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American Public University System

The Ultimate Advantage is an Educated Mind

School of Arts and Humanities

HIST 586

History of Science

3 Credit Hours

8 Weeks

Graduate students are encouraged to take required or core courses prior to enrolling in the seminars, concentration courses or electives.

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Instructor Information

Instructor: Dr. Fiona Dave

Email: *Use the Messages Option*

Office Hours: Monday through Thursday 4:00-5:00 pm PST

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Course Description (Catalog)

This seminar explores recent historiographical approaches within the history of science. Students will read a wide variety of studies covering topics primarily from the 17th through the 21st centuries, to include the fields of physical sciences, natural history, and medicine. Emphasis is placed on deciphering various theoretical approaches; the pros and cons of different research questions, subjects, and sources of evidence; and what makes the history of science valuable to our understanding of global change.

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Course Scope

As noted science writer Carl Sagan once said, “Our ignorance of science threatens our economic well-being, our national security, and the democratic process. We must do better.” This graduate course in the History of Science gives the student the opportunity to study, analyze, and evaluate a wide range of science from the 17th century to the present, focusing especially on the methods of developing a history of science and the practice of historiography. The student will practice writing skills while learning many traditional views of science. The student’s understanding of and familiarity with many scientific principles, practices, and achievements will be revealed and tested in several discussions and writing assignments, including a demanding research paper and a Primary Research Essay.

The central reading for the course will be a textbook that students are required purchase: Peter J. Bowler and Iwan Rhys Morus’s, *Making Modern Science: A Historical Survey* (University of Chicago Press, 2005). We will read it through the duration of the class. The readings are supplemented each week with noted experts in the history of science to provide a wider perspective, and also to familiarize students with leading experts in the profession. All these materials are available as electronic resources from the APUS online library.

This course will study the development of modern science, focusing on Europe and the United States. It will not focus exclusively on discoveries and their discoverers. Instead, it will stress questions such as: What is science? How has science been practiced, and by whom? How are discoveries made and accepted? What is the nature of scientific progress? What is the relationship between science and society? What is the relationship between science and religion? What is the relationship between science and gender? Does culture play a role in scientific development? Topics will be drawn from the histories of physics, chemistry, biology, geology, medicine, cosmology, ecology, genetics, and the human sciences.

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Course Objectives

Upon completion of History Science students will be able to:

1. Assess the meanings, methods, and objectives of the history of science (evaluation)
2. Develop an original interpretation about history and science (synthesis)
3. Appraise the difference between primary and secondary sources (evaluation)

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4. Critique the work of other students in a professional manner and respond positively to the critiques of other students (evaluation)
5. Analyze the profession of the history of science and why science is important to society. (analysis)

Here are the weekly learning objectives:

1. Evaluate the scientific achievements in the 17th century and the possibility of a scientific “revolution.” (evaluation)
2. Analyze the “Chemical Revolution” and its relationship to the evolution of science in the 18th century. (analysis)
3. Appraise the importance of the conservation of energy and the age of the earth in the history of science. (evaluation)
4. Explain the cultural and scientific significance of the work of Charles Darwin. (comprehension)
5. Interpret the important developments that have taken place in the “new biology.” (comprehension)
6. Judge the gender restrictions in science and current and future opportunities for change. (evaluation)
7. Evaluate the emergence of environmentalism and the awareness of the importance of the ecology of the planet. (evaluation)
8. Critique some of the key themes in the history of medicine. (evaluation)
9. Examine how science has changed our understanding of humankind from the micro level of genetics, to the macro level of human behavior. (analysis)
10. Interpret the changing relationship between science and religion. (comprehension)
11. Evaluate the transformation in physics in the 20th century and appraise its significance. (evaluation)
12. Deconstruct how science has impacted the nature of war and our global security. (analysis)
13. Examine the main transformation in science after the Cold War and appraise the historiography of contemporary science. (analysis)
14. Analyze our changing cosmological understanding and our place in the universe. (analysis)
15. Examine the relationship between science and technology. (analysis)

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Course Delivery Method

This course delivered via distance learning will enable students to complete academic work in a flexible manner, completely online. Course materials and access to an online learning management system will be made available to each student. Online assignments include discussion Forum questions accomplished in groups through a threaded forum, examination, and individual assignments submitted for review by the Faculty Member.

