CULS5330A

Special Topics in Cul Management I:

ART AND TECHNOLOGY: THEORIES AND PRACTICES

藝術與技術：理論與實踐

Lecturer: Royce Ng

(Thur 2:30-5:15pm)

Y C Liang Hall (LHC) G03

Course Description:

This course aims to explore the relationship between art and technology from historical, aesthetic, philosophical and technological points of view, to provide future curators, culture workers and researchers with a broad overview of the various theoretical concepts and debates in the field. The course will also provide students with a practical understanding of the various technologies currently being used by artists and curators through a series of hands-on workshops during the course. Divided into three parts, the course will first present a history of art and technology from a theoretical perspective, beginning with early avant-garde experiments in the 1960's, moving through to the emergence of 'media art' and the discourse of 'New Media', the rise and influence of the internet on contemporary art in the age of the 'Post-Digital' in the 2000's, and finally to the contemporary critique and analysis of technology from political, ecological and philosophical perspectives. The second part of the course will examine the specific technological tools and platforms used by artists and curators including computer-generated imagery (CGI), virtual reality, game engines, open-source electronics, 3D printing and generative AI. Each lecture will be accompanied by a practical workshop in which students will be learn the basics of the software and hardware involved in each technology. In the final part of the course, students will incorporate the theoretical and practical knowledge gained from the first two parts of the course to inform the conceptualization and design of an exhibition on the topic of art and technology.

Learning outcomes:

On successful completion of the course, you will be able to:

- Compare and contrast the different ways in which different technologies have affected artistic production and the culture industry in the past 50 years.
- Acquire the ability to critically analyse and reflect on various theories and debates related to the impact of technology on artists.
- Achieve a basic practical understanding of the various technologies utilized by artists and curators including 3D design tools and desktop image editing software.
- Learn how various software and hardware can be used for exhibition curation and design
- Identify how Web 2.0 and internet culture influenced the contemporary art world in the early 2010's
- Explain the impact of generative AI and NFT's on digital art and the contemporary art market in the early 2020's.
- Gain sufficient understanding of the impact of technology on art production to curate and design an art exhibition on this topic.

Course syllabus:

Week	Topic	Fundamental concepts
	PART ONE: THEORIES OF ART AND TECHNOLOGY	
1	**Experiments in Art and Technology, the Rise of 'Media Art' and New Media Theory** The first week's lecture covers the early days of avant-garde artists experimenting with technology, focusing on the collaboration of artists like John Cage, Yvonne Rainier and Robert Rauschenberg with the engineers at Bell Labs through the Experiments in Art and Technology (E.A.T.) movement in the early 1960's. It looks at the concepts of 'Expanded Cinema' and 'Intermedia' during this period and their influence on the nascent development of 'media art' with artists like Stelarc, Jeffrey Shaw and Maurice Benayoun. Finally, the lecture examines how this work was theorized by new media scholars like Lev Manovich, Siegfried Zielinski, Erkki Huhtamo and Jussi Parikka. Reading: Gogota, Hisanori, Minoru Hatanaka, Kei Kamidanda, Billy Kluver, Yoshitomo Morioka, Fujiko Nakaya, and Kikuko Yomaya. (2003). *E.A.T. - The Story of Experiments in Art and Technology*. Tokyo: NTT Publishing Co. Ltd., (Introduction)	• Early history art and technology in the 1950's and 60's, focusing on the 'Experiments in Art and Technology' (E.A.T) movement. • The emergence of media and new media art from the 1970's. • Core concepts in the theoretical discourse which emerged around media art in the 1980's and 1990's.
2	**Post-Digital, Post-Internet, 'The New Aesthetic' and Meme-ology** This week's lecture examines how the 'post-digital' era of web 2.0 technologies and the increasing pervasiveness of the internet influenced contemporary art through the emergence of 'post-internet' art in the late 2000's with artists and collectives like Ryan Treycartin and Lizzy Fitch, Petra Cortwright, Jon Rafman, DIS and Timur Si-Qin. These artists adopted ironic pop methodologies by appropriating images and memes from the internet as material for their work while being influenced by the medium specific 'new aesthetic' of software and interfaces. It will also examine some of the way this work has been critically theorized through the concept of the 'post-digital' and 'post-internet'. Finally, the lecture looks at recent developments in contemporary art with the growing influence of memes, tiktok and Instagramand NFT's on Gen Z artists. Readings: Florian Kramer. (2014). What is Post-Digital?. APRJA, Vol. 3, 1.pp 10-24	• Contemporary artists who responded to the internet and post-digital culture. • The theoretical concepts of 'post-internet', 'post-digital' and the 'new aesthetic'. • The influence of meme culture on art production. • The influence of online culture on the aesthetics of NFT's
3	**Critical Reflections on Technology in Contemporary Art** This week's lecture traces the parallel but divergent trajectory of contemporary art which critically utilizes and engages with technology, with artists/theorists like Hito Steyerl, Trevor Paglen, Jacoby Satterwhite and Shu Lea Chang using their work and writings to critique AI, government surveillance and race/gender/sexuality biases in different media. The lecture also examines two	• How is critical theory used to understand technology in the work of contemporary artists? • How do artists critique technology and the impact of technology on society?

