

Course Syllabus: History 215: Introduction to the History of Science
(Synchronous Tuesday meetings, 8:00 to 9:15. Thursdays Asynchronous. See course outline for further explanation of meeting-time responsibilities.)

Professor: Dr. Brent Ruswick (he/him/his, “Dr.” or “Prof.”)

Office: Room 718, Wayne Hall

Office Hours: (Zoom-based office hours held 3 days per week for a total of 5 hours at a dedicated Zoom link, all To Be Announced.)

Office Phone: 610-436-2248 (leaving a message is not a reliable form of communication)

Email: bruswick@wcupa.edu – most reliable way to reach me.

In an effort to model a healthier work-life balance, I mostly check email only during normal work-week hours on Monday-Friday, and check once or twice a day on weekends. Send me a (friendly!) nudge if you have not received a reply within 24 hours. Email checks will be more frequent during high-demand times like the days leading up to major due-dates.

Slack: Students interested in doing so may collaborate and communicate with each other and their instructor at a dedicated group in the Slack app, (To Be Announced). Remember that this is a professional space with the same professional classroom conduct expectations as our class. This is an optional additional way to support your networking with your peers. It is not required for success in the class.

Required Materials:

- *Galileo Goes to Jail and Other Myths About Science and Religion* ed. Ronald L. Numbers
- David C. Lindberg, *The Beginnings of Western Science* 2nd edition. (First edition works well, too, though all page-references in class will presume you are using the second edition.)
- Course Reader – available as .pdf files through D2L

Recommended Materials

- Connor, Clifford *A People’s History of Science: Miners, Midwives, and “Low Mechanics”*
- Jim Cullen, *Essaying the Past: How to Read, Write, and Think about History*

This course meets the Humanities distributive requirement for general education at West Chester University.

Course Description

Welcome to History 215, an advanced introduction to the history of science discipline. In most respects, the history of science is similar to any other specialty within the field of history – like the history of religion, or labor, or military history, and so forth. We use the same historical methods and analytical skills to ask questions such as:

- How and why have humans attempted to learn about the natural world, attempted to do science? What has counted as being part of the natural world?
- How have discoveries in science and medicine changed our social, cultural, and religious values?
- How have our social, cultural, and religious values changed our study of science and medicine?
- How and why do the answers to these questions vary across time and location?

People unfamiliar with the history of science often assume that this topic amounts to chronicling the history of isolated geniuses discovering the hidden truths of nature. Far from it! In fact, we see that the great discoveries of nature:

1. Often come from people that we would not recognize as “scientists”
2. Often come packaged inside of a larger body of work that would not be recognized as scientific, today
3. Always are shaped by the same messy historical factors that shape every other human endeavor: factors like race, class, gender, religious and philosophical beliefs, national setting, psychological makeup, and so forth

We’re going to stretch this course as far as possible: from the ancient Greeks to the present. Throughout the course, we will consider some larger, over-arching themes including:

- Changes in boundaries that define “Science”
- Changes in who and what is recognized as legitimate sources of knowledge about nature, how science goes from being contested to being settled
- the relationship between scientific knowledge and social order
- the growth of scientific institutions

- the historical factors that account for the transmission and popularization of scientific knowledge
- the significance of race, class, gender, religion, and other factors upon the construction and reception of scientific ideas.

Assessment and Grading:

Your final grade will be out of 400 points, the sum of the following components:

- Several formally structured, in-class group discussions, worth a total of 100 points
 - These days are graded one-half on your contribution in class that day, and one-half on the sum of your contributions in class in the days leading up to the discussion. You will have a chance to drop lower scores.
- *2 Take-home synthetic written essays, worth a total of 200 points*
 - For each of these essays, I will ask you to provide an outline (15 points) that you will revise into the finished essay (85 points). There will be opportunities to revise and improve in light of feedback, but they are limited and well-regulated.
- *4 “Making Thinking Visible” projects worth a total of 100 points*
 - Here, too, there will be limited and well-regulated opportunities to improve one of the projects in light of feedback.

UNEXCUSED LATE WORK: Work turned in late and unexcused will be accepted as valuable demonstrations of learning. That work will, however, not receive a grade any higher than the LOWEST grade earned by a student who submitted that assignment on time.

