

Nanyang Technological University  
***HH4020: Science, Technology, and Science Fiction***  
***Semester 2, AY2016-17***

***\*\* Final Version \*\****

Academic Units: 4  
Pre-requisites: None  
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### **Overview**

Science fiction has had a profound influence on recent developments in science and technology. Fields such as virtual reality, biotechnology, nanotechnology, and the development of Internet and communications technologies have been inspired and transformed by our cultural imaginaries. Our fears, hopes, and understandings of these domains are written into texts. Through reading science fiction, role-playing games, hypertext fiction, and MMORPGs, this class will explore the interfaces between science, technology, and fiction, examining how these imaginaries affect science and technology and how science and technologies affect these imaginaries. Through such analysis we will arrive at a deeper understanding of how our culture comes to terms with the dangers, threats, and complexities of contemporary technologies.

### **Logistics:**

This is a seminar class. Seminars will meet on Wednesdays between 1.30pm and 5.30pm in TR+109. We will usually spend some portion of class time watching science fiction films.

### **Learning Objectives**

In this course students will learn:

- How to read and deploy non-traditional & cultural sources in historical studies (eg. science fiction, games, video games);
- How to write creative fiction based on historical research and sources;
- How to conduct independent research in cultural history;
- How to construct a historical argument and write a historical essay based on cultural sources;

### **Some important things to know for this module:**

*Readings*

All the readings for the class will be placed online on Blackboard/Edventure, with the exception of the novels which you should purchase either in hard or soft copy (ie. Kindle or other ebook). Most of these can be found relatively cheaply on Amazon or other similar websites. If you sign up for Amazon “Audible” (free for 30-day trial) then you can also listen to some of the books online.

- William Gibson, *Neuromancer* (Kindle edition: USD6.16)
- George Alex Effinger, *When Gravity Fails* (Kindle edition: USD6.66)
- Bruce Sterling, *Islands in the Net* (Kindle edition: USD6.15)
- Neal Stephenson, *The Diamond Age* (Kindle edition: USD11.99)
- Paul De Fillipo, *Ribofunk* (Kindle edition: USD1.54)
- Paolo Bacigalupi, *Windup Girl* (Kindle edition: USD6.16)
- Liu Cixin, *Three Body Problem* (Kindle edition: USD9.04)

### *MCs*

Medical certificates are not a “get out of jail free” card. Missing a seminar without an MC will mean an automatic zero for any attendance and participation marks awarded for that week. Presenting an MC confers on you the *right* to make up the grade for your missed class, but it does not automatically make up for the missed class. Usually, this means I will ask you to write a 500-word response paper on the readings for that week. The grade on this response paper will make up your attendance and participation grade for that week.

### *Academic honesty*

The University rules regarding plagiarism will be strictly enforced in this class. Make yourself familiar with the rules. If in doubt, ask me.

### *Late work and extensions*

Any late work will lose marks at the rate of 10% of the maximum grade per 24-hour period or part thereof [late 1 hour = 10% penalty, late 26 hours = 20% penalty, late 71 hours = 30% penalty]. Extensions for assignments will be considered on a case-by-case basis in extraordinary circumstances. No extensions will be granted within one week of the deadline.

## **Assessment and expectations:**

- a. Weekly short movie reviews – 20%
- b. Group presentation – 20%
- c. Creative project - 20%
- d. Final historical essay – 40%

### *Weekly short movie reviews (20%):*

Each week you will be asked to submit a short review of the movie watched in the previous week. These will be assessed based on written expression as well as

engagement with themes in the reading and class discussion. More details about expectations for the reviews will be provided in a separate handout in week 2. These will be due in **hard copy at the beginning of class each week** (week 3 onwards).

*Group presentation (20%):*

You will be asked to present during class time as part of a group. The size of the groups will depend on the total number of students enrolled in the class. Each group will be assigned a presentation topic during the first weeks of class.

*Creative project (20%):*

During the semester you will complete one creative project. The nature of the topic is open-ended. The project may take the form of written work, website, multimedia object, poster, etc. The amount of work required is roughly the equivalent of a 1500-word paper. Some suggestions and ideas for the project include:

- Write a short story inspired by a particular technology or scientific breakthrough;
- Develop a role-playing game (table-top or online) based around a scientific or technological vision of the future;
- Write a script for a cyberpunk computer game;
- Develop an online story space or hypertext narrative related to some aspect of science and technology.

