5 - 7 students

Readings: Uncentering

**Hyperobjects (excerpt)** Timothy Morten

Week 9 November 26 –

Discuss Readings

Students Present**: Critical Computational Transformation** 5 - 7 students

Readings: Uncentering

**Speculative Aesthetics and Object-Oriented Inquiry** N. Katherine Hayles

Week 10 December 3 –

Discuss Readings

Students Present**: Critical Computational Transformation** 5 - 7 students

Break

Week 11 January 7 –

Readings: Uncentering Part 3:

**How We became Post Human**  N. Katherine Hayles

**“AI” to “EI” – Moving from Fear to Flourishing in the Age of the Algorithm** John Havens

Week 12 January 14 –

Presentation: Simulation

Readings: The beginning of the end of the beginning

**The Singularity** Vernor Vinge, 1993 http://mindstalk.net/vinge/vinge-sing.html

**The Singularity is Near** (excerpt plus charts)– Ray Kurzweil

**On the Eve of Artificial Minds** Chris Eliasmith

**Xenofeminism** Laboria Cuboniks

Week 13 January 21 –

Discuss Readings

Students Present: **Working Critique** 5 - 7 students

Readings: ***Utopianism***

**Conversation between** Theador Adorno and Ernst Bloch

**One-Dimensional Man (excerpt)** by Herbert Marcuse Chapter 10, pgs. 175 – 182

**Archaeologies of the Future, Introduction: Utopia Now**, pg xi – xvi, Chapter 1: Varieties of the Utopian pg. 1 - 9 –by Frederic Jameson

**The Ones Who Walk Away from Omelas** by Ursula Le Guin

Week 14 January 28 –

Discuss Readings

Students Present: **Working Critique** 5 - 7 students

Readings: ***Speculation, Art, Design***

**Speculative Everything: Design Fiction and Social Dreaming** Anthony Dunne and Fiona Raby, 2013, pg, 1-9, 69-88.

**Speculative Aesthetics** Trafford, et. al.

Week 15 February 4 –

Discuss Readings

Students Present: **Working Critique** 5 - 7 students

Readings: ***Speculation, Art, Design***

**Shaping Things**, Bruce Sterling

Week 16 February 11 –

Discuss Readings

Students Present: **A Speculative New Reality** 5 - 7 students

Readings: ***NeoCompuBio***

**Consciousness in humans and non-human animals: recent advances and future directions** Melanie Boly, et al. Frontiers of Psychology REVIEW ARTICLE published: 31October2013 doi: 10.3389/fpsyg.2013.00625

**The Great Silence,** Allora & Calzadilla, Ted Chiang. e-flux journal #65 May-August 2015

**Tactical Biopolitics: Art, Activism, Technoscience (Introduction)** Beatriz Da Costa & Kavita Philip MIT Press

**Other Minds (excerpt)**

**Microbes (excerpt)**

**Homo Deus (excerpt)**

**Biosphere 2: Saving the world within a world** Tiffany 'Callaghan

**Thinking Ecology: The Mesh, The Strange Stranger, and the Beautiful Soul** Timothy Morten

Week 17 February 18–

Discuss Readings

Students Present: **A Speculative New Reality** 5 - 7 students

Readings: ***Imagining the next***

**The Life Cycle of Software Objects** by Ted Chiang

Week 18 February 25 –

Discuss Readings

Students Present: **A Speculative New Reality** 5 - 7 students

Readings: ***Techne***

**A brilliant trip back to the technological future Review of Stanislaw Lem’s Summa Technologiae** Simon Ings, New Scientist, 20 May 2013

**Now Broadcasting in Planck Definition** Craig Hogan, <http://arxiv.org/abs/1307.2283v1>

Week 19 March 3 –

Discuss Readings

Students Present: **Practice makes Perfect** 7 – 10 students

Week 20 March 10 –

Students Present: **Practice makes Perfect** 7 – 10 students