EXCUSED LATE WORK: In addition to adhering to the WCU **Excused Absences Policy for University-Sanctioned Events** (referenced in detail, later), I personally follow the following set of guidelines for deciding if I can excuse late work. As a general rule, I will excuse late work in situations that

- A. are beyond a student’s control
- B. creates a short-term problem that immediately interferes with the physical ability to complete and/or submit the work
- C. has interfered with the student’s ability to put their best work forward
- D. is asked for in advance, unless the event makes it physically impossible to communicate the request in advance.

Note the clarity in the Grading and Assessment above and below.

Grade Tracker

Making Thinking Visible

1 st “Making Thinking Visible” – Due Feb. 19	/25
2 nd “Making Thinking Visible” – Due March 22	/25
3 rd “Making Thinking Visible” – Due April 16	/25
4 th “Making Thinking Visible” – Due May 7	/25

Major Essays

Midterm Outline – Due Feb. 26th	/15
Midterm Essay – Due March 12th	/85
Final Outline – Due April 30th	/15
Final Essay - Due at scheduled Final Exam time	/85

Course Contributions

/100

Extra Credit

/0

Total

/400

Letter Grade	Percent Range	Point Range
A	100% to 93%	500 to 465 points
A-	<93% to 90%	464 to 450 points
B+	<90% to 87%	449 to 435 points
B	<87% to 83%	434 to 415 points
B-	<83% to 80%	414 to 400 points
C+	<80% to 77%	399 to 385 points
C	<77% to 73%	384 to 365 points
C-	<73% to 70%	364 to 350 points
D+	<70% to 67%	349 to 335 points
D	<67% to 63%	334 to 315 points
D-	<63% to 60%	314 to 300 points
F	<60%	299 points or less

Do not anticipate rounding up of grades; that is done on a course-by-courses basis in order to preserve logical and equitable groupings that reflect clear dividing lines in student performance.

I am unreliable with recording grades into the D2L gradebook, and I will not report your overall grade to you by email. You get your graded work returned to you through the D2L dropboxes, or by email attachments, or by in-class returns of work, and can use that information to calculate your grade using the grade tracker.

Alternately, you can schedule an office- hours visit where you bring in your up-to-date grade self-tracker and ask to compare your results against my records.



COURSE OUTLINE

Minor modifications to the schedule are likely. Check email and in class for announcements about schedule changes. All “Required Materials” should be reviewed BEFORE that day’s class.

Course outline is organized and thorough.

Date	Week 01: Tuesday January 26, 2021: SYNCHRONOUS
Class Focus	Course overview, begin Greek Problems With Nature
Required Materials	Jackson-Hayes, “We don’t need more STEM majors...”
Supplemental Materials	10 Things This Instructor Loves Mandell and Malone, <i>Thinking Like a Historian</i> chs. 1 and 2
Things Due and Other Important Notes	
Date	Week 01: Thursday January 28, 2021: ASYNCHRONOUS
Class Focus	Greek Problems With Nature
Required Materials	Plato “Allegory of the Cave” excerpt Lindberg pages. 1 to top of 12, and Chapter 2 Corresponding Week 01 pre-recorded video.
Supplemental Materials	On Student-Shaming and Punching Down Begin “What Greek Miracle?” ch. 3 in Conner, <i>A People’s History of Science</i>
Things Due and Other Important Notes	
Date	Week 02: Tuesday February 2, 2021: SYNCHRONOUS
Class Focus	Ancient Understandings of the Heavens
Required Materials	Aristotle on Matter, Elements, Causation primer Lindberg Ch. 3 pages 45-56 and 65-66.