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Course Materials

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Required Textbook

Bowler, Peter J., and Iwan Rhys Morus. *Making Modern Science: A Historical Survey*. Chicago: University of Chicago Press, 2005. (Note: This is the only text that is NOT available in the APUS Online Library and students are required to have this purchased and on hand by the first day of class.)

Optional Resources (Recommended)

- Marius, Richard, and Melvin E. Page. *A Short Guide to Writing About History*. Boston: Pearson, 2012.
- *The Chicago Manual of Style*, 17th ed. Chicago: University of Chicago Press, 2017.
- Turabian, Kate L. *A Manual for Writers of Research Papers, Theses, and Dissertations: Chicago Style for Students and Researchers*. 9th ed. Chicago: University of Chicago Press, 2018. *Purchase is highly recommended.*
- Turabian Citation Guide Online
http://www.press.uchicago.edu/books/turabian/turabian_citationguide.html

IMPORTANT NOTE: The Department of History and Military History requires conformity with the traditional University of Chicago Style Manual and its Turabian offshoot. Citations will follow traditional endnote or footnote attribution. Do not use parenthetical (MLA) variation.

Copyright/Fair Use Notice: Electronic readings may be provided by way of licensed materials in the Online Library, but also in keeping with Fair Use exemptions for educational purposes under U.S. Copyright Law.

Websites: (See Course Outline)

In addition to the required course texts public domain Websites are useful. Please abide by the university's academic honesty policy when using Internet sources as well. Note web site addresses are subject to change.

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Evaluation Procedures

This course requires thoughtful reading and analysis. The discussion, assignments, and research paper are designed to allow you to demonstrate a thorough comprehension of the concepts introduced in the readings. Your perception of the issues introduced in these readings will be shaped by your worldview and experience. Feel free to report your views but do so in a considerate and thoughtful manner, and they must be grounded in scholarly evidence. Since this is a graduate-level coursework, do not merely regurgitate information from the reading assignments. You are expected to analyze, critique, and agree, or disagree, with the authors. My expectation is that your work is original. Academic integrity is essential. Scrupulously acknowledge the source of direct quotes, paraphrased passages, and another's ideas.

There are many ways to measure student performance. The following guidelines apply:

- Faculty grade writing assignments using the APUS writing rubrics appropriate for the level of the course. Rubrics ensure that grading is consistent across the institution, and that all key areas of the graded work receive attention. It is also advisable to share the rubric with students, so that they are aware of the instructor's expectations. Rubrics are the university approved basis for grading written assignments. The rubrics for undergraduate and graduate writing assignments may be found at [Writing Rubrics](#).
- For written assignments, students should upload assignments by selecting the Assignments link on the left hand side of the classroom page.
- For discussions select the Forums link on the left hand side of the classroom page. The Forums should not be used for administrative communications.

Forum Assignments:40% of your grade (8 Forum postings, 50 points each)

Respond to the Forum question(s) of the week in a main post that is at *minimum* 250 words and at *maximum* 500 words. Students should not provide just a summary of the readings but support an interpretation or argument. However, this is not a mere opinion piece; you must use the reading assignments, video assignments, and any outside research you feel is appropriate. Cite relevant examples from the week's reading, and use the opportunity to critique the authors' work in a positive or negative way by citing a key phrase, analyzing intent, sources, structure, or thesis. Along with citations from our readings for the week, I will expect to see outside research from the APUS Library. To meet the minimum research requirements for each week's main post, include AT LEAST ONE scholarly source from the APUS Library in addition to citations from our weekly readings. A scholarly source is a peer reviewed article or a book from a well-regarded trade or university press. A web site does not count.

To meet the minimum participation requirements for each Forum assignment, respond to AT LEAST TWO other student postings, plus any follow-up questions I ask. As for the follow-up questions, I try to comment on everyone who posts on time during a week. If I do not, or if you post late, this does not mean you are exempt from answering an additional question from me. In that case simply select a follow-up question I asked another student and respond. This will enable you to meet the minimum discussion requirements for the week. The introduction forum is the only discussion where a response to an additional follow-up question from me is not required.

