

**Mad Scientists, Bad Scientists and Evil Geniuses:
The Complicated Relationship between Science and Society
HONR100B** **Spring 2013**

Instructor:

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Lecture: MWF 1:00 – 1:50 p.m.; Dupont 324

Office Hours:

M 9:00 – 10:00 a.m.; 2:00 – 3:00 p.m.
W 9:00 – 10:00 a.m.; 2:00 – 3:00 p.m.
F 11:00 – 12:00 p.m.
or by appointment

Required Course Materials:

Christopher Frayling, *Mad, Bad and Dangerous? The Scientist and the Cinema*
*Mary Shelley, *Frankenstein*
*Robert Louis Stevenson, *Dr. Jekyll, Mr. Hyde*
H. G. Wells, *The Island of Dr. Moreau*
Daniel Charles, *Master Mind: The Rise & Fall of Fritz Haber, the Nobel Laureate Who Launched the Age of Chemical Warfare*
Alan Moore and Dave Gibbons, *Watchmen*
*available as a free iBook

On-line Readings:

Roslynn Doris Haynes, *From Faust to Strangelove: Representations of the Scientist in Western Literature*;
Ed Regis, *Great Mambo Chicken and the Transhuman Condition*
“On Being a Scientist”
<http://books.nap.edu/readingroom/books/obas/>
others as posted on Canvas or at the website provided

Course Description: In this course we will examine how science and scientists have been perceived and described in the literature, cinema and other media. We will explore numerous classic depictions of scientists “gone astray” (e.g. Victor Frankenstein, Dr. Henry Jekyll) as well as more modern, morally/ethically questionable ones (Werner Heisenberg, Fritz Haber) in an attempt to determine why they are viewed as mad, bad and evil. We will also examine the complex and inspiring interplay between science fiction and real scientific discovery.

The goals of the course are

- to engage in several writing assignments and become better writers
- to engage in numerous discussions, speaking assignments, and become better public speakers
- to make use of primary sources of information and be able to draw conclusions from the materials
- to utilize research techniques and conduct research relevant to the subject
- to formulate an academic argument with appropriate research documentation
- to articulate the value of the goals of the honors program as it relates to the liberal arts as an multidisciplinary, systematic approach to knowledge and gain an appreciation for the nature of science
- to apply specific academic solutions to broader, interdisciplinary fields of study especially the difficulties faced in the advancement of science. In particular, ideas from a variety of disciplines including English (literature), History (biography), Psychology (motivation), Philosophy (ethics/morals), and Science (definition of the scientist/science) will be interwoven to examine the origins, evolution and implications of the mad scientist/bad scientist/evil scientist motif
- to integrate multiple viewpoints involving different cultures and/or perspectives, especially the ethical principles underlying scientific investigations and the impact of a time period (as well as the political, social and religious climate) upon the perception of science and scientists

This course will emphasize reading and writing. You will be reading numerous books, discussing them in class, and communicating your ideas about them in a variety of written forms (both formal and informal). Writing is an important skill. You will be writing to think and writing to learn. In the process you will also be developing the skills to learn to write. In particular, we will be emphasizing learning to write clearly and concisely for a varied audience. This is not a class in “what to think”; it is a class in “how to think.” Class participation, therefore, where you can demonstrate this will also be a significant portion of your grade.

Grading:

4 papers at 100 points each	400 points
Project	150 points
Canvas Journal entries	100 points
Weekly blogs	100 points
Class Participation	100 points

Final Reflection Paper

150 points

Students with a class average of C- or less will receive a midsemester report.

The overall grade scheme used in this course reflects the following from the *Dictionary of Academic Regulations*:

A	excellent	B+		C+		D+	
A-		B	commendable	C	acceptable	D	marginal
		B-		C-		F	failure

Grades will be determined based on points accumulated from papers, projects, journals, and class participation:

Points accumulated	Letter Grade	Points accumulated	Letter Grade
≥ 930 points	A	769 – 730 points	C
929 – 900 points	A-	729 – 700 points	C-
899 – 870 points	B+	699 – 650 points	D+
869 – 830 points	B	649 – 600 points	D
829 – 800 points	B-	below 600 points	F
799 – 770 points	C+		

Note: I reserve the right to give “pop” quizzes if discussions are not reflective of your reading and understanding of the material.

Honor System: All graded work (online journals, writing assignments, projects and finals) must be your own and pledged as such:

I hereby declare upon my word of honor that I have neither given nor received any unauthorized help on this work.

Signed

Online journal entries are deemed pledged by your submission. **No late assignments or submissions will be accepted; these are automatic zeros.** Please, discuss difficulties with the course schedule with me in advance.