Supplemental Materials	Cullen, “The Sources of History: Primary and Secondary Sources” in <i>Essaying the Past: How to Read, Write, and Think about History</i>
Things Due and Other Important Notes	
Date	Week 02: Thursday February 4, 2021: ASYNCHRONOUS
Class Focus	Ancient Understandings of the Heavens
Required Materials	Ptolemy excerpts Corresponding Week 02 pre-recorded video. McConnell, “Models of Planetary Motion” from “Introduction” through “The Ptolemaic Solution” animated .gifs Lindberg Ch. 4, and Ch. 5 pgs. 86-95, and 98-105
Supplemental Materials	Finish “What Greek Miracle?” ch. 3 in Conner, <i>A People’s History of Science</i>
Things Due and Other Important Notes	
Date	Week 03: Tuesday February 9, 2021: SYNCHRONOUS
Class Focus	How People Transmit, Receive Ideas: The Hellenistic and Islamic Worlds Discussion 1.
Required Materials	Cormack in Numbers, <i>Galileo Goes to Jail</i> Myth # 3 “That Medieval Christians Taught that the Earth was Flat” and at least 1 of Lindberg 1 “That the Rise of Christianity was Responsible for the Demise of Ancient Science,” Shank 2 “That the Medieval Christian Church Suppressed the Growth of Science,” Nomanul Haq 4 “That Medieval Islamic Culture was Inhospitable to Science,” and Park 5 “That the Medieval Church Prohibited Human Dissection.”
Supplemental Materials	Cullen, “Analysis: The Intersection of Reading and Writing” in <i>Essaying the Past: How to Read, Write, and Think about History</i>
Things Due and Other Important Notes	Formal Discussion # 1 in class today.
Date	Week 03: Thursday February 11, 2021: ASYNCHRONOUS
Class Focus	How People Transmit, Receive Ideas: Medieval Education.

Required Materials	<p>Medieval Reactions to Aristotle sources, especially the “Condemnation of 1277”</p> <p>Corresponding Week 03 pre-recorded video.</p> <p>Lindberg, Chapters 7-10</p>
Supplemental Materials	Doing History: A Guide to Writing in the History Discipline
Things Due and Other Important Notes	
Date	Week 04: Tuesday February 16, 2021: SYNCHRONOUS
Class Focus	What does a Scientific Revolution Look Like?
Required Materials	<p>McConnell, “Model of Planetary Motion” – from “The Copernican Solution” to end, animated .gifs</p> <p>Lindberg, Ch. 14</p> <p style="text-align: center;">Either</p> <p>Kuhn, “Copernicus’ Innovation” in <i>The Copernican Revolution</i></p> <p style="text-align: center;">Or</p> <p>Westman, “The Copernicans and the Churches” in <i>God and Nature</i></p>
Supplemental Materials	Begin “Who were the Scientific Revolutionaries?” ch. 5 in Conner, <i>A People’s History of Science</i>
Things Due and Other Important Notes	
Date	Week 04: Thursday February 18, 2021: ASYNCHRONOUS
Class Focus	What does a Scientific Revolution Look Like?
Required Materials	<p>“Astronomical Models” primer</p> <p>“Biblical Passages that Might Concern Cosmology”</p> <p>Corresponding Week 04 pre-recorded video.</p>
Supplemental Materials	
Things Due and Other Important Notes	First Making Thinking Visible due to D2L by end of Friday February 19

Date	Week 05: Tuesday February 23, 2021: SYNCHRONOUS
Class Focus	How Does a Scientific Revolution End? and Discussion 2
Required Materials	Danielson in Numbers, <i>Galileo Goes to Jail</i> myths 6 “That Copernicanism Demoted Humans from the Center of the Cosmos,” Shackelford 7 “That Giordano Bruno was the First Martyr of Modern Science,” and Finocchiaro 8 “That Galileo was Imprisoned and Tortured for Advocating Copernicanism”
Supplemental Materials	Cullen, “Making a Case: An Argument in Three Parts” in <i>Essaying the Past: How to Read, Write, and Think about History</i>
Things Due and Other Important Notes	Formal Discussion # 2 in class today.
Date	Week 05: Thursday February 25, 2021: ASYNCHRONOUS
Class Focus	The Galileo Affair
Required Materials	Lindberg, “Galileo, the Church, and the Cosmos” in <i>When Science and Christianity Meet</i> Corresponding Week 05 pre-recorded video.
Supplemental Materials	
Things Due and Other Important Notes	Outline for Mid-term Essay due to D2L dropbox by end of Feb. 26th
Date	Week 06: Tuesday March 2, 2021: SYNCHRONOUS
Class Focus	Who invented the scientific methods?
Required Materials	Bacon and Descartes excerpts The African Enlightenment Efron in Numbers, <i>Galileo Goes to Jail</i> myths 9 “That Christianity Gave Birth to Modern Science,” Osler 10 “That the Scientific Revolution Liberated Science from Religion,” and Principe 11 “That Catholics Did Not Contribute to the Scientific Revolution”
Supplemental Materials	
Things Due and Other Important Notes	