Discussion is a very important part of the class. It is a way to interact and learn from each other as well as demonstrate our understanding of course content. I expect all posts to be thoughtful (making good, reasoned, well-written points), thorough (accurate and complete in its response), and interesting (a response that is on point, and relevant to the question asked). When responding to other students it is not enough to simply state "I agree." Respond to their post in a way that moves the discussion forward, and demonstrates your knowledge or unique perspective on the topic. The *minimum* length for a quality response to another student should be 100 words, with a *maximum* being 250 words.

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SEE FORUM RUBRIC IN COURSE RESOURCES.

INITIAL POST IS DUE ON THURSDAY, RESPONSES ARE DUE BY SUNDAY. ALL DEADLINES ARE 11:59 PM EASTERN TIME ON THE DAY DUE.

Research Paper Proposal:5% of your grade

In Week 4 you will submit a proposal (minimum 250 words and maximum 500 words exclusive of source list) for your final research paper. This should include a general overview of your topic, thesis, and relationship to our readings. In addition, and not part of the word count, should be a complete source list (primary and secondary). By the end of the day on Thursday of Week 4 you will post your proposal to the Forum, and by the end of the day on Sunday of Week 4 you will respond to at least two other student proposals. Share ideas on their topic, suggest secondary or primary research that might assist them, or discuss how their topic might relate to our course readings. This should be at least 100 words in length.

You MUST post your Proposal to the Assignments list as a Word Document to receive a grade. If you only post to the Forum then you will get a zero for the week.

Primary Research Essay:5% of your grade

Strong historical research requires an effective balance between primary and secondary resources and the goal of this essay is for you to practice this vital skill. You may associate the topic for this assignment with your final research paper, though you cannot use the same text that you write for this assignment in your final paper.

In general terms this assignment is designed for you to compare and contrast a historical perspective from a secondary source (our readings in class) with a primary source. Once you have identified a topic from our readings and found a corresponding primary source answer the following questions: What new insight does the primary source provide that did not appear in the secondary source? Why are primary sources important? What are some dangers in using primary sources? The paper should be in Word format, have a minimum of 500 words, and include footnotes and a bibliography.

An example of what I am looking for is as follows. One of the best digitized collections is *The Bulletin of Atomic Scientists*. It is described like this: "The *Bulletin of the Atomic Scientists* is the premier public resource on scientific and technological developments that impact global security. Founded by Manhattan Project Scientists, the Bulletin's iconic 'Doomsday Clock' stimulates solutions for a safer world." In Week 12 you will be reading about the relationship between science and war, and particularly the history of the atomic bomb. One article is on Vannevar Bush, which is a secondary source published in the *The Bulletin of Atomic Scientists* in 1992. You might want to compare this reading with a primary source from Bush in *The Bulletin of Atomic Scientists* in 1951 where the journal reprinted one of his speeches. ([You can find the full text of this article here](#)). Again, the goal is to find a single topic from our readings and compare and contrast it to a specific primary article or document.

You MUST post your Primary Research Essay to the Assignments list as a Word Document to receive a grade.

Mid-Term Exam: 10% of your grade

In Week 5 you will take an untimed, 20 question multiple choice test that covers the assigned books and articles(not the videos) through the first half of the course (Weeks 1 through 4). This is an open book test that concentrates on the big ideas, and not the trivial aspects of the readings. The intent of the exam is to provide you questions on what I consider to be the most important take-away concepts from our readings. Though the syllabus suggests you take this test in Week 5, and I recommend that this is the best time for you to take it, you may actually do it any time during the course. This exam may be taken only one time, so make sure you take it at a time and place where you will not be interrupted.

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WARNING: After you take the exam, there are two Submit buttons. After first Submit there is a second one that asks you to confirm the submission. It is the second click that completes the process and sends the test to the server. If you do not do this, then unfortunately you may have to retake the exam.

Research Paper:40% of your grade

Each student is required to pursue an independent research project during the course and will prepare a research paper that is to be of high quality in terms of research and scholarly analysis. Select a topic related to a theme that we study in this class and analyze it in its historical context. You should attempt to associate the subject of your paper to one of more of the themes and issues that are addressed during this course of study. You should rely on and research primary resources for the paper, as well as demonstrate a thorough coverage of the relevant secondary literature.

