

USC Jimmy Iovine and Andre Young Academy

Arts, Technology and the Business of Innovation

ACAD – 302: The Hacker Imagination: From Ancient Greece to Cupertino

Units: 4

Term-Day-Time: TBD, 2 x 1:50 minutes sessions per week

Location: TBD

Instructor: Douglas Thomas

Office: TBD

Office Hours: TBD

Contact Info: TBD

Website: TBD

Teaching Assistant: TBD

Office: TBD

Office Hours: TBD

Contact Info: TBD

IT Help: <http://iovine-young.usc.edu/ait/index.html>

Hours of Service: M–F, 8:30am–5:30pm

Contact Info: iyhelp@usc.edu, 213.821.6140

Catalogue Description

Exploring issues in innovation, design and invention from the perspective of the hacker imagination

Course Description

Unlike our popular understanding of innovation and invention, which tells stories the birth of new ideas and individual genius, the story of the hacker imagination is something quite different. Hackers create by envisioning new possibilities in the context of old ideas.

For the purposes of this class, the hacker imagination is *the transformation of a specific domain that constructs a new way of seeing the world.*

Learning Objectives

In order to explore that notion in more depth, we will examine a collection of *hacks* by asking four questions:

1. What is the role of imagination in creating a new way of seeing, thinking or doing?
2. What is the context in which those transformations took place?
3. What is the subject of the “hack?”
4. What was changed, transformed, or altered as a result?

While it is impossible to even attempt to catalog each and every person, hack or event that has had such an impact there are some exemplars that we can point to that can help us understand the nature of the hacker imagination.

While we will inevitably touch on the content of many great thinkers and their ideas, the focus of the class will be primarily on the context in which their ideas had meaning.

Prerequisite(s): None

Co-Requisite (s): None

Concurrent Enrollment: None

Recommended Preparation: None

Required Readings and Supplementary Materials

Readings will be available through blackboard and will be comprised of selections from original texts when possible.

Description and Assessment of Assignments

Students will complete four “evaluation” papers where they will make a case for a particular figure who qualifies as “embodying the hacker imagination” within each of the four areas of inquiry we set forth. Each paper/presentation will account for 20% of the student’s grade. The final paper will require each student to present an innovation in thought, sound, words, or technology that demonstrates and reflects the hacker imagination of the present day and will be worth 20% of the grade.

Grading Breakdown

Assignment	Points	% of Grade
Evaluation Paper 1	100	20
Evaluation Paper 2	100	20
Evaluation Paper 3	100	20
Evaluation Paper 4	100	20
Final Paper	100	20
TOTAL	500	100

Assignment Submission Policy

Papers will be submitted via Turn It In on Blackboard by 5 p.m. the day of the assignment. Except in the case of documented emergency, no late papers will be accepted.

Additional Policies

Add any additional policies that students should be aware of: late assignments, missed classes, attendance expectations, use of technology in the classroom, etc.

Course Schedule: A Weekly Breakdown

The course is divided into 4 sections or units. Each week will be composed of a selection of “hackers” on a different theme.

The four areas are: thought, sound, words, and machines

Topics to be covered (tentatively) are:

Thought: Philosophy, Politics, and Science

WEEK ONE: Hacking the Mind

This week will explore the context of philosophical discourse not as a history of ideas, but as a rich space of context and innovation which has challenged and given rise disruption in the broader discourse as well.

Readings:

Zeno's Paradoxes, *Stanford Encyclopedia of Philosophy* <http://plato.stanford.edu/entries/paradox-zeno/>
Robert N. Gaines "Knowledge and Discourse in Gorgias's "On the Non-Existent or On Nature" *Philosophy & Rhetoric* Vol. 30, No. 1 (1997), pp. 1-12
David Hume, *Of Miracles* from *An Enquiry Concerning Human Understanding*.
The Harvard Classics. 1909–14.
Friedrich Nietzsche, *On Truth and Lies in a Nonmoral Sense*

WEEK TWO: Hacking Gender

This class will examine the ways in which the concept of gender has been disrupted both as a social and political category.

