

# Dr. Dean Taciuch

## George Mason University

Spring 2017

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### Honors 353: 003 & 008 Technology in Contemporary Society

Those of us who have contributed to the new science of cybernetics thus stand in a moral position which is, to say the least, not very comfortable. We have contributed to the initiation of a science which, as I have said, embraces technical developments with great possibilities for good and for evil. We can only hand it over to the world that exists about us, and this is the world of Belsen and Hiroshima. We do not even have the choice of suppressing these new technical developments. They belong to the age, and the most any of us can do by suppression is to put the development of the subject into the hands of the most irresponsible and the most venal of our engineers.

The best we can do is to see that a large public understands the trend and the bearing of the present work, and to confine our personal efforts to those fields, such as physiology and psychology, most remote from war and exploitation. As we have seen, there are those who hope that the good of a better understanding of man and society which is offered by this new field of work may anticipate and outweigh the incidental contribution we are making to the concentration of power (which is always concentrated, by its very conditions of existence, in the hands of the most unscrupulous). I write in 1947, and I am compelled to say that it is a very slight hope.

Norbert Wiener, *Introduction to Cybernetics* (39)

#### Course Description

The course will begin with the concept of Cybernetics, popularized by Norbert Wiener's *Human Use of Human Beings*, a book he wrote (in 1950) specifically to explain cybernetics to the interested non-expert. Cybernetics, as Wiener and the first generation of computer engineers defined it, is the science of control and communication in machines, animals, and human beings. Cybernetics gave us the concepts of "cyberspace" and the "cybernetic organism"—the cyborg. The cybernetic concept of the transhuman (or posthuman) raises questions about what it means to be human. We will explore these concepts by studying later technological advances in computer science, biology, sociology, philosophy, and the arts.

#### Texts:

##### Print:

Norbert Wiener. *The Human Use of Human Beings*. (\$15.00)

Nick Bostrom. *Superintelligence: Paths, Dangers, Strategies*. (\$15.95)

Prices as of January 2017. If you are charged more at the bookstore, let me know.

Both texts are available as e-books as well, but the Wiener e-book is of poor quality.

##### Online:

Vernor Vinge, "Technological Singularity"

Ray Kurzweil, *The Ray Kurzweil Reader*

Bill Joy "Why the Future Doesn't Need Us"

Nick Bostrom, "Are You Living in a Computer Simulation?"

#### Office

Robinson A, 407C

#### Hours:

MW 2:00 – 3:00

#### email

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## Course Site:

We will use Blackboard for online discussions and essay submissions.

## Assignments:

The assignments in this course consist of three essays, weekly reading responses, and a final exam. The first essay will be an analysis of some complex system in light of Norbert Wiener's concept of cybernetics. The system may be biological, social, mechanical, digital, or any combination of these. The second essay will be on the concepts introduced in the online readings and the Bostrom text (Singularity, AI). The third essay will be research topic on a specific technology or a specific issue related to technology.

The weekly responses will be posted to Blackboard. The weekly responses will be on a specific question which I will post, and they will be due before class most weeks (if there is an essay due that week, there will no weekly response). You may add to your posts after class, of course. I will also ask you to comment on the posts of other students. To earn full credit for the responses, you must post 10 weekly responses, and comment on at least five of your fellow students' posts.

The final exam will be a cumulative in-class short essay exam. I will post study terms a week or so before the exam. Bluebooks are not required, but they are convenient.

Essay 1	Feb. 26	20%
Essay 2	April 9	20%
Essay 3	May 7	25%
Weekly reading responses	most weeks before class	15%
Final Exam	May 9 (007), May 10 (009)	20%

## COURSE POLICIES

**Grading:** Grades on the essays will be based primarily on the quality of the writing. I value clear, focused writing with plenty of examples. Grades on the research essay will be based on the quality of the research as well: I expect you to use the GMU Library databases as well as the Internet.

**Late Assignments:** Late papers will lose 5% per day unless you make prior arrangements with me.

**Revision Policy:** The essays may be revised for a higher grade, but they must be substantially revised. You cannot lose a grade by revising, but a higher grade is not guaranteed. I have found that "B" papers (or higher) are often more difficult to revise, since serious revision requires thoroughly changing the essay's structure, and "B" papers usually have a fairly good structure. "C" papers (or lower) often respond more dramatically to revision, since the major changes they require are often more straightforward. I recommend revising "C" papers or lower only. If you plan to revise a "B" paper, please see me beforehand so we can discuss a revision strategy.