Date	Week 06: Thursday March 4, 2021: ASYNCHRONOUS
Class Focus	Isaac Newton and the Stereotype of Genius
Required Materials	Davis in Numbers, <i>Galileo Goes to Jail</i> myth 13 “That Isaac Newton’s Mechanistic Cosmology Eliminated the Need for God” Corresponding Week 06 pre-recorded video.
Supplemental Materials	
Things Due and Other Important Notes	
Date	Week 07: Tuesday March 9, 2021: SYNCHRONOUS
Class Focus	What Makes Popular Science Popular? The Newtonians
Required Materials	Dobbs and Jacob, “The Culture of Newtonianism” Schoepflin in Numbers, <i>Galileo Goes to Jail</i> myth 14 “That the Church Denounced Anesthesia in Childbirth on Biblical Grounds”
Supplemental Materials	Begin “Who Won the Scientific Revolution?” ch. 6 in Conner, <i>A People’s History of Science</i>
Things Due and Other Important Notes	
Date	Week 07: Thursday March 11, 2021: ASYNCHRONOUS
Class Focus	
Required Materials	Scientific Societies Scenario reading Corresponding Week 07 pre-recorded video.
Supplemental Materials	Wineburg, “Why Historical Thinking Is Not About History”
Things Due and Other Important Notes	Midterm Essay due before spring break (March 12th)
Date	Week 08: Tuesday March 16, 2021 and Thursday March 18, 2021
Class Focus	NO CLASS: SPRING BREAK
Required Materials	

Supplementary Materials	
Important Notes	Second “Making Thinking Visible” due by end of Monday March 22nd to D2L Dropbox
Date	Week 09: Tuesday March 23, 2021: SYNCHRONOUS
Class Focus	Discussion 3; Lamarck, Natural Theology, and Radical Evolution
Required Materials	Paley, “Natural Theology” excerpts Shelley, <i>Frankenstein</i> excerpts Rupke in Numbers, <i>Galileo Goes to Jail</i> myth 15 “That the Theory of Organic Evolution is Based on Circular Reasoning”
Supplemental Materials	
Things Due and Other Important Notes	Formal Discussion # 3 in class today.
Date	Week 09: Thursday March 29, 2021: ASYNCHRONOUS
Class Focus	Why Darwin
Required Materials	Moore in Numbers, <i>Galileo Goes to Jail</i> myth 16 “That Evolution Destroyed Darwin’s Faith in Christianity—Until He Reconverted on His Deathbed” Corresponding Week 09 pre-recorded video.
Supplemental Materials	
Things Due and Other Important Notes	
Date	Week 10: Tuesday March 30, 2021: Synchronous
Class Focus	Why Darwin?
Required Materials	Desmond and Moore, <i>Darwin</i> chapters 11, 30, 34
Supplemental Materials	
Things Due and Other Important Notes	Formal Discussion # 4 in class today.
Date	Week 10: Thursday April 1, 2021: ASYNCHRONOUS

