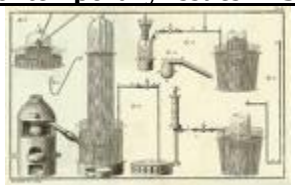
2018

HIS 34 History and Contemporary Issues in Science and Technology

William deJong-Lambert
CUNY Bronx Community College

HIS 34: History and Contemporary Issues in Science and Technology



Dr. William deJong-Lambert
Office Phone: 718-289-6098
E-mail Address: William.deJong-Lambert@bcc.cuny.edu
Office Hours: 307 Colston Hall—TBD

This class describes what for most of history was known as "natural philosophy"—i.e., the study of nature. Just as if one were to ask what music sounded like in ancient Rome, the Medieval Period, or 18th century China—and discover that it sounds nothing like what we think of as "music" today—the same is true of science. What will be of interest in this course will not be so much how people discovered what was "true," but rather the things that seemed obvious or logical at a given time, and the reasons these ideas were replaced with those that more closely approximate how we think about nature today. The point is that science—like every other aspect of human culture—is constantly changing, subject to the society and the individuals in which it is happening. It is these contexts which will be our focus.

This course will give you the opportunity to understand more about what science "is," beyond the way in which one usually encounters it, i.e., as a collection of facts and theories to learn and memorize. Here you will learn the messy, and often circuitous, process by which scientific theories develop, and the controversial ideas they sometimes inspire. We will also discuss current problems in science, particularly the under-representation of women and minority groups in the scientific community. As you will see, science consists of the contributions of many cultures—and this diversity is essential to understanding its impact upon our history.

We will start with the origins of science among the Babylonians, Egyptians and Greek. We will then look at the Roman contributions—particularly in terms of Roman technology—as well as the demise of the Classical World with the collapse of the Roman Empire. Next we will move on to the "Dark Ages" which, as you will see, were really not so "dark" after all. You will also appreciate the role of the Islamic world in preserving our Greek heritage and contributing to the Scientific Revolution, which in turn motivated the Enlightenment and subsequent political revolutions which established democracy in the modern world.

The second half of the class covers three Focus Topics: Darwinian Evolution, The Computing Revolution and the Rise of the Internet, and Climate Change.

.

Writing Intensive

Since this is a **Writing Intensive** (**WI**) course a large portion of your grade will be based upon a writing assignment. The format I have chosen is the ePortfolio, an online portfolio which you will be free to continue editing and using even after the class is over. The purpose of the writing assignments for the ePortfolio are to help you better understand course content while enhancing your critical thinking, writing and reading skills. You will be trained on how to construct an ePortfolio early in the semester.

ePortfolio:
You will be required to produce a brief biography on an important figure in the history of science—living or dead. You will need to let me know the person you are choosing to write about by the end of the third

week of class. I will ask you to not only recount the background and significant events in the life of the individual you have chosen, but also explain why you find them interesting.

Your ePortfolio will consist of two modules labeled Background and Significance. For each of these modules you will be required to produce a minimum of 900 words for the Background section, 300 for the Significance section and include at least three images (i.e., total of six) for each. The background section should include significant details such as when they were born, where, their education, friends, family, influences and how they entered upon a scientific career. In the Significance section you will describe their contribution(s) to science—what they did, why it was important, and why they are remembered today.

I have created an ePortfolio for this class where you can view an example of what I'm looking for. I will also be posting class lectures on the site.
https://bcc-cuny.digication.com/history_of_science/Welcome/published

Class Policies

Attendance:
Attending class and arriving on time is essential. While no one can force you to attend class, there is a clear link between attendance and GPA for students at BCC. In short—students with perfect attendance tend to get high grades—those who don't, do not. It's up to you.

Grading:
You will be graded on your performance on two out of three exams (I allow you to drop the lowest grade), two writing assignments, an ePortfolio on a topic of your choice which you will present in class at the end of the semester, as well as a final exam. I also give a lot of weight to your participation in classroom discussions, and will periodically give you discussion questions to answer on the readings. The purpose of these questions is not for you to give me "right answers," so much as to encourage you to think about what you are reading. Since this is a small class I expect you will be able to contribute your thoughts and ideas on a regular basis.
Exams: 20%
ePortfolio: 40%
Class Participation: 15%
Final: 25%

Readings: This is an Open Education Resource course so the majority of the readings I will assign are available for free online. I will also provide you with additional readings during the semester.

Tutoring Services:

History Department Tutoring: History is available each semester in Colston 341 on a walk-in basis. No appointment is necessary. While there is no specific tutor trained for this course, tutors can help you with in other ways such as with how to prepare for exams, writing essays etc. Tutoring usually runs from the third week of the semester to the last week of the semester and is available during day and evening hours. Check the exact schedule on the door of CO 341.