The research paper should be a minimum of 3750 words exclusive of front and back matter (the paper in total should not exceed 5000 words). It should include a title page, reference citations (from multiple sources), and a bibliography. Footnotes are required for the reference citations, and all sources, as well as the corresponding bibliography, must conform to Turabian's *Manual for Writers of Term Papers* style for notes and references. Substantial research other than the required course readings is necessary. The bibliography and reference citations are not to be included in the word count. NOTE: Internet sources (web sites) should be rarely used, if ever. Exceptions are scholarly websites and documents available through the APUS Online Library (*Wikipedia* is not considered a valid academic source).

I will submit all of the final papers into TurnItIn which is a plagiarism checker. If I find evidence of plagiarism, I will give you a zero for the paper. To ensure this does not happen make sure you familiarize yourself with the meanings of plagiarism (see the policies section of this syllabus), and take careful steps in your note taking process to avoid a potential for a mistaken plagiarism. This review will serve as an important check for you.

The research paper is due on the final day of class. Late papers will not be accepted without an official extension.

You MUST post your Research Paper to the Assignments list in the appropriate section as a Word Document to receive a grade.

Overview of Course Assignments

Grade Instruments	Points	Percentage
Week 1: Forum #1	50	5%
Week 2: Forum #2	50	5%
Week 3: Forum #3	50	5%
Week 4: Forum #4	50	5%
Week 4: Research Paper Proposal	50	5%
Week 5: Forum #5	50	5%
Week 5: Mid-Term Exam	100	10%
Week 6: Forum #6	50	5%
Week 6: Primary Research Essay	50	5%
Week 7: Forum #7	50	5%

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Week 8: Forum #8	50	5%
Week 8: Research Paper	400	40%
Total	1000	100%

Please see the [Student Handbook](#) to reference the University's grading scale

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Course Outline

Week & Topics	Learning Objectives	Readings and Videos	Assignments
Week 1: The Scientific Revolution	<p>Analyze the profession of the history of science and why science is important to society. (analysis)</p> <p>Evaluate the scientific achievements in the 17th century and the possibility of a scientific “revolution.” (evaluation)</p>	<p>Readings: Bowler and Morus, <i>Making Modern Science</i>, (Chapters 1, 2, and 14). Cohen, I. Bernard. <i>Revolution in Science</i>. Cambridge, Mass: Belknap Press of Harvard University Press, 1985. (“Introduction,” pages 1-25). Please click on this link to see important classroom policies (netiquette guide and late policies),</p> <p>Videos: Carl Sagan, Episode 1 of <i>Cosmos</i> (1980), “Shores of the Cosmic Ocean.” Newton’s Dark Secrets</p>	<p>Forum #1: In a minimum of 350 words, explain your academic and professional background and how this course fits into your objectives. Be sure to include what APUS program you are in and what APUS or other graduate courses you have taken.</p> <p>Share some thoughts on your plans for your MA thesis project. To learn more about this watch “How to Survive a Master’s Thesis in History.” http://vimeo.com/mdbowles/thesisurvival. Here the three main building blocks required to effectively craft and survive a Master’s thesis project in history are discussed: a unique argument, historiographical context, and primary sources.</p> <p>Finally, attest to the AMU/APU Honor Code in the Introduction Forum by reading and replying with your typed signature.</p> <p>Post your initial response to the Forum by THURSDAY. Respond to at least FOUR other students by SUNDAY of Week 1.</p>

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Week & Topics	Learning Objectives	Readings and Videos	Assignments
<p>Week 2: The Chemical Revolution</p>	<p>Analyze the “Chemical Revolution” and its relationship to the evolution of science in the 18th century. (analysis)</p>	<p>Readings: Bowler and Morus, <i>Making Modern Science</i>, (Chapters 3, 4, and 5).</p> <p>Terrall, Mary, “Public Science in the Enlightenment,” <i>Modern Intellectual History</i> 2, 2 (2005): 265-276.</p> <p>Video (select one): Science writer George Johnson, author of the Ten Most Beautiful Experiments (2008), talks about Antoine Lavoisier.</p> <p>"The Society for Useful Knowledge: How Benjamin Franklin and Friends Brought Enlightenment to America" <i>Jonathan Lyons</i></p> <p>"The Invention of Air: A Story of Science, Faith, Revolution, and the Birth of America" <i>Steven Johnson</i></p>	<p>Forum #2: What are the “science wars”? Which side do you agree with?</p> <p>Was the “Scientific Revolution” in the 17th century a revolution?</p> <p>What was Newton’s historical significance to this era? Was his intellect the pinnacle or just another shaper of the “Scientific Revolution”?</p> <p>Post your initial discussion response to the discussion board by THURSDAY. Respond to at least two other students and any follow-up questions by SUNDAY of Week 2.</p>