	exhibitions; 'Rats! Rats! Rats! The Poetic Grammar of the Hack' at the Caixa Institute in Barcelona in 2022 and 'The Poetics of Encryption' at the KW Institute of Contemporary Art in 2024 as surveys of artistic works which critically reflect on the role of technology in late-capitalist society. Readings: Nadim Samman. (2023). *The Poetics of Encryption*. Hatje Kantz, Germany. (Introduction)	• How to artists use technology to creatively critique society? • Technology and identity politics • Technology and ecology • Technology, geopolitics and surveillance culture.
4	**Cosmotechnics, Shanzhai, Accelerationism and Sinofuturism** This week's lecture looks at developments in art and technology in the context of Asia, by paralleling the accelerated Modernization and technologization of East Asian society and the emergence of various philosophies responding to these transformations including the accelerationist 'sino-futurism' of Nick Land, Yuk Hui's 'cosmotechnics' and Byung Chul Han's theorization of 'shanzhai'. These ideas are used as a framework to examine the work of a number of contemporary Asian artists who engage with technology in their work including Cao Fei, Lu Yang and Lawrence Lek. Reading: Conn, V. L. (2023). *Scry, the Beloved Country: Sinofuturist Forecasting and Accelerationist Aesthetics*. World Futures Review, 15(1):56–74	• How is technology perceived differently in Asia and how have contemporary artists responded to this? • The rise of 'sinofuturist' aesthetics • Yuk Hui's theory of 'cosmotechnics' • Byung-Chul Han's theory of 'shanzhai' • Art, technology and right-wing politics in Asia and the West
5	**Lunar New Year Break (No Class)**	
	PART TWO: TECHNOLOGY AS TOOLS	
6	**From Pixels to Voxels: Computer Software and Graphics in Art and Curation (Part 1)** This week's lecture covers the role of desktop publishing and photo editing software like Photoshop in art, particularly in the field of contemporary photography. It explores the theoretical implications of image manipulation and its relationship to concepts and techniques like remix and collage. Workshop: Photoshop and InDesign This workshop will introduce how to use software in the Adobe Creative Suite like Photoshop, InDesign and Illustrator which have become increasingly useful for culture workers.	• The impact of different desktop software on artistic production and curation • The concepts of 'collage', 'detournement' and 'remix'
7	**From Pixels to Voxels: Computer Graphics in Art and Curation (Part 2)** This week's lecture begins with an introduction to the range of commercially available 3D animation, gaming and virtual reality development programs such as 3D Max, Cinema 4D, Unity and Blender 3D with reference to artists and art works which utilize these technologies. It also examines the range of 'post-digital aesthetics' introduced by 3D visualization software found in contemporary artworks. The lecture will then cover the increasing use of	• The impact of 3D visualization and animation software on artistic production and curation. • Post-digital aesthetics of 3D visualization software.

	software like Sketchup and Matterport by curators for exhibition conceptualization and design. Workshop: Sketchup This workshop will introduce the free, 3D architectural design software Sketchup which many curators and exhibition designers use for creating exhibitions.	
8	**The Rise of the 'Maker Movement': Open-Source, Arduino and 3D Printing** This week's lecture looks at the emergence of the 'maker' movement in the mid-2000's with the accessibility of open-source electronics through Arduino and Rasberry Pi microcontrollers and how media artists have used them for artistic production. This lecture also looks at the development of 3D printing technology in the same decade, and how this has influenced the rapid prototyping abilities of artists. Workshop: Students will be introduced to the 3D scanning and printing services offered at the MakerSpace at the CUHK Library.	• The concept of the 'maker' and the range of new 'open source' technologies which have revolutionized contemporary media art. • 3D Printing • 3D Scanning • Arduino and open-source electronics and programming
9	**Large Language Models (LLMs) and the Rise of Generative AI** This week's lecture looks at the recent emergence of generative AI and large language models and how these technologies are being used and resisted by artists. Generative AI poses a number of challenges by questioning the notions of originality, skill and intellectual property while raising various ethical questions around data sets. Does AI pose the greatest opportunity for radical transformation in the artworld since photography in the 19th century, or will it be the end of art as we know it? This lecture will also look at how generative AI can be used by curators and a tool for conceptualization and developing proposals. Workshop: Midjourney, Stable Diffusion and Runway ML This week's workshop will give a brief introduction on how to use various prompt based generative AI platforms like Midjourney and Stable Diffusion while also introducing Runway ML which offers the possibility of training your own AI model without coding.	• The concept of 'generative AI' • How 'Large Language Models' have revolutionized AI • How does AI art affect traditional theorizations of creativitiy?
	PART THREE: CURATION IN THE EXPANDED FIELD	
10	**The Pandemic Era: Virtual Exhibitions, Embodied Museums** The pandemic inevitably accelerated the adoption of remote conferencing technologies such as ZOOM, while forcing curators and artists to move their exhibitions online or develop hybrid exhibitions with online and offline presences. This week's lecture will look at the different digital platforms and strategies utilized during this period, which can also be models for students' final projects.	• The impact of the global covid-19 pandemic on curation and exhibition making in the arts.