Readings:

Judith Butler, *Gender Trouble*, pp. 1-34
Sandra Harding, *The Science Question in Feminism*, pp. 30-57, "Gender and Science: Two Problematic Concepts"
Elizabeth Cady Stanton, *The Solitude of Self*, *History of Woman Suffrage*, Elizabeth C. Stanton et al., eds., vol. 4, 1902.

WEEK THREE: Hacking Science

How does science change? More often than not it is a gradual process, but occasionally we find ourselves in moments of revolution. In this class we will explore how those revolutions happen and how context, as much as content, shapes science.

Readings:

Thomas Kuhn, *The Structure of Scientific Revolutions*, pp. 1-10; 66-91
Charles Darwin, *On The Origins of Species*, "Natural Selection"
Brian Greene, *The Elegant Universe*, pp. 6-14 "Tied Up with String"
Richard Feynman, *Surely, You Must Be Joking Mr. Feynman!*, Norton: 1985, 352pp.

WEEK FOUR: Hacking Society

This week we examine two moments of historical and revolutionary change in the world: the birth of communism as a political philosophy and the emergence of civil rights in America in the 1960s. What are the contexts in which political revolution occur? How do issues of politics, war, social inequality and economics make this kind of large scale social hacking possible?

Readings:

Karl Marx, *The Communist Manifesto*
Mao Zedong, *Quotations from Chairman Mao Tse-tung*, pp. 1-57.
Franz Fanon, *Black Skin, White Masks*, "The Black Man and Language" pp. 1-24
Malcolm X. *The Autobiography of Malcolm X*, pp. 87-136. "Detroit Red" and "Hustler"
EVALUATION PAPER ONE DUE

Sound: Noise, Music, Genre

WEEK FIVE: Sound and Noise

What makes something music or sound instead of just "noise?" This week we explore the construction of how music is understood in the context of noise, silence, and meaning as it is attributed to both.

Readings:

Jacques Attli, *Noise: The Political Economy of Music*, "Composing" pp. 133-168.
John Cage, *Silence: Lectures and Writings*, pp. 67-76 "History of Experimental Music in the US"

WEEK SIX: Music as Politics

There is almost no moment of social or political significance that hasn't had a soundtrack or theme song. We will look at the ways in which political issues both create a context for music to have meaning, as well as stifle the possibilities for musical expression.

Readings:

Neil Slaven, *Electric Don Quixote: The Definitive Story of Frank Zappa*, pp. 3-65.

Lawrence Grossberg, "The Politics of Youth Culture: Some Observations on Rock and Roll in American Culture" pp. 104-123. In *American Rock*

Lauren Duca, *By The Way, Mozart Had An Equally Talented Sister*, Huffington Post, 10/30/2015

WEEK SEVEN: Music

Music provides a language all to itself as a means for expression. How is music a medium for communicating what can't be said any other way? What kinds of breakthroughs in context gave rise, shape, and from the idea of "music" itself?

Readings:

David Byrne, *How Music Works*, pp. 9-74. "Creation in Reverse" and "My Life in Performance"

Arthur Schoenberg, *Structural Functions of Harmony*, pp. 1-15, "The Principle of Harmony"

Bach, *Brandenburg Concertos* (album)

Mozart, *The Magic Flute* (album)

Phil Spector and the Beatles, *Sergeant Pepper's Lonely Hearts Club Band* (album)

WEEK EIGHT: Music as Remix

Born out of a particular set of needs and at a particular time in American history, rap and hip hop emerged as a unique form of music. How and why did that happen and what are the aspects that allow rap to hack music as well as hack culture at large?

Readings:

NWA, *Straight Outta Compton* (film)

Grandmaster Flash, *The Message* (album)

Tricia Rose, *Black Noise* pp. 1-28. "Voices from the Margins"

EVALUATION PAPER TWO DUE

Words: Play, Literature, News

WEEK NINE: The Play is the Thing

Language is an amazing instrument. Everyone seems to know it, but no one seems to be in control of it. How does language shape how we see the world? How does how we see the world shape language? How is play a form of hacking?

Readings:

Jacques Derrida, *Structure, Sign and Play in the Discourse of the Human Sciences*. Pp. 1-13. 1966.