**Due Date: In class, February 22<sup>nd</sup>, 2017.**

*Final paper (40%):*

At the end of the semester you must complete a **5000-word research paper** related to some aspect of the class. The choice of topic is up to you, but you should consult with me at some point during the semester in order to get approval for your topic. Since this is primarily a history class, the paper should be broadly historical in nature. It should engage with both primary and secondary sources.

**Due date: Friday April 14<sup>th</sup>, 2017, 5pm (via Turn-it-in).**

**Other policies:**

*Getting the material:*

The assigned short articles that are not already available online will be made available through the course website. You should purchase the books for the course online – many should be available as cheap paperbacks or used copies. In the final week of the course, you will need to spend a significant amount of time playing a

computer game, *Deus Ex*. We will discuss how to find and play the game later in the semester.

*Class participation:*

In order for you to participate in the class, completing the reading is an absolute necessity. Apart from the novels (and other texts) themselves, I have kept additional reading to a minimum. These additional readings are intended to provide a starting point for discussion of the texts, so it is crucial that you make time to read them.

*Movies:*

We will watch science fiction/cyberpunk movies throughout the semester. You will be required to submit mini reviews of these movies each week after watching and these will form part of your final grade.

**Week by week:**

*Week 1 (January 11<sup>th</sup>): Introduction*

- Read in class: Bruce Bethke (1983) "Cyberpunk" Available at: <http://project.cyberpunk.ru/lib/cyberpunk/>
- Play: *Colossal Cave Adventure* (1976)
- Listen: The Ramones, Sex Pistols, The Clash.

Watch (for week 2): *Blade Runner* (1982)

*Week 2 (January 18<sup>th</sup>): Cyberpunk*

- **William Gibson, *Neuromancer* (1984)**
- Timothy Lenoir (2000) "All but War is Simulation: The Military-Entertainment Complex," *Configurations* 8: 289-335.

Watch (for week 3): *War Games* (1983)

*Week 3 (January 25<sup>th</sup>): Hackers and Crackers*

- Katie Hafner and John Markoff (1995) *Cyberpunk: Outlaws and Hackers on the Computer Frontier*. Simon & Schuster ["Kevin: The Dark Side Hacker," pp. 13-138]
- Douglas Thomas (2002) "Hacking Culture" in *Hacking culture* (Minneapolis: University of Minnesota Press): 5-46.

Watch (for week 4): *Akira* (1988)

Week 4 (February 1<sup>st</sup>): *Beyond the West*

- **George Alec Effinger, *When Gravity Fails* (1986)**
- Leonard P. Sanders (2008) "Postmodern Orientalism," pp. 43-91 in "Postmodern Orientalism: William Gibson, Cyberpunk, and Japan," Doctoral dissertation, English, Massey University, Albany, New Zealand.

[Introduction to *Shadowrun* for Week 5]

Week 5 (February 8<sup>th</sup>): *Role Playing Games*

- ***Shadowrun* (1989) (role playing game)**  
[Note: to get a sense of the game, we will read the 20<sup>th</sup> anniversary edition of the rulebook, which I will make available on Blackboard]
- Tom Boellstorff (2008) "The Virtual," pp. 237-249 in *Coming of Age in Second Life: An Anthropologist Explores the Virtually Human* (Princeton, NJ: Princeton University Press).
- Pat Harrigan and Noah Waldrop-Fruin (2010) *Second Person: Role-Playing and Story in Games and Playable Media*. MIT Press ("Introduction," "Games, Storytelling, and Breaking the String," (Greg Costikyan, pp. 5-14), "Making Games that Make Stories" (James Wallis, pp. 69-80).

Watch (for week 6): *Hackers* (1995)

Week 6 (February 15<sup>th</sup>): *Networks*

- **Bruce Sterling, *Islands in the Net* (1988)**
- Peter Ludlow (2001) "New Foundations: On the Emergence of Sovereign Cyberstates and their Governance Structures," pp. 1-24 in Peter Ludlow, ed. *Crypto Anarchy, Cyberstates, and Pirate Utopias* (Cambridge, MA: MIT Press).
- Timothy C. May (2001) "The Crypto-Anarchist Manifesto," pp. 61-64 in Peter Ludlow, ed. *Crypto Anarchy, Cyberstates, and Pirate Utopias* (Cambridge, MA: MIT Press).
- Eric Hughes (2001) "A Cypherpunk's Manifesto," pp. 81-84 in Peter Ludlow, ed. *Crypto Anarchy, Cyberstates, and Pirate Utopias* (Cambridge, MA: MIT Press).