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Week & Topics	Learning Objectives	Readings and Videos	Assignments
<p>Week 3: The Biological Revolution</p>	<p>Appraise the importance of the conservation of energy and the age of the earth in the history of science. (evaluation)</p> <p>Explain the cultural and scientific significance of the work of Charles Darwin. (comprehension)</p> <p>Interpret the important developments that have taken place in the “new biology.” (comprehension)</p>	<p>Readings:</p> <p>Bowler and Morus, <i>Making Modern Science</i>, (Chapters 6, 7, and 18).</p> <p>Ruse, Michael, “The Darwin industry: A guide,” <i>Victorian Studies</i> 39, no. 2 (January 1, 1996): 217-235.</p> <p>Mayr, Ernst, “Biology in the twenty-first century,” <i>Bioscience</i> 50, no. 10 (October 1, 2000): 895-897.</p> <p>Video:</p> <p>Michael Ruse on Darwin</p> <p>Charles Darwin Geologist</p>	<p>Forum #3: Discuss the relationship between science in the 18th century and the Enlightenment. What was Lavoisier’s contribution to chemistry? Can you properly understand the science of this era without an understanding of the philosophical context?</p> <p>The second part of this question is to select an individual from chapters 4 or 5 in Bowler and Morus who you found the most interesting and significant in the history of science. Explain why you reached this conclusion.</p> <p>Post your initial discussion response to the discussion board by THURSDAY. Complete the remainder of your posts by SUNDAY of Week 3.</p>

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<p>Week 4: Gender and Environmentalism</p>	<p>Judge the gender restrictions in science and current and future opportunities for change. (evaluation)</p> <p>Evaluate the emergence of environmentalism and the awareness of the importance of the ecology of the planet. (evaluation)</p>	<p>Readings:</p> <p>Bowler and Morus, <i>Making Modern Science</i>, (Chapters 9, 10, and 21).</p> <p>Massimo Mazzotti "Newton for ladies: gentility, gender and radical culture." <i>British Journal for the History of Science</i> 37, no. 133 (June 1, 2004): 119-146.</p> <p>Kohlstedt, Sally Gregory, "Sustaining Gains: Reflections on Women in Science and Technology in 20th-Century United States," <i>NWSA Journal</i> 16, no. 1 (April 1, 2004): 1-26.</p> <p>Kevles, Daniel J., "The contested Earth: science, equity & the environment" <i>Daedalus</i> 137, no. 2 (April 1, 2008): 80-95.</p> <p>Videos:</p> <p>The Madame Curie Complex: The Hidden History of Women in Science</p> <p><i>Julie Des Jardins</i></p> <p>"On a Farther Shore: The Life and Legacy of Rachel Carson"</p> <p><i>William Souder</i></p>	<p>Forum #4: Submit the Proposal for your Research Paper by Thursday of Week 4 as an Assignment and also to the Proposal Forum. By Sunday comment on other student proposals.</p> <p>You MUST post your Proposal to the Assignments list as a Word Document to receive a grade. If you only post to the Forum then you will get a zero for the week.</p>
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Week & Topics	Learning Objectives	Readings and Videos	Assignments
		"The Social Conquest of Earth" <i>E.O. Wilson</i>	