	The second half of this class will be devoted to the groups discussing their final assessment project with consultation from the course instructor.	
11	**Guest Lecture (TBD)**	
12	**In-Class Work on Final Project** Entire class will be devoted to allowing students to work on their final project with consultation from course instructor.	
13	**Final Project Presentations**	

Course components:

Teaching Modes and Learning Activities	
On-site face-to-face	**Percentage of time**
Lectures *(hybrid no/~~yes~~)*	14.1 %
Assigned Readings	6.84 %
Interactive workshops *(hybrid no/~~yes~~)*	5.56 %
In-class discussion *(hybrid no/~~yes~~)*	6.84%
Self-Study Time	66.67%

Assessment types:

Assessment type	**%**
Attendance**:** Attendance of lectures and workshops is mandatory in order to fulfil the learning objectives of the course.	10%
Weekly participation and discussion: Every week will include class discussion on questions related to the lecture and reading material. In addition, social media and virtual spaces will be created to facilitate discussion on the topics of the course. Students' individual participation in these discussions will monitored and contribute to their final grade.	20%
In-Class Presentation: Beginning in week three, students will give presentations on one specific contemporary artwork produced between 1960-2024 which utilizes new technologies. Presentation should be no more than 10 minutes and should be accompanied by a powerpoint presentation. The format of the presentation must cover: (i) Introduction to the artwork (ii) What technology it uses or discursively engages with? (iii) Its art historical relevance to other artists, artworks, art movements (iv) Your personal critical assessment of the artwork.	25%
Final group project**:** The final group project involves students curating or designing an exhibition related to the topic of art and technology. The project can take one of two forms; 1. An essay proposal for an exhibition on a topic related to theories of art and technology covered in the course. The proposal should be a minimum of 3000 words and include; i. A curatorial concept ii. A literature review surveying how the concept and exhibition relate to other similar exhibitions. iii. List of art works and descriptions of how they relate to the concept of the exhibition. (Minimum 10 artworks) iv. List of relevant references and bibliography.	45%

OR 2. A powerpoint presentation for the design of an exhibition related to the topics covered in the course. In this option, the focus will be on the innovative use of technology for designing AND presenting works in an exhibition. The project must include; i. Curatorial concept ii. Detailed description of the format of the exhibition which can be either PHYSICAL or VIRTUAL. The proposal must include descriptions of how one or more new technologies discussed in the course will be used for presenting the works, ie. virtual online gallery, VR/AR experience, a game, an NFT etc. iii. A list of artworks. iv. A detailed visual plan of the exhibition design including virtual and physical architectural organization and placement of artworks in the space. This design can be produced using Adobe tools covered in the course such as Photoshop and Illustrator, 3D modelling software like Sketchup and AI based image generation tools like Midjourney or Stable Diffusion.	

Assessment Rubrics:

Grade	Overall Course
A	Demonstrates a detailed knowledge of the impact of technology on the production and curation of art synthesized with an understanding of concepts, theories and debates which have been used to contextualize these phenomena. This knowledge has been practically applied in an articulate and creative manner that would surpass the normal expectation at this level, and typical of standards that may be common at higher levels of study or research. Has the ability to express the synthesis of ideas or application in a clear and cogent manner.
A-	Demonstrates the ability to state the impact of technology on the production and curation of art synthesized with an understanding of concepts, theories and debates which have been used to contextualize these phenomena in a manner that is logical and comprehensive. Has the ability to express the knowledge or application with clarity.
B	Demonstrates the ability to partially state the impact of technology on the production and curation of art synthesized with an understanding of concepts, theories and debates which have been used to contextualize these phenomena in the course to most (but not all) familiar and standard situations in a manner that is usually logically persuasive. Has the ability to express the knowledge or application in a satisfactory and unambiguous way.
C	Demonstrates the ability to state the impact of technology on the production and curation of art synthesized with an understanding of concepts, theories and debates which have been used to contextualize these phenomena to most (but not all) familiar and standard situations in a manner that is not incorrect but is somewhat fragmented. Has the ability to express the separate pieces of knowledge in an unambiguous way.
D	Demonstrates the ability to state the impact of technology on the production and curation of art synthesized with an understanding of concepts, theories and debates which have been used to contextualize these phenomena to some simple and familiar situations in a manner that is broadly correct in its essentials. Has the ability to state the knowledge or application in simple terms.
F	Unsatisfactory performance on a number of learning outcomes, OR failure to meet specified assessment requirements.

Required and recommended readings:

Required readings:

Gogota, Hisanori, Minoru Hatanaka, Kei Kamidanda, Billy Kluver, Yoshitomo Morioka, Fujiko Nakaya, and Kikuko Yomaya. (2003). *E.A.T. - The Story of Experiments in Art and Technology*. Tokyo: NTT Publishing Co. Ltd., (Introduction)

Florian Kramer. (2014). What is Post-Digital?. APRJA, Vol. 3, 1.pp 10-24
Nadim Samman. (2023). *The Poetics of Encryption*. Hatje Kantz, Germany. (Introduction)
Conn, V. L. (2023). *Scry, the Beloved Country: Sinofuturist Forecasting and Accelerationist Aesthetics*. World Futures Review, 15(1):56–74

Recommended readings:

Gene Youngblood. (2020). *Expanded Cinema: Fiftieth Anniversary Edition* (1st ed.). Fordham University Press. (Introduction)
Artie Vierkant. (2010). *The Image Object Post-Internet*. www.jstchillin.org. URL: https://jstchillin.org/artie/pdf/The_Image_Object_Post-Internet_us.pdf
Chloë Arkenbout, Jack Wilson and Daniël de Zeeuw. (2021). 'Introduction: Global Mutations and the Viral Image'. In Chloë Arkenbout, Jack Wilson and Daniël de Zeeuw (eds.) *Critical Meme Reader*. Institute of Network Cultures. Amsterdam
Hito Steyerl. (2009) *In Defense of the Poor Image*. e-flux Journal, Issue 10. URL: https://www.e-flux.com/journal/10/61362/in-defense-of-the-poor-image/
Trevor Paglen (2016). Invisible Images (Your Pictures Are Looking at You). www.thenewinquiry.com, URL: https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/
Byung-Chul Han (2017). *Shanzhai: Deconstruction in Chinese*. The MIT Press. Massachusetts
Yuk Hui. (2017). *On the Unhappy Consciousness of Neoreactionaries*. e-flux Journal, 81. URL: https://www.e-flux.com/journal/81/125815/on-the-unhappy-consciousness-of-neoreactionaries/

Feedback for evaluation:

Email to course instructor	Royce Ng: soloroyce@gmail.com
Early Feedback Collection System	https://apps.itsc.cuhk.edu.hk/files/EFCS-Operation.pdf

Course Schedule:

Class/Week	Date	Topic	Requirements
Week 1	Jan 9	Experiments in Art and Technology, the Rise of 'Media Art' and New Media Theory	
Week 2	Jan 16	Post-Digital, Post-Internet, 'The New Aesthetic' and Meme-ology	
Week 3	Jan 23	Critical Reflections on Technology in Contemporary Art	Beginning of weekly class presentations
Week 4	Jan 30	Lunar New Year Break	
Week 5	Feb 6	Cosmotechnics, Shanzhai, Accelerationism and Sinofuturism	
Week 6	Feb 13	From Pixels to Voxels: Computer Software and Graphics in Art and Curation (Part 1)	
Week 7	Feb 20	From Pixels to Voxels: Computer Graphics in Art and Curation (Part 2)	
Week 8	Feb 27	The Rise of the 'Maker Movement': Open-Source, Arduino and 3D Printing	
Week 9	Mar 6	Large Language Models (LLMs) and the Rise of Generative AI	Workshop in makerspace of CUHK Library
Week 10	Mar 13	The Pandemic Era: Virtual Exhibitions, Embodied Museums	
Week 11	Mar 20	Guest Lecture	
Week 12	Mar 27	In-Class Work on Final Project	
Week 13	Apr 3	Final Project Presentations	In-class presentation of final projects

Week 14	Apr 10		Out-of-class work on final projects
Week 15	Apr 16		Submission of final projects Wednesday April 16th, 2025, 5pm

Contact details for teacher:

Professor/Lecturer/Instructor:	
Name:	Royce Ng
Email:	soloroyce@gmail.com
Teaching Venue:	Y C Liang Hall (LHC) G03 http://www.avsu.cuhk.edu.hk/en/classroom_service/middle_level_rooms_detail/74/

Details of course website:

All course materials can be accessed from the universities Blackboard platform.

