

Scientific Revolutions I  
The History of Science from Antiquity to the 1800s

Time and Location

Tuesday and Thursday, 12am – 2pm  
Sidney Smith Hall, Room 2102

Contact Information

Instructor: Cory Lewis  
Office Hours: Thursdays 3pm - 5pm, Victoria College, room 308  
Course e-mail: [hps210h1@utoronto.ca](mailto:hps210h1@utoronto.ca)  
Personal e-mail: [cory.lewis@utoronto.ca](mailto:cory.lewis@utoronto.ca)

Please use the course e-mail for all normal course business, like questions about marks, assignments, exams, etc. Assignments should also be submitted to the course e-mail.

Course Description

This course will survey the history of science from its beginnings until the end of the 18<sup>th</sup> century, when the scientific revolution was well underway. Its purpose is to give students as broad a view as possible of the long slow development that lead up to the explosive changes of the last 200 years. We follow the development of math, information technologies, and the practice of systematic natural observation, from clay tablets to the chemical revolution. This course is designed to be accessible to both humanities and science students.

Readings

The readings will consist of “The Dialogue of Civilizations in the Birth of Modern Science” by Arun Bala, available at the University of Toronto Bookstore, and a few supplementary articles, which will be available on the course blackboard.

Bala's book argues that our standard story about the origins of science is too narrowly focused on things that happened in Europe. Taking a step back and looking at the contributions of India, China and the Middle-East, reveals that the pre-history of science is a global history, not one that only took place on a single continent. Something genuinely special did happen in Europe during the scientific revolution, Bala argues, but this should not lead us to think that the scientific method is a specifically western invention. Instead, it is the product of blending together the contributions of all of the major world civilizations.

Supplementary reading:

Longino, Helen E. *Science as social knowledge: Values and objectivity in scientific inquiry*. Princeton University Press, 1990. Chapter 4, "Values and Objectivity" p. 62-82

Shapin, Steven. *The scientific revolution*. University of Chicago Press, 1996. Chapter 1, "What Was Known?" pp. 15-64

### Grades

Research Assignment	30%	(The late penalty is 5% per day)
Mid-Term	30%	
Exam	40%	

### Tutorials

Attending tutorials is not a course requirement. However, they will be offered for those who want them. Tutorials will offer a space for students to discuss the lectures, readings, and strategies for approaching the research assignment.

### Mid-Term and Exam Format

Both the mid-term and exam will primarily consist of multiple-choice and short-answer questions. Questions will be drawn from both the lectures and the readings.

### Research Assignment

The research assignment consists of choosing a Wikipedia page relevant to the history of science before 1800, and developing an improved version of it. It is recommended that students choose one of the less developed pages, so that there is more room for improvement. The completed assignment will consist of three documents:

- 1) A copy of the Wikipedia page as it currently exists. [Due May 27th]
- 2) A proposed revision of the page. The revision should add 500-1000 words, and make use of at least 5 new sources. Sources must be from peer-reviewed journals or scholarly books. [Due June 19th]
- 3) A document with block quotes from the sources, backing up the claims made in the revision. This document does not need to be pretty, nor any particular length, but it does need to prove that the sources say what you say that they say. [Due June 19th]

The revision proposals will be judged in terms of their content and style. The content should be informative and factual, with a minimum of personal opinion. The style should be professional, to the point, and accessible.

Students are asked not to modify the actual Wikipedia page, at least until the marked assignments are returned to them. Modifying Wikipedia is not a part of the assignment, and will not count for any marks. If students think their proposal constitutes a genuine improvement over the original page, modifying it after the assignment is over is entirely their own business.

All parts of the assignment should be e-mailed to the course e-mail:  
hps210h1@utoronto.ca

### Important Dates

May 13 – Classes Start

May 29 – Mid-Term

June 9 - Last day to drop courses from academic record and GPA.

June 19 – Classes End

June 23 – 27 – Final exams (schedule posted June 6<sup>th</sup>)

Lectures	Date	Readings & Assignments
1.1 Intro and Course Description	May 13	
1.2 Content Overview	May 13	
2.1 Pre-History to Babylonian Astronomy	May 15	Bala Ch. 1 & 2
2.2 Chinese Astronomy and Alchemy	May 15	
3.1 Ancient Greek Natural Philosophy	May 20	Bala Ch. 3 & 4
3.2 Alexandrian Astronomy & Medicine	May 20	Longino Ch. 4
4.1 Classical Indian Astronomy	May 22	Bala Ch. 5
4.2 Islamic Science	May 22	
5.1 Medieval European Science	May 27	Ch. 6
5.2 Medieval European Medicine	May 27	Assignment Part 1 Due
Mid-Term	May 29	
6.1 The Printing Press & Vesalius	June 3	Ch. 7 & 8
6.2 Copernicus	June 3	
7.1 Kepler & Tycho Brahe	June 5	Ch. 9
7.2 Descartes	June 5	Shapin Ch. 1
8.1 Galileo	June 10	Ch. 10 & 11
8.2 Early Modern European Alchemy	June 10	
9.1 Newton	June 12	Ch. 12
9.2 The Royal Society	June 12	
10.1 Lavoisier	June 17	Ch. 13
10.2 The Chemical Revolution	June 17	
11.1 Review	June 19	Ch. 14
11.2 Discussion	June 19	Completed Assignment Due