Class Focus	Why Darwin?
Required Materials	Corresponding Week 10 pre-recorded video.
Supplemental Materials	
Things Due and Other Important Notes	
Date	Week 11: Tuesday April 6, 2021: SYNCHRONOUS
Class Focus	Why Darwinisms?
Required Materials	Numbers, “Darwinism and the Dogma of Separate Creations” in <i>Darwinism Comes to America</i> Livingstone in Numbers, <i>Galileo Goes to Jail</i> myths 17 “That Huxley Defeated Wilberforce in Their Debate over Evolution and Religion,” and Roberts 18 “That Darwin Destroyed Natural Theology”
Supplemental Materials	
Things Due and Other Important Notes	
Date	Week 11: Thursday April 8, 2021: ASYNCHRONOUS
Class Focus	Why Darwinisms?
Required Materials	McCulloch, “The Law of Mutual Aid” in <i>The Open Door Sermons</i> Richards in Numbers, <i>Galileo Goes to Jail</i> myths 19 “That Darwin and Haeckel Were Complicit in Nazi Biology” and Larson 20 “That the Scopes Trial Ended in Defeat for Antievolutionism” Corresponding Week 11 pre-recorded video.
Supplemental Materials	
Things Due and Other Important Notes	
Date	Week 12: Tuesday April 13, 2021: SYNCHRONOUS
Class Focus	What did Mendel mean? And Discussion 05
Required	Ruse in Numbers, <i>Galileo Goes to Jail</i> myths 23 “That

Materials	“Intelligent Design” Represents a Scientific Challenge to Evolution,” and Numbers 24 “That “Creationism is a Uniquely American Phenomenon”
Supplemental Materials	
Things Due and Other Important Notes	Formal Discussion # 5 in class today.
Date	Week 12: Thursday April 15, 2021: ASYNCHRONOUS
Class Focus	What did Mendel Mean?
Required Materials	Scientific Racism: A Thread Corresponding Week 12 pre-recorded video.
Supplemental Materials	
Things Due and Other Important Notes	Third “Making Thinking Visible” assignment due to D2L Dropbox by end of Friday April 16th
Date	Week 13: Tuesday April 20, 2021: SYNCHRONOUS
Class Focus	Einstein and the Stereotype of Genius
Required Materials	Munroe, The Space Doctor’s Big Idea “The Most Beautiful Theory” Stanley in Numbers, <i>Galileo Goes to Jail</i> myth 21”That Einstein Believed in a Personal God”
Supplemental Materials	
Things Due and Other Important Notes	
Date	Week 13: Thursday April 22, 2021: ASYNCHRONOUS
Class Focus	Einstein and the Stereotype of Genius
Required Materials	Thurs in Numbers, <i>Galileo Goes to Jail</i> myth 22 “That Quantum Physics Demonstrated the Doctrine of Free Will” “How We Make Sense of Time” Corresponding Week 13 pre-recorded video.
Supplemental	

Materials	
Things Due and Other Important Notes	
Date	Week 14: Tuesday April 27, 2021: SYNCHRONOUS
Class Focus	Atomic Culture
Required Materials	<i>Girls of Atomic City</i> excerpt
Supplemental Materials	Boyer, "By the Bomb's Early Light"
Things Due and Other Important Notes	
Date	Week 14: Thursday April 29, 2021: ASYNCHRONOUS
Class Focus	Atomic and Genetic Culture
Required Materials	"Atomic Platters" music selections Corresponding Week 14 pre-recorded video.
Supplemental Materials	
Things Due and Other Important Notes	Outline for Final Essay due to D2L dropbox by end of April 30th
Date	Week 15: Tuesday May 4, 2021: SYNCHRONOUS
Class Focus	Genetic Culture and Discussion 6
Required Materials	Excerpt from <i>Immortal Life of Henrietta Lacks</i>
Supplemental Materials	
Things Due and Other Important Notes	Formal Discussion # 6 in class today.
Date	Week 15: Thursday May 6, 2021: ASYNCHRONOUS
Class Focus	The Science Wars
Required Materials	William Saletan, " Unhealthy Fixation " Asimov, "Visit to the World's Fair of 2014" O'Connor, " Coca-Cola Funds Scientists... "

	Corresponding Week 15 pre-recorded video.
Supplemental Materials	Russian Journals Retract more than 800 Papers after “Bombshell” Investigation “Psychology’s Replication Crisis is Running Out of Excuses” “Psychology’s Replication Crisis Has Made the Field Better” Hedy Brooke in Numbers, <i>Galileo Goes to Jail</i> myth 25 “That Modern Science Has Secularized Western Culture”
Things Due and Other Important Notes	4 th “Making Thinking Visible” due to D2L dropbox by end of Friday May 7 th
Date	Week 16: Final Exams Week: Attend class at your designated final exam time of
Class Focus	
Required Materials	
Supplemental Materials	
Things Due and Other Important Notes	Final Essay due to D2L Dropbox by end of your scheduled Final Exam Time.