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Week & Topics	Learning Objectives	Readings and Videos	Assignments
<p>Week 5: Medicine, Genetics, and the Human Sciences</p>	<p>Critique some of the key themes in the history of medicine. (evaluation)</p> <p>Examine how science has changed our understanding of humankind from the micro level of genetics, to the macro level of human behavior. (analysis)</p>	<p>Readings:</p> <p>Bowler and Morus, <i>Making Modern Science</i>, (Chapters 8, 13, and 19).</p> <p>Rosenberg, Charles E., "Erwin H. Ackerknecht, Social Medicine, and the History of Medicine" <i>Bulletin of the History of Medicine</i> 81, no. 3 (October 1, 2007): 511-532.</p> <p>Video (select one):</p> <p>Pox: An American History</p> <p>"In the Kingdom of the Sick: A Social History of Chronic Illness in America"</p> <p>The Emperor of All Maladies: A Biography of Cancer</p> <p>Breakthrough: Elizabeth Hughes, the Discovery of Insulin, and the Making of a Medical Miracle</p> <p>"An Anatomy of Addiction: Sigmund Freud, William Halsted, and the Miracle Drug Cocaine"</p>	<p>Forum #5: Two weeks ago we focused on Darwin and his theories. What is it about Darwin and that has made him and it still so culturally relevant today? Has any other scientist achieved this?</p> <p>The second part of this forum relates to last week's topic of gender and science. Discuss some of the conflicts and controversies between science and gender. Why has the historical participation by women in science "been persistent but with inconsistent patterns"?</p> <p>Post your initial discussion response to the discussion board by THURSDAY. Complete the remainder of your posts by SUNDAY of Week 5.</p> <p>Mid-Term Exam covering the readings from Weeks 1 through 4.</p>

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Week & Topics	Learning Objectives	Readings and Videos	Assignments
<p>Week 6: Science and Religion</p>	<p>Interpret the changing relationship between science and religion. (comprehension)</p>	<p>Readings: Bowler and Morus, <i>Making Modern Science</i>, (Chapter 15). Heilbron, J. L., "The sun in the church". Video (select one): "War of the Worldviews: Science vs. Spirituality" "The Science Delusion: Asking the Big Questions in a Culture of Easy Answers" Einstein's God: Conversations About Science and the Human Spirit Monkey Girl: Evolution, Education, Religion, and the Battle for America's Soul Chance or Purpose: Creation, Evolution, and a Rational Faith How God Changes Your Brain: Breakthrough Findings from a Leading Neuroscientist</p>	<p>Forum #6: What is the relationship between science and religion? How has it changed over time?</p> <p>Which video did you select this week? What was the most significant argument made by the speaker? Did you agree or disagree?</p> <p><i>NOTE: While I expect a healthy debate we must always respect each others' religious beliefs or non-beliefs in our discussions.</i></p> <p>Post your initial discussion response to the discussion board by THURSDAY. Complete the remainder of your posts by SUNDAY of Week 6.</p> <p>Submit your Primary Research Essay by Sunday of Week 6 as an Assignment.</p>

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<p>Week 7: Physics and Warfare</p>	<p>Evaluate the transformation in physics in the 20th century and appraise its significance. (evaluation)</p> <p>Deconstruct how science has impacted the nature of war and our global security. (analysis)</p> <p>Examine the main transformation in science after the Cold War and appraise the historiography of contemporary science. (analysis)</p>	<p>Readings:</p> <p>Bowler and Morus, <i>Making Modern Science</i>, (Chapters 11 and 20).</p> <p>Holton, Gerald, "Einstein and the cultural roots of modern science".</p> <p>Cyrus C.M. Mody, "How I Learned to Stop Worrying and Love the Bomb".</p> <p>Zachery, G. Pascal, "Vannevar Bush Backs the Bomb".</p> <p>Isaacson, Walter, "Einstein and the Bomb".</p> <p>Sagan, Carl, "Between Enemies".</p> <p>Kevles, Daniel J., "Science in transition: Searching for a role in the post-Cold War era".</p> <p>Video (select one):</p> <p>"Blackett's War "</p> <p>"Red Cloud at Dawn"</p> <p>"Tuxedo Park"</p> <p>The Twilight of the Bombs</p>	<p>Forum #7: The "bomb" plays a central role in almost every reading this week. How did its development impact individuals like Bush, Teller, and Einstein personally? How did it change the profession of science and the relationship of scientists to the military and the public?</p> <p>The second part of this question is to discuss the history of physics. Which physicist had the greatest impact in shaping the 20th century and why?</p> <p>Post your initial discussion response to the Forum by THURSDAY. Complete the remainder of your posts by SUNDAY of Week 7.</p>
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Week & Topics	Learning Objectives	Readings and Videos	Assignments
<p>Week 8: Cosmology and Technology</p>	<p>Analyze our changing cosmological understanding and our place in the universe. (analysis)</p> <p>Evaluate the relationship between science and technology. (evaluation)</p>	<p>Readings:</p> <p>Bowler and Morus, <i>Making Modern Science</i>, (Chapters 12, 16, 17 and the Epilogue).</p> <p>Kragh, Helge, <i>Conceptions of Cosmos: From Myths to the Accelerating Universe: A History of Cosmology.</i> Oxford: Oxford University Press, 2007. ("Introduction" Pages 1-5).</p> <p>Videos:</p> <p>Life, Writings and Scientific Work of Carl Sagan</p>	<p>Forum #8: Now that we are at the end of the readings in this course, which area of science was the most “revolutionary” and why?</p> <p>The second part of this question is has there been a revolution in cosmology? Bowler and Morus state: “If there was a cosmological revolution at all, we would need to understand it as a revolution in the culture of cosmology as much as a revolution in its content.” What do they mean by this?</p> <p>Respond to other students and any follow-up questions by me by SUNDAY of Week 8.</p> <hr/> <p>Research Paper Due.</p> <p>Submit by SUNDAY of Week 8.</p>