### All revisions must be turned in by April 23

**Plagiarism:** Plagiarism means using the exact words, opinions, or factual information from another source without giving that source credit. Writers give credit through the use of accepted documentation styles, such as parenthetical citation, footnotes, or end notes; a simple listing of books, articles, and websites is not sufficient.

Writers must include a Works Cited or References list at the end of their essay, providing full bibliographic information for every source cited in their essay, including the course textbooks.

Instructors at George Mason University are bound to uphold the **George Mason Honor Code**, which requires us to report any suspected instances of plagiarism to the Honor Committee. All judgments about plagiarism are made after careful review by the Honor Committee, which may issue penalties ranging from grade-deductions to course failure to expulsion from GMU.

### Important Dates

First day of classes	Monday Jan 23
Last day to add classes Last day to drop with no tuition penalty	Monday Jan 30
Last day to drop with a 33% tuition penalty	Monday Feb 13
Final Drop Deadline (67% tuition penalty)	Friday Feb 24
Selective Withdrawal Period (undergraduate students only)	Monday Feb 27 – Friday March 24
Spring Break	Mon. March 13 – Sun. March 19
Incomplete work from Fall 2012 due to instructor	Friday March 31
Last day of classes	Saturday May 6
Reading Day	Monday May 8 – Tuesday May 9
Exam Period	Wed. May 10 – Wed. May 17



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**George Mason University**  
**Spring 2017**

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**Honors 353: 003 & 008**  
**Technology in Contemporary Society**

**Course Schedule**

The schedule of readings will almost certainly change during the course of the semester, depending on the interests in the class. We may not discuss all readings in class, but you should be prepared to discuss the readings if and when they come up in class discussions.

**WEEK 1 (JAN 24 – 26): COURSE INTRODUCTION AND CONCEPTS**

Cybernetics, communication, codes, and control.

*HUHB* Preface, Ch 1

**WEEK 2 (JAN 31 – FEB 2): FEEDBACK**

*HUHB* chapters ch 2 - 3

Response 1 (on negative feedback)

**WEEK 3 (FEB 7 – 9): HOMEOSTASIS**

*HUHB* chapters 4-8

Response 2 (on homeostasis)

**WEEK 4 (FEB 14 –16): THE 2ND INDUSTRIAL REVOLUTION**

*HUHB* chapters 9-11

Response 3 (on 2nd Industrial Revolution)

**WEEK 5 (FEB 21 –23): TECHNOLOGICAL SINGULARITY**

Vernor Vinge, "Technological Singularity"

Ray Kurzweil : After the Singularity and other selections from Kurzweil Reader

**Essay 1 due Feb 26**

**WEEK 6 (FEB 28 – MARCH 2): AI**

Kurzweil Reader: Will Machines Become Conscious?

Bostrom *SI* ch 1-2

Response 4 (on AI)

**WEEK 7 (MARCH 7 – 9): SUPERINTELLIGENCE**

Bostrom *SI* ch 3-6

Response 5 (types of SI)

**WEEK 8 (SPRING BREAK)**

**WEEK 9 (MARCH 21 – 23): THE CONTROL PROBLEM**

Bostrom *SI* ch 7-10

Response 6 (Control)

**WEEK 10 (MARCH 28 – 30): VALUES**

Bostrom *SI* ch 11-13

Response 7 (Values)

**Office**  
Robinson A, 407C

**Hours:**

**email**  
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**WEEK 11 (APR 4– 6): AI STRATEGIES**

Bostrom *SI* ch 14-15 and Afterword

**Essay 2 due** April 9

**WEEK 12 (APR 11 – 13): RESEARCH AND TECHNOLOGY**

Databases

Future of Life Institute & KurzweilAI.net

Synthesis: Using & Citing Sources

Response 8 (Research Topics)

**WEEK 13 (APR 18 – 20): THE SIMULATION ARGUMENT**

Bostrom "Are You Living in a Computer Simulation?" and various responses

Response 9 (The Simulation argument)

**All revisions due by April 23**

**WEEK 14 (APR 25 – 27): ON THE OTHER HAND**

Kurzweil Reader: "Are We Becoming an Endangered Species?"

Bill Joy : "Why the Future Doesn't Need Us"

Response 10 (Relinquishment)

**WEEK 15 (MAY 2 – 4): IN CONCLUSION**

Research Paper discussions

**Research Paper due** May 7

**Final Exam Times:**

**Section 003: Tues May 16 1:30 - 4:15**

**Section 008: Tues May 16 10:30 - 1:15**



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