Note the clarity and organization of the Course Student Learning Outcomes table. Each Course SLO is linked to specific assessment artifacts. The prepare explains where the SLO is addressed in the course as well as how the assignment(s) relate to the learning outcome.



Learning Outcomes:

Learning Outcome Level	Course Outcome 1
Student Learning Outcome: Students will..	Students will identify and evaluate the relative importance of diverse historical factors that shape the construction and application of scientific knowledge.
Addressed in Course When Students Study...	Literally the entire course focuses on the factors internal and external to science that affect its construction and/or application. This is perhaps most prominent in the examination of the histories of geo- and heliocentric cosmologies, evolution, and relativity.
Assessed in	Synthetic Essay #1 (Midterm) questions 1, 2, 3, 4; Synthetic Essay #2

Course By Students Completing...	(Final) questions 1, 2, 3, 4; Discussion-reflection #1 questions 1, 4, 5; Discussion-reflection #2 questions 1, 2, 3, 4, 5; Discussion 3 “Scientific Societies” game; Discussion-reflection #4 questions 1, 2; Discussion-reflection #5 question 2; Discussion-reflection #6 questions 1, 2; Making Thinking Visible assessments.
Learning Outcome Level	Course Outcome 2
Student Learning Outcome: Students will..	Students will analyze the history of how scientific knowledge has been used both to challenge and defend social order, and identify the power dynamics that affect how science is practiced.
Addressed in Course When Students Study...	This is most prominent in studying the complexity, depth, and breadth of historical interactions and intersection of scientific and religious thinking, as well as the many iterations of social Darwinisms.
Assessed in Course By Students Completing...	Synthetic Essay #1 (Midterm) questions 1, 3, 4; Synthetic Essay #2 (Final) questions 2, 3, 4; Discussion-reflection #1 questions 4, 5; Discussion-reflection #2 questions 1, 2, 4, 5; Discussion 3 “Scientific Societies” game; Discussion-reflection #1 questions 1, 2; Discussion-reflection #5 questions 1, 2; Discussion-reflection #6 questions 1, 2; Making Thinking Visible assessments.
Learning Outcome Level	Course Outcome 3
Student Learning Outcome: Students will..	Students will examine the historical circumstances that explain how scientific theories are developed, challenged, accepted, and overthrown.
Addressed in Course When Students Study...	This is most prominently studied in the history of geo- and heliocentrism, evolution, and relativity, but can be found virtually throughout the course
Assessed in Course By Students Completing...	Synthetic Essay #1 (Midterm) questions 1, 2, 3; Synthetic Essay #2 (Final) questions 1, 3, 4; Discussion-reflection #1 questions 1, 2, 3, 4, 5; Discussion-reflection #2 questions 1, 2, 3, 4, 5; Discussion-reflection #1 questions 1, 2, 3; Discussion-reflection #5 question 2; Discussion-reflection #6 question 1; Making Thinking Visible assessments.

Note General Education Goals 1 “Communicate Effectively” and 2 “Think Critically” are included below with at least one Student Learning Outcome for each goal. General Education Goal 6 “Understand Varied Historical, Cultural, and Philosophical Traditions,” is also included with at least two Student Learning Outcomes. All assessments are address in course material as well as artifacts. The “Making Thinking Visible” as well as the “Essay 1” assignments were included in the CAPC course proposal for clarity and connection to the General Education Goals and Course and Program Student Learning Outcomes.