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Policies

Please see the [Student Handbook](#) to reference all University policies. Quick links to frequently asked question about policies are listed below.

[Drop/Withdrawal Policy](#)

[Plagiarism Policy](#)

[Extension Process and Policy](#)

[Disability Accommodations](#)

Writing Expectations

Assignments completed in a narrative essay or composition format must follow the accepted guidelines of the American historical profession, which is the *Chicago Manual of Style*. This course will require students to use the citation and reference style established by Kate Turabian in *A Manual for Writers of Term Papers, Theses, and Dissertations*, 6th ed. (Chicago, IL: University of Chicago Press, 1996), which is the most readily available distillation of the *Chicago Manual*. See [Chicago Style Manual](#)

The *Chicago Style Manual* for book-length works and its *Turabian* offshoot for research papers have long been the standard across all fields of study, as well as much of the publishing industry. These texts cover the layout and production gamut--including rules for chapter headings and subheadings, abbreviations, alphabetizing non-English names, and table design/designation.

1. Front matter--e.g., [title page](#), copyright statement, dedication, table of contents, lists of illustrations or tables, acknowledgements, [abstract](#).
2. Narrative with [scholarly attributions](#).
3. Back matter--[bibliography](#), appendices.

Citation and Reference Style

Students will follow the Turabian or Chicago Manual of Style as the sole citation and reference style used in written work submitted as part of coursework to the University.

History papers are distinguished by standardized notational schema. These display the primary and secondary sources being quoted or used in the construction. Your professors will certainly call for footnotes or endnotes, but also may request a formal bibliography:

[Footnotes](#), the primary focus in Turabian, are used to indicate the source of a quotation, paraphrase, or resources--as well as to add explanations or digressions outside the flow of the main narrative.

[Bibliography](#) is a device at the end of the paper, which highlights the materials cited as a separate, alphabetized list in addition to the endnotes or footnotes.

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Turabian and the *Chicago Manual* use sequential Arabic numbers. The numbers are normally collective and at the end of quotations, paraphrased sentences, or paragraphs for collected references. Note numbers:

- o May be in-line, but preferably set in raised [superscript](#).¹
- o Should come at the end of the paragraph and collectively account for the resources used. Do not insert for each sentence. The exception is if a short quotation is used within a paragraph. Then cite as appropriate for the information preceding the quotation, the quotation itself (after commas, quotations marks, periods, or other final diacritics), and at the end of the paragraph if needed for subsequent information.
- o Must follow one another in numerical order, beginning with 1 and running continuously throughout the paper.

For a full explanation go to: <http://www.apus.edu/Online-Library/tutorials/chicago.htm#notation>

Late Assignments

Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals, I understand you must manage competing demands on your time. Should you need additional time to complete an assignment, please contact me before the due date so we can discuss the situation and determine an acceptable resolution.