Class Participation: This course will not be a chronology of important dates and players or facts. Instead, it is meant to give you a feel for how science is perceived throughout the ages, concentrating on each time period’s social, political, and religious climate. Because of this, your feelings, impressions, ideas, etc. are a vital component to everyone’s understanding of the material. Each student brings a different perspective to the discussion. Class attendance is essential since participation in discussion of the readings contributes to your overall course grade. Absences negate the possibility for your thoughtful contributions to the discussions. (Immediate notification of the instructor is mandatory in the case of absences for known reasons). Classroom participation will follow the rules we, as a group, establish. I expect each member of the class to abide by these rules whether they entail raising hands before speaking, keeping an appropriate tone and volume, paying attention to the speaker, etc.

Points for participation will be awarded by the following system:

The base number of points is 50. These points will be awarded on presence in the classroom.

Each absence will see the deduction of 2 points unless permitted by the instructor.

+: Awarding of 2 points for substantial, informed and appropriate contributions to the discussion

-: Removal of 2 points for inappropriate contributions. This includes violating our discussion rules, impolite conduct toward another student, dominating the discussion to the point where others cannot contribute, etc.

0: No points due to presence but no active participation.

Online Journal Entries: Each lecture will have a discussion question posted on Canvas. These questions are meant to serve as “ice-breakers” for the next lecture’s discussion. It is beneficial, therefore, that you answer these questions after completing the reading and reflecting on the material. All submissions are due by nine (9 am) on the day of the lecture. The questions will require submission in essay format. Feel free to cut and paste from a word-processing program so that you have a copy of your thoughts/feelings/reflections, etc. These questions are open-ended and are a chance for you to think about the material in the context of your experiences, your interests, other readings, etc. They are not meant to be reiterations of the readings. Electronic submission constitutes your abiding by the Mary Washington Honor Code. If you cannot submit your entry electronically through Canvas, you must email or present a hand-written copy by the submission deadline for credit.

Blogs: Each week or so you will post to our blog site. (Instruction on blogging will be given during initial course meetings.) These postings will be reflections on the larger themes brought out in the readings, movies and in-class discussions and will enable us to carry the conversation outside of the classroom. To obtain credit for your posting, you must reflect and write substantively. Reiteration of another’s ideas without significant elaboration will not be counted. I will grade 10 of these based on completion (not A, B, C, etc.). For each “late” one, you will receive ½ credit; for each missing one you will receive no credit.

Papers: There will be 4 assigned, 2-page, typed papers over the course of the semester to enable you to show your knowledge of the subject matter and/or readings by writing about how they fit into the context of the course. Each paper must have 1.5 line spacing with 1 inch margins and use size 12 font. (References will not be counted toward the pages limit.) Proper grammar, spelling, clarity of writing will be important as poorly written papers will not convey your thoughts and ideas. Students needing assistance in writing are advised to talk to the instructor or visit the Writing Center. The major purpose of the papers, however, is to give you the opportunity to synthesize your understanding into a coherent piece of work; therefore, emphasis will be placed on the construction of the paper and the process of writing.

Projects: One of the goals of this course is to assess the ethical “rules” governing scientific investigations and what makes science “good” or “bad.” Using the case studies we have examined as a guide, select other case studies from the news, literature or the cinema to present to the class (using the medium that you feel best delivers your message)) that describes the issues involved—both scientific and ethical, political, religious, or social (even potentially personal) pressures or stimuli, the way in which the scientist deals with all of these factors, and your assessment of the “mad,” “bad,” or “evil.”

Final: Your final examination in this course is an assessment of your learning over the course of the semester. Using your blogs, papers, projects, etc. you will construct a portfolio of your work and describe how you have progressed from the first day of class to the last.

Other “helpful” information:

The tentative schedule that follows is how I see the course arranged. It is not concrete. If there is material that you, as a class, find interesting and want to spend a little more time on, we will spend more time on that topic. Success in this course requires considerable work on your part. Successful students typically spend a minimum of 1 hour per day on each subject. For this course, this time is best devoted to reading ahead for the next lecture and reflecting on our discussions (blogging is a great means for this). Some helpful "secrets" for success in a course like this include

- reading the material prior to class.
- attending the lectures and taking good notes.
- actively participating in discussions and asking questions.
(The only “stupid” question is the one that goes unasked.)
- enlisting the aid of the instructor (office hours or appointments).
- reviewing appropriate sections of the text(s) and all notes after class.
- seeking help from the Writing Center.

Course Themes:

What is Science? How do you describe “The Scientist”?

Alchemy (“The Tree of Knowledge”) to the Scientific Method

Stepping on God’s Turf (scientific method and Newton, “Jerusalem”)

Playing God (case studies: Rotwang, Frankenstein, Jekyll, Moreau)

Science for Good or Evil?

the “technological imperative” (Haber)

“beast of progress” (Heisenberg)

hubris and science/scientists out of control or trying to control too much (Watchmen)

Course Outline:

1/14 Introduction to the course Introduction to the Honors Program	1/16 What is Science? Definitions of science	1/18 The Scientist "On Being a Scientist" blogging
1/21 NO CLASS	1/23 Alchemy vs. Scientific/Baconian Method (Haynes)	1/25 LIBRARY INSTRUCTION Simpson Library room 225
1/28 <i>Newton's Dark Secrets</i> Isaac Newton (Frayling)	1/30 "Jerusalem" The Father of them all: <i>Metropolis</i> (1927) (Frayling, Abrams)	2/1 <i>Metropolis</i> (1927)
2/4 Discussion of <i>Metropolis</i> (Frayling)	2/6 Frankenstein	2/8 paper 1 due Frankenstein
2/11 Frankenstein	2/13 <i>Frankenstein</i> (1910; 1931) (Frayling)	2/15 <i>Frankenstein</i> (1910; 1931)
2/18 Dr. Jekyll, Mr. Hyde	2/20 Dr. Jekyll, Mr. Hyde	2/22 Dr. Jekyll, Mr. Hyde
2/25 Frankenstein and Dr. Jekyll (Toumey)	2/27 <i>Dr. Jekyll/Mr. Hyde</i> (1932)	3/1 paper 2 due <i>Dr. Jekyll/Mr. Hyde</i> (1932)
3/4 SPRING BREAK	3/6 SPRING BREAK	3/8 SPRING BREAK
3/11 The Island of Dr. Moreau	3/13 The Island of Dr. Moreau	3/15 The Island of Dr. Moreau
3/18 segway to reality: triumphant discovery (Frayling)	3/20 Real scientists (TED.com, The Secret Life of Scientists)	3/22 Master Mind
3/25 paper 3 due Master Mind	3/27 Master Mind	3/29 Master Mind
4/1 Master Mind	4/3 <i>Copenhagen</i>	4/5 <i>Copenhagen</i> Fallout from War (Haynes and Frayling)
4/8 discussion of <i>Copenhagen</i>	4/10 Watchmen	4/12 Watchmen
4/15 paper 4 due Watchmen	4/17 Watchmen	4/19 Great Mambo Chicken (Mania; Chapter 4)
4/22 <i>Dr. Horrible's Sing-Along Blog</i>	4/24 conclusions (Frayling)	4/26 Research and Creativity Day PROJECT PRESENTATIONS

Final Exam: Monday, April 29, 2013; 12:00 pm

Reading Assignments:

Date	Text	Reading
1/18	“On Being a Scientist” http://www.nap.edu/catalog.php?record_id=4917#toc Frayling, Christopher, <i>Mad, Bad and Dangerous?</i>	on-line Ch 1: 9-32
1/23	Haynes, Roslynn, “The Alchemist in Fiction: The Master Narrative” at http://www.hyle.org/journal/issues/12-1/haynes.htm Haynes, Roslynn, <i>From Faust to Strangelove</i> . Chapter 2	on-line Canvas
1/28	Frayling, Christopher, <i>Mad, Bad and Dangerous?</i>	Ch 1: 32-47
1/30	Frayling, Christopher, <i>Mad, Bad and Dangerous?</i> Abrams, Jerold J., “The Dialectic of Enlightenment in <i>Metropolis</i> ”	Ch 3: 60 – 77 Canvas
2/4	Frayling, Christopher, <i>Mad, Bad and Dangerous?</i>	Ch 4: 109-117
2/6	Shelley, Mary, <i>Frankenstein</i>	Letters - Ch 10
2/8		Ch 11 - 16
2/11		Ch 17 - 24
2/8	Frayling, Christopher, <i>Mad, Bad and Dangerous?</i>	Ch 4: 117-133
2/18	Stevenson, Robert Louis, <i>Dr. Jekyll, Mr. Hyde</i>	Ch 1 – 4
2/20		Ch 5 – 8
2/22		Ch 9 and 10
2/25	Toumey, Christopher P., “The Moral Character of Mad Scientists: A Cultural Critique of Science” accessible in JSTOR	on-line
3/11	Wells, H.G., <i>The Island of Dr. Moreau</i>	Ch I - X
3/13		Ch XI - XVI
3/15		Ch XVII - XXII
3/18	Frayling, Christopher, <i>Mad, Bad and Dangerous?</i>	Ch 4: 133-166
3/22	Charles, Daniel, <i>Master Mind</i>	Ch 1 - 4
3/25		Ch 5 - 7
3/27		Ch 8 - 9
3/29		Ch 10 - 11
4/1		Ch 12 -14
4/5	Haynes, Roslynn, <i>From Faust to Strangelove</i> . Chapter 14, pages 246-263 Frayling, Christopher, <i>Mad, Bad and Dangerous?</i>	Canvas Ch 3: 77-108
4/10	Moore, Alan and Gibbons, Dave, <i>Watchmen</i>	Ch 1 – 3
4/12		Ch 4 – 6
4/15		Ch 7 – 9
4/17		Ch 10 – 12
4/19	Regis, Ed, <i>Great Mambo Chicken and the Transhuman Condition</i>	Mania – Ch 4 on-line
4/24	Frayling, Christopher, <i>Mad, Bad and Dangerous?</i> “On Being a Scientist” http://www.nap.edu/catalog.php?record_id=4917#toc	Conclusion on-line