Learning Outcome Level	General Education Goal 1: “Communicate Effectively”
Student Learning Outcome: Students will..	General Education Goal 1: “Communicate Effectively” Student Learning Outcome 1a: Express oneself effectively in common college-level written forms
Addressed in Course When Students Study...	All course topics that are eligible for completing a written assignment, most notably the historical relationship between science and religion, between science and social order/social change, and the nature of change and reception of scientific thought.
Assessed in Course By Students Completing...	All written assignments graded in accordance with the “writing,” “organization,” and “professionalism” sections of my Qualitative Rubric of Written Work. This includes all question-options within Essay 1 and 2, and Discussion Responses 1 through 6. Though not required, most formats that students select for “Making Thinking Visible” projects generally also include written expression, and as such also would be used to assess goal 1a.
Learning Outcome Level	General Education Goal 1 “Communicate Effectively”
Student Learning Outcome: Students will..	General Education Goal 1 “Communicate Effectively” Student Learning Outcome 1d: Demonstrate comprehension of and ability to explain information and ideas accessed through reading
Addressed in Course When Students Study...	All course topics that are eligible for completing a written assignment, most notably the historical relationship between science and religion, between science and social order/social change, and the nature of change and reception of scientific thought.
Assessed in Course By Students Completing...	All written assignments require demonstrated comprehension of and ability to explain information accessed through reading. This is assessed in each of the “Making Thinking Visible” assignments, which state that students are assessed in part on showing “substantive knowledge of at least one of the syllabus’s assigned or supplemental materials from the last week.” It is assessed in each question (1 through 4) of both essays 1 and 2, where students’ ability to comprehend and explain ideas accessed through readings are assessed in accordance with the “Thesis” and “Evidence” sections of my Qualitative Rubric of Written Work. Similarly, all Discussion Questions are assessed by that rubric, but, in particular, Discussion 1 Question 4, Discussion 2 questions 1-3 and 5, Discussion 3’s

	role-playing scenario, Discussion 4 questions 2 and 3, and Discussion 5 question 2 explicitly ask students to explain content gained from readings.
Learning Outcome Level	General Education Goal 2: “Think Critically and Analytically”
Student Learning Outcome: Students will..	General Education Goal 2: “Think Critically and Analytically” Student Learning Outcome 2b: Construct and/or analyze arguments in terms of their premises, assumptions, contexts, conclusions, and anticipated counter-arguments
Addressed in Course When Students Study...	All course topics that are eligible for completing a written assignment, most notably the historical relationship between science and religion, between science and social order/social change, and the nature of change and reception of scientific thought.
Assessed in Course By Students Completing...	All written assignments require demonstrated ability to construct and analyze arguments in terms of their premises, assumptions, contexts, and conclusions. This is most evident in Essay 1 questions 1, 3, and 4, Essay 2 questions 1, 2, and 4, Discussion 1 questions 2 questions 1-3 and 5, Discussion 4 question 1, and Discussion 5 question 2. Students’ skill in constructing and analyzing arguments in these assignments are graded in accordance with the “Thesis” and “Evidence” sections of my Qualitative Rubric of Written Work.
Learning Outcome Level	General Education Goal 2: “Think Critically and Analytically”
Student Learning Outcome: Students will..	General Education Goal 2: “Think Critically and Analytically” Student Learning Outcome 2c: Reach sound conclusions based on a logical analysis of evidence
Addressed in Course When Students Study...	All course topics that are eligible for completing a written assignment, most notably the historical relationship between science and religion, between science and social order/social change, and the nature of change and reception of scientific thought.
Assessed in Course By Students Completing...	All written assignments require demonstrated ability to reach sound conclusions based on a logical analysis of evidence. This is most evident in Essay 1 questions 1, 3, and 4, Essay 2 questions 1, 2, and 4, Discussion 1 questions 2 questions 1-3 and 5, the Discussion 3 role-play scenario, Discussion 4 question 1, and Discussion 5 question 2. Students’ skill in constructing and analyzing arguments in these assignments are graded in