William Shakespeare, *Hamlet*, full text

WEEK TEN: Science Fiction: Dreams into Action

We we look at a specific genre of literature, we can begin to ask how it is that science fiction shapes the world we live in? Is it truly as Tom Disch argues the dreams our stuff is made of?

Readings:

Ursula K. LeGuin, *The Left Hand of Darkness*, full novel

Tom Disch, *The Dreams Our Stuff Is Made Of*, pp. 57-77, 115-137. "From the Earth to the Moon in 101 Years" and "Can Girls Play Too?"

HG Wells, *Predictions: Atomic Bombs* (1914)

WEEK ELEVEN: Breaking News

From the classic days of print to the era of Google News, the medium of news reporting has undergone radical changes. How has news been hacked by various forms, institutions and players outside of the news business?

Readings:

Hunter S. Thompson, *Fear and Loathing in Las Vegas*, full novel

Gaye Tuckman, *Making News*, pp. 1-38.

Neil Postman, "Are you watching Television of is Television Watching You?" How to Watch TV News, pp. 1-11.

Orsen Welles, *Citizen Kane* (viewing)

WEEK TWELVE: Fiction, Imagination, Reflection

Literature remains one of the most powerful forces we have to shape our understanding of the world. One of its most compelling qualities is the power to imagine and reflect on our world. How does that voice from within emerge and what are the contexts that shape and give it meaning?

Readings: (students will select one novel)

David Foster Wallace, *Infinite Jest*

Toni Morrison, *The Bluest Eye*

Sandra Cisneros, *The House on Mango Street*

EVALUATION PAPER THREE DUE

Machines: Invention, Code, Networks

WEEK THIRTEEN: Invention

We all like to imagine innovation as the work of individual genius. However, when we dig deeper, we can often see that innovation without context rarely produces anything of note. So how did we invent the 21st century? What created the context? What made this all possible?

Readings:

Mark Seifer, *Wizard: The Life and Times of Nicolai Tesla*, pp. 27-40 "Tesla Meets the Wizard of Menlo Park"

Katie Hafner, *Where Wizards Stay Up Late* pp. 160-186, "Hacking Away and Hollering"

Vannevar Bush, *A Vision of Hypertext* 3 pp.

Isaacs Asimov, *The Three Laws of Robotics* from "Runaround," *I, Robot*. pp. 25-45

WEEK FOURTEEN: Communication

The 20th and 21st century can be understood as an age of communication. What are the elements of this communication revolution? How many of them are really new? What is the context of innovation that ushered in these radical changes?

Readings:

Tom Standage, *The Victorian Internet*, pp. 105-145.

Gordon Moore, *Moore's Law*, pp. 273-319. "The Invention of Intel"

Vint Cerf, *The Internet is for Everyone* <https://www.ietf.org/rfc/rfc3271.txt>
Manuel Castells, *The Network Society*, pp. 28-78, "The Information Technology Revolution"

WEEK FIFTEEN: Hacker Culture

What are "hackers" in the truest sense? How did computer culture emerge from a world of criminals, hippies, countercultural misfits, and geniuses?

Readings:

Douglas Thomas, *Hacker Culture*, pp. 5-46, "Hacking Culture"

Fred Turner, *From Counterculture to Cyberculture* pp. 141-174. "Virtuality and Community on the WELL"

Grace Murray Hopper, "The Education of a Computer" pp. 243-249. ACM '52 Proceedings.

WEEK SIXTEEN: Cupertino and Beyond

The two giants: Apple and Google. What were the conditions that allowed them to emerge when they did in the ways they did?

Readings:

Walter Isaacson, *Steve Jobs*, pp. 42-85. "Apple I" and "Apple II"

David Vise, *The Google Story*, pp. 1-112.

EVALUATION PAPER FOUR DUE

FINAL PAPER DUE AT THE TIME AND DATE SET BY UNIVERSITY FOR FINAL EXAM

Statement on Academic Conduct and Support Systems

Academic Conduct

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu> or to the *Department of Public Safety* <http://adminopsnet.usc.edu/department/department-public-safety>. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage <http://sarc.usc.edu> describes reporting options and other resources.

Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicssupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu> will

provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

Emergency Preparedness/Course Continuity in a Crisis:

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.