Work posted or submitted after the assignment due date will be reduced by 10% of the potential total score possible for each day late up to a total of five days, including forum posts/replies, quizzes, and assignments. Beginning on the sixth day late through the end of the course, late work, including forum posts/replies, quizzes, and assignments, will be accepted with a grade reduction of 50% of the potential total score earned.

Netiquette

Online universities promote the advance of knowledge through positive and constructive debate--both inside and outside the classroom. Discussions on the Internet, however, can occasionally degenerate into needless insults and "flaming." Such activity and the loss of good manners are not acceptable in a university setting--basic academic rules of good behavior and proper "Netiquette" must persist. Remember that you are in a place for the fun and excitement of learning that does not include descent to personal attacks, or student attempts to stifle the discussion of others.

- **Technology Limitations:** While you should feel free to explore the full-range of creative composition in your formal papers, keep e-mail layouts simple. The Educator classroom may not fully support MIME or HTML encoded messages, which means that bold face, italics, underlining, and a variety of color-coding or other visual effects will not translate in your e-mail messages.
- **Humor Note:** Despite the best of intentions, jokes and--especially--satire can easily get lost or taken seriously. If you feel the need for humor, you may wish to add "emoticons" to help alert your readers: ;-), :), ☺

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Disclaimer Statement

Course content may vary from the outline to meet the needs of this particular group.

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Plagiarism and Turnitin.com

It is very important for all students to thoroughly understand plagiarism (both intentional and unintentional). As a result all submissions made to the Assignment folder are automatically sent to Turnitin, which is a plagiarism checker. Any assignment or discussion board post which I find to be plagiarized will be given 0 points and the infraction will be reported to the University. Please familiarize yourself with all of the following.

All students should completely understand the APUS plagiarism policy at:
<http://www.apus.edu/z/faculty/policies/plagiarism/index.htm>

What is Turnitin and how do you use it? Please read this for the answer:
<http://apus.libanswers.com/a.php?qid=5327>

Need help reading the Turnitin report? Visit this link: <http://apus.libanswers.com/a.php?qid=154741>

Do you have a question about plagiarism and what it means? Visit this link:
<http://apus.libanswers.com/a.php?qid=12586>

If you would like to check your papers before you submit it (which I recommend) try these free plagiarism-detection sites:

- [DupliChecker](#)
- [Grammarly](#)
- [Plagiarism Checker](#)
- [Plagiarisma](#)

You can also explore these sites:

- [Plagiarism Prevention Tips](#)
- [Citing & Style Guides](#)
- [College Research Writing Tips](#)
- [Writing Tutors](#)

Online Library

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The Online Library is available to enrolled students and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search engines on the open Web. In addition, the Online Library provides access to special learning resources, which the University has contracted to assist with your studies. Questions can be directed to librarian@apus.edu.

- **Inter Library Loans:** The University maintains a special library with a limited number of supporting volumes, collection of our professors' publication, and services to search and borrow research books and articles from other libraries.
- **Electronic Books:** You can use the online library to uncover and download over 50,000 titles, which have been scanned and made available in electronic format.
- **Electronic Journals:** The University provides access to over 12,000 journals, which are available in electronic form and only through limited subscription services.
- **Smarthinking:** Students have access to ten free hours of tutoring service per year through [Smarthinking](#). Tutoring is available in the following subjects: math (basic math through advanced calculus), science (biology, chemistry, and physics), accounting, statistics, economics, Spanish, writing, grammar, and more. Additional information is located in the Online Library. From the Online Library home page, click on either the "Writing Center" or "Tutoring Center" and then click "Smarthinking." All login information is available.

Request a Library Guide for your course (<http://apus.libguides.com/index.php>)

The AMU/APU Library Guides provide access to collections of trusted sites on the Open Web and licensed resources on the Deep Web. These are specially tailored for academic research at APUS:

- Program Portals contain topical and methodological resources to help launch general research in the degree program. To locate, search by department name or navigate by school.
- Course Lib-Guides narrow the focus to relevant resources for the corresponding course. To locate, search by class code (e.g., HIST500) or class name.

If a guide you need isn't available yet, let us know by emailing the APUS Library: librarian@apus.edu

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