

## HoS 100 Lecture Schedule

This is a tentative schedule of lecture topics and quiz/paper due dates. While this is a pretty close description of what will happen this semester, the instructor reserves the right to made adjustments to this as we go along.

Also note that reading assignments will be given in lecture.

Jan. 23 **Introduction: Science and history.** What does it mean for science to have a history?  
What makes a scientist great?

### I. Isaac Newton: Father of Gravity

Jan. 25 A. Biography to the *Principia*.

Jan. 30 B. Gravity and all that: Gravity and mechanics before Newton

Feb. 1 C. Newton's *Principia*

1. Laws of motion

2. The Moon Test

3. Uniting the celestial and terrestrial

#### Quiz 1

Feb. 6 D. Gravity after the fact. Newton's ideas in the XVIII

Feb. 8 E. The Newton we do not know.

1. Alchemy

2. Theology

#### Quiz 2

Feb. 13 F. Post *Principia* biography.

*First paper due Feb. 20*

### II. Louis Agassiz: The Great Who?

Feb. 15 A. Natural History in the eighteenth century

1. Taxonomy

2. Geology

#### Quiz 3

Feb. 20 B. Fossil fish and a Taxonomy in the mind of God

Feb. 22 C. A Hero and a Heretic (Einstein of the 19<sup>th</sup> C. and polygenist)

#### Quiz 4

Feb. 27 D. Glaciers and Evolutionists

Mar. 1 E. Institutions and the teacher of us all.

#### Quiz 5

*Second paper due Mar 8*

### III. Charles Darwin: The Man Who Put Monkeys in the Family Tree!

Mar. 6 A. General biography

Mar. 8 B. Voyage of the Beagle

#### Quiz 6

Mar. 20 C. Creating the *Origin*

Mar. 22 D. Reception of evolution vs. Reception of natural selection

**Quiz 7**

Mar. 27 E. Cultural and religious reactions

Mar. 29 F. Darwin as an icon

**Quiz 8**

*Third paper due Mar. 15*

**IV. Albert Einstein: More Gravity**

Apr. 3 A. Biographical introduction

Apr. 5 B. Electromagnetism and its problems

**Quiz 9**

Apr. 10 C. Special relativity

Apr. 12 D. General relativity

**Quiz 10**

Apr. 17 E. Einstein's aftermath

1. Pacifism and the Bomb

2. Poster-child for science

*Fourth paper due Apr. 24*

**V. Barbara McClintock: Science on the edge**

Apr. 19 A. Mendel and the origin of genetics

**Quiz 11**

Apr. 24 B. McClintock: Her life and work

Apr. 26 C. Great scientists as mavericks?

**Quiz 12**

May 1 D. Great scientists and gendered science

May 3 E. Greatness and the twentieth century

**Quiz 13**

*Fifth paper due on the final exam date. [No in-class exam]*

May 10 **Conclusion and Reflections**

May 12 Review and discussion day.

**History of Science 100**  
**Spring 2001.**  
**Course Syllabus**

**Instructor:** Blair Nelson

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**Office Hours:** Tues. and Thurs., 4:30-5:30 p.m. and by appointment.

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**Objectives:** One of the distinctive features of our time is the large role science has come to play in western (and non-western) culture. More resources, attention, and expectations are focussed on the study of nature than any period in history prior to the past two centuries. With this dominance of science as a feature of modern culture comes an image of “the scientist.” Our culture celebrates the “great scientists” who have help to shape our world. The purpose of this course is to examine this notion of “greatness” and the image of science it assumes by evaluating it with respect to five “great” scientists. Three of these are names you would expect: Isaac Newton, Charles Darwin, and Albert Einstein. Through historical investigation, we will attempt to assess their contributions to science and their relation to western culture in general. In order to push on our received notions of scientific “greatness” (or perhaps to indulge your instructor’s own view of things) we will also study two scientists who may well be counter-examples to our popular notions of “greatness.” Louis Agassiz (who?!) and Barbara McClintock (well, at least she won a Nobel Prize) are perhaps new names to you, but they have their own claims to our attention and will help us to critically assess how we view science and its “great” practitioners.

**Requirements:**

Attendance	10 %
Weekly Quizzes	20 %
Papers	70 %

*Attendance:* a sign-in sheet will be circulated each class meeting.

*Quizzes:* Each Thursday, beginning Feb. 1, there will be a 10 question quiz at the end of the period, using True/False and multiple-choice format covering the lecture and reading material of the week ending the previous Tuesday. The two lowest scores will be dropped from your grade.

*Papers:* The course is divided into five units dealing with our five specimen “great” scientists. At the end of each unit you will write a paper examining the notion of “greatness” with respect to that unit’s scientist and comparing him or her with the other individuals we have studied to that point. Your paper on Newton will, of course, be exclusively about him, but your paper on Louis Agassiz will discuss both scientists, and so on until the final paper that

will treat all five. These papers will build on each other. You do not need to completely rewrite your material on Newton to include it in the second paper, though some revision may be necessary, especially if your concept of “greatness” changes over the course of the semester. I expect that what we learn in the course of the semester will lead you to rewrite some of your earlier material as we go along. Of course, this kind of evolving work will be easiest if done on a word processor. No extra research is required for these papers beyond the course readings and lecture material.

The length and relative weight of each paper:

Unit 1: Newton	2-3 pages	10%
Unit 2: Agassiz	4-5 pages	10%
Unit 3: Darwin	6-7 pages	15%
Unit 4: Einstein	8-9 pages	15%
Unit 5: McClintock	10-11 pages	<u>20%</u>
		70% of the total grade.

I will provide a handout outlining what I am looking for in these papers and the method of grading.

### Readings:

Readings will be assigned from the following:

- A. Course Reader – available in the History of Science Dept. office, 7143 Soc. Sci.  
The office is open from 9:00 to 4:00.
- B. Banesh Hoffmann, *Albert Einstein: Creator and Rebel*. In the bookstore
- C. Evelyn Fox Keller, *A Feeling for the Organism: The Life and Work of Barbara McClintock*. In the bookstore.

All three are required.

### Topics

- Unit 1: Isaac Newton
- Unit 2: Louis Agassiz
- Unit 3: Charles Darwin
- Unit 4: Albert Einstein
- Unit 5: Barabara McClintock

**Reading Assignments:** I will assign each week’s reading in lecture, so if you miss one, be sure to check with me for details.