Watch (for week 7): *Matrix* (1999)

Week 7 (February 22<sup>nd</sup>): *Hypertext*

- **Mark Amerika, *Grammatron* (1997)**

- N. Katherine Hayles (2007). "Electronic literature: What Is It?" Available at: <http://eliterature.org/pad/elp.html>
- Sherry Turkle (1995) *Life on the Screen: Identity in the Age of the Internet* (New York: Touchstone): Introduction: "Identity in the age of the Internet" and Chapter 10: "Identity crisis."
- Espen J. Aarseth (1997) *Cybertext: Perspectives on Ergodic Literature*. Johns Hopkins University Press ["Introduction: Ergodic Literature" (pp. 1-23) and "No Sense of an Ending: Hypertext Aesthetics" (pp. 76-96)]

Watch (for week 8): *Terminator 3: Rise of the Machines* (2003)

### **Mid-Semester Break!**

*Week 8 (March 8<sup>th</sup>): Nanoworlds*

- **Neal Stephenson, *Diamond Age* (1995)**
- Lawrence Person (1999) "Notes Towards a Postcyberpunk Manifesto," Available at: <http://slashdot.org/features/99/10/08/2123255.shtml>
- Bill Joy (2000) "Why the Future Doesn't Need Us," *Wired* (August 4) 8.04. Available at: <http://www.wired.com/wired/archive/8.04/joy.html>
- Milburn, Colin (2008) *Nanovisions: Engineering the Future*. Duke University Press, pp. 111-146.

Watch (for week 9): *Ex Machina* (2015)

*Week 9 (March 15<sup>th</sup>): Artificial Intelligences*

- Alan Turing (1950) "Computing Machinery and Intelligence," *Mind* 59: 433-460.
- Marvin Minsky (1988) *The Society of Mind* (New York: Simon & Schuster): Chapters 1, 2, and 18.
- Steven Levy (2011) "The A.I. Revolution is On" *Wired* 19.01. Available at: <https://www.wired.com/2010/12/ff-ai-essay-ai-revolution/>

Watch (for week 10): *Repo Men* (2010)

*Week 10 (March 22<sup>nd</sup>): Ribofunk*

- **Paul De Filippo, *Ribofunk* (1996)**
- Paul De Filippo (1998) "Ribofunk: The Manifesto." Available at: <http://www.streettech.com/bcp/BCPtext/Manifestos/Ribofunk.html>
- Phil McKenna (2009) "Rise of the Garage Genome Hackers" *New Scientist* (2689 – 7 January).

Watch (for week 11): *Ghost in the Shell* (1995) / *Ghost in the Shell* (2017) [**Hopefully we can organize a class outing to the movies! (Release date: 30<sup>th</sup> March)**]

*Week 11 (March 29<sup>th</sup>): Biotechnology*

- **Paulo Bacigalupi, *Windup Girl* (2009)**
- Hallam Stevens (2016) *Biotechnology and Society: An Introduction*. University of Chicago Press. Chapters 7 & 8.
- Jack Ralph Kloppenberg, Jr. (2005) *The First Seed: The Political Economy of Plant Biotechnology*. University of Wisconsin Press [Chapters 9-11].

*Watch (for week 12): Tron (1982)*

*Week 12 (April 5<sup>th</sup>): Gameworlds I*

- ***Deus Ex (2000)* [computer game]**
- Alexandra Orlando and Andrew Schwager (2016) “The Cyborg Game: Narrative/Ludic Fusion in *Deus Ex: Human Revolution*” in *The Play Versus Story Divide in Game Studies: Critical Essays*. Matthew Wilhelm Kapell, ed. (Jefferson, NC: McFarland) pp. 97-109.
- Jesper Juul (2006). *Half-Real: Video Games between Real Rules and Fictional Worlds*. MIT Press. [“Introduction,” “Video Games and the Classic Game Model,” and “Rules and Fiction”]

Watch (for week 13): *Interstellar* (2014)

*Week 13 (April 12<sup>th</sup>): Gameworlds II*

- **Liu Cixin, *The Three-Body Problem* (三体) (2008) [translated by Ken Liu (2014)]**
- Liu Cixin (2014) “The Worst of All Possible Universes and the Best of All Possible Earths: *Three Body* and Chinese Science Fiction” *Tor.com*. Available at: <http://www.tor.com/2014/05/07/the-worst-of-all-possible-universes-and-the-best-of-all-possible-earths-three-body-and-chinese-science-fiction/>
- Wikipedia entry: “Fermi Paradox” [https://en.wikipedia.org/wiki/Fermi\\_paradox](https://en.wikipedia.org/wiki/Fermi_paradox)