For additional writing help, the **Writing Center** in Sage Hall has day, evening and weekend hours. An excellent online resource is the Purdue University Online Writing Lab, http://owl.english.purdue.edu. It has tutorials on grammar and style, writing a thesis statement, organizing an essay, dealing with ESL issues, and more. (See the "Suggested Resources" box on the OWL home page.)

Plagiarism: You are learning, and it is very important that you always write in your own words. Copying the sentences from the textbook or another source may give you the correct answer to a question, but it is not the right answer for this class unless you say it in your own words. Plagiarism, which is presenting someone else's words as your own (like cutting and pasting from the internet into your paper), is a form of cheating. Cheating also includes copying what a classmate has written, using notes during an in-class exam (unless permitted), looking up answers on quizzes and tests electronically, and getting someone else to write your assignments for you. Bronx Community College has asked faculty who believe that a student may have cheated to report the situation to the BCC Academic Integrity Officer. For more information on CUNY's policies on academic dishonesty, see the BCC catalog, pp. 61-65, http://www.bcc.cuny.edu/College-Catalog/2012-2013/Academic_Policies_2012_2013_catalog.pdf.

Schedule of Readings

Topic	Open Education Resource Link
Origins of Science I: Aristotle and Science in Antiquity	https://www.ck12.org/search/?q=aristotle&referrer=top_nav&autoComplete=false https://www.oercommons.org/search?f.search=aristotle&f.general_subject=&f.sublevel=&f.alignment_standard= https://www.google.com/search?q=aristotle+site%3Asaylor.org&rlz=1C1GGRV_enUS753US753&oq=aristotle+site%3Asaylor.org&aqs=chrome..69i57.3278j0j4&sourceid=chrome&ie=UTF-8 https://www.saylor.org/site/wp-content/uploads/2012/10/ASTR101-Unit-3-Reading.pdf
Origins of Science II: The Periodic Table and the Atom	https://courses.lumenlearning.com/suny-hccc-worldhistory/chapter/scientific-advancements-in-the-classical-period/ https://www.google.com/search?q=%22periodic+table%22+site%3Alumenlearning.com&rlz=1C1GGRV_enUS753US753&oq=%22periodic+table%22+site%3Alumenlearning.com&aqs=chrome..69i57.8399j0j8&sourceid=chrome&ie=UTF-8 https://vimeo.com/82546282 https://www.oercommons.org/search?batch_size=20&sort_by=search&view_mode=summary&f.search=periodic+table https://www.oercommons.org/courses/history-of-the-atom/view https://www.ck12.org/search/?q=history%20of%20the%20atom&referrer=top_nav&autoComplete=false
Origins of Science III: Science in the Christian and the Islamic World	https://oyc.yale.edu/history/hist-210 https://courses.lumenlearning.com/astronomy/chapter/the-birth-of-modern-astronomy/ https://courses.lumenlearning.com/suny-hccc-worldhistory/chapter/intellectual-life/ https://courses.lumenlearning.com/suny-hccc-worldcivilization/chapter/the-islamic-golden-age/ https://legacy.saylor.org/astr101/Unit03/ https://www.nationalgeographic.com/archaeology-and-history/magazine/2016/11-12/muslim-medicine-scientific-discovery-islam/ http://www.mhs.ox.ac.uk/scienceislam_education/index.php
Origins of Science IV: Renaissance Natural Magic	https://en.wikibooks.org/wiki/European_History https://www.curriki.org/oer/Introduction-to-the-Scientific-Revolution-and-Astronomy/

Origins of Science V: Nicolas Copernicus, Galileo Galilei and the "paradigm shift" of the "scientific revolution"	https://www.oercommons.org/authoring/10307-banned-books-of-the-scientific-revolution/view http://www.oercommons.org/courses/vincenzo-galileo/view https://www.saylor.org/site/wp-content/uploads/2012/10/HIST201-8.1-TheScientificRevolution-FINAL1.pdf
Origins of Science VI: The Scientific Method	https://www.khanacademy.org/science/high-school-biology/hs-biology-foundations/hs-biology-and-the-scientific-method/a/the-science-of-biology https://www.ck12.org/search/?q=the%20scientific%20method&referrer=top_nav&autoComplete=false
Focus Topic I: Darwinian Evolution	https://www.oercommons.org/courses/darwin-for-a-day-2/view http://www.oercommons.org/courses/darwin-2/view
Focus Topic II: The Computing Revolution and the Rise of the Internet	https://archive.org// http://www.oercommons.org/courses/computer-histories-an-introductory-course-on-the-history-of-computing/view https://www.oercommons.org/courses/basic-computing-concepts-including-history/view
Focus Topic III: Climate Change	https://www.oercommons.org/courses/cool-cores-capture-climate-change