Academic Honesty and Plagiarism:

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at http://www.cuhk.edu.hk/policy/academichonesty/.

With each assignment, students will be required to submit a signed declaration that they are aware of these policies, regulations, guidelines and procedures.

- In the case of group projects, all members of the group should be asked to sign the declaration, each of whom is responsible and liable to disciplinary actions, irrespective of whether he/she has signed the declaration and whether he/she has contributed, directly or indirectly, to the problematic contents.
- For assignments in the form of a computer-generated document that is principally text-based and submitted via VeriGuide, the statement, in the form of a receipt, will be issued by the system upon students' uploading of the soft copy of the assignment.
- Students are fully aware that their work may be investigated by AI content detection software to determine originality.
- Students are fully aware of the AI approach(es) adopted in the course. In the case where some AI tools are allowed, students have made proper acknowledgment and citations as suggested by the course teacher.

Assignments without a properly signed declaration will not be graded by teachers.

Only the final version of the assignment should be submitted via VeriGuide.

The submission of a piece of work, or a part of a piece of work, for more than one purpose (e.g. to satisfy the requirements in two different courses) without declaration to this effect shall be regarded as having committed undeclared multiple submissions. It is common and acceptable to reuse a turn of phrase or a

sentence or two from one's own work; but wholesale reuse is problematic. In any case, agreement from the course teacher(s) concerned should be obtained prior to the submission of the piece of work.

The copyright of the teaching materials, including lecture notes, assignments and examination questions, etc., produced by staff members/ teachers of The Chinese University of Hong Kong (CUHK) belongs to CUHK. Students may download the teaching materials produced by the staff members/ teachers from the Learning Management Systems, e.g. Blackboard, adopted by CUHK for their own educational use, but shall not distribute/ share/ copy the materials to a third-party without seeking prior permission from the staff members/ teachers concerned.

Use of Generative Artificial Intelligence (AI) Tools in Teaching, Learning and Assessment

Following the universities guidelines for the use of Artificial Intelligence Tools in Teaching, Learning and Assessments (https://www.aqs.cuhk.edu.hk/documents/A-guide-for-students_use-of-AI-tools.pdf), this course adopts: **'APPROACH 2: USE ONLY WITH PRIOR PERMISSION'**

Use of some AI tools is allowed

Students may use some AI tools in some in-class activities and assignments on the following conditions:

1. The AI tools to be used are restricted to the following tools:
   - Midjourney
   - Stable Diffusion
   - SoraAI;
2. The specified AI tools will only be allowed for the following types of class activities and assignments: In class workshop and final group assignment.
3. Collaboration of AI tools is only allowed for the following purposes / tasks:
   - In-class workshop experimenting with AI generation tools
   - Generating images for use in final assignment.
4. The input contributed by the AI tools are properly acknowledged and cited ; and
5. The input together with the prompts used to elicit the AI responses should be highlighted or included as appendices wherever appropriate.

Acknowledging support from AI tools

Students are required to acknowledge all functional uses of a generative AI tool and cite it when they paraphrase, quote, or incorporate into their own work any content (whether it is text, image, data, or other format) that was created by it.

i. An example of acknowledgement

'I acknowledge the use of (name of AI tool – e.g. ChatGPT (https://chat.openai.com/) to (specify the support, e.g. plan my essay, generate some ideas for the content, ask for examples of data collection instruments, get the dates of historical events, etc.).

ii. An example of citation

OpenAI. (2023). *ChatGPT* (Mar 20 version). https://chat.openai.com/chat

(Students are reminded that due to the rapid developments of generative AI tools, some citation formats may be updated regularly.)

iii. An example of including texts generated by an AI tool in their work

"The following text was generated by an AI tool / language model (ChatGPT):"
[Insert the text generated by ChatGPT here.]

iv. An example of including texts generated by an AI tool and the prompts that were used to elicit the text from the AI tool

"[The prompt], as generated by an AI language model (ChatGPT):"
[Insert the text generated by ChatGPT in response to the prompt.]

Students are reminded to learn and use the AI tools responsibly and ethically and be aware of the limitations.

Students are reminded to clarify with the course teacher and obtain permission if necessary when in doubt.