	accordance with the “Thesis” and “Evidence” sections of my Qualitative Rubric of Written Work.
Learning Outcome Level	General Education Goal 6: Understand Varied Historical, Cultural, and Philosophical Traditions
Student Learning Outcome: Students will..	General Education Goal 6: “Understand Varied Historical, Cultural, and Philosophical Traditions” Student Learning Outcome 6a “Analyze, define, and explore what it means to be human (including how language, thought, and creative expression speak to an individual’s values, beliefs, and traditions)”
Addressed in Course When Students Study...	All course topics that are eligible for completing a written assignment, most notably the historical relationship between science and religion, and the social, psychological, and cultural factors that shape individuals’ production and consumption of scientific content.
Assessed in Course By Students Completing...	Synthetic Essay #1 (Midterm) questions 1, 2, 3 4; Synthetic Essay #2 (Final) questions 1, 2, 3, 4; Discussion-reflection #1 questions 1, 2, 4, 5; Discussion-reflection #2 questions 1, 2, 3, 4, 5; Discussion-reflection #1 questions 1, 2; Discussion-reflection #5 question 2; Discussion-reflection #6 questions 1, 2; Making Thinking Visible assessments.
Learning Outcome Level	General Education Goal 6: Understand Varied Historical, Cultural, and Philosophical Traditions
Student Learning Outcome: Students will..	General Education Goal 6: “Understand Varied Historical, Cultural, and Philosophical Traditions” Student Learning Outcome 6b. “Demonstrate an understanding of varied historical, cultural, and/or philosophical traditions”
Addressed in Course When Students Study...	All course topics that are eligible for completing a written assignment, most notably the historical factors that determine different cultural groups’ motivations for supporting scientific research, and that shape how cultural groups assimilate and synthesize scientific content.
Assessed in Course By Students Completing...	Synthetic Essay #1 (Midterm) questions 1, 2, 3 4; Synthetic Essay #2 (Final) questions 1, 2, 3, 4; Discussion-reflection #1 questions 1, 2, 3, 4, 5; Discussion-reflection #2 questions 1, 2, 3, 4, 5; Discussion-reflection #1 questions 1, 2, 3; Discussion-reflection #5 questions 1, 2; Discussion-reflection #6 questions 1, 2; Making Thinking Visible assessments.
Learning	Department of History Goal 1



Program Student Learning Outcomes are included and given the same level of clarity and detail. (see below)



Outcome Level	
Student Learning Outcome: Students will..	Construct generalizations and interpretations that demonstrate a knowledge of historical eras, change over time, and key historical concepts in the history of science, based on multiple points of view found in primary and secondary sources.
Addressed in Course When Students Study...	This is addressed throughout the entirety of the course, but especially in the analysis of the transmission, adaptation, and assimilation of ancient learning into the Islamic and Medieval European worlds, the scientific and cultural basis for historical disagreements on scientific matters, and the forms by which scientific knowledge is constructed and applied.
Assessed in Course By Students Completing...	Synthetic Essay #1 (Midterm) questions 1, 2, 3 4; Synthetic Essay #2 (Final) questions 1, 2, 3, 4; Discussion-reflection #1 questions 1, 2, 4, 5; Discussion-reflection #2 questions 1, 2, 3, 4, 5; Discussion-reflection #4 questions 1, 2, 3; Discussion-reflection #5 questions 1, 2; Discussion-reflection #6 questions 1, 2; Making Thinking Visible assessments.
Learning Outcome Level	Department of History Goal 2
Student Learning Outcome: Students will..	Communicate their knowledge of history in reasoned arguments supported by historical evidence drawn from primary and secondary sources and an appreciation of multiple causes, effects, and perspectives, in both oral and written presentations.
Addressed in Course When Students Study...	This is addressed in all formally graded written work and in-class discussions, covering virtually all topics addressed in the course.
Assessed in Course By Students Completing...	Synthetic Essay #1 (Midterm) questions 1, 2, 3 4; Synthetic Essay #2 (Final) questions 1, 2, 3, 4; Discussion-reflection #1 questions 1, 2, 3, 4, 5; Discussion-reflection #2 questions 1, 2, 3, 4, 5; Discussion-reflection #4 questions 1, 2; Discussion-reflection #5 questions 1, 2; Discussion-reflection #6 questions 1, 2; Making Thinking Visible assessments.
Learning Outcome Level	Department of History Goal 3
Student Learning Outcome: Students will..	Connect their knowledge of historical events and topics to a broader context (historical, political, global, historiographical, or with contemporary life and issues).

Addressed in Course When Students Study...	This is addressed in the course when students link ancient Greek natural philosophy to broader trends in the Greek world, the transmission of ancient learning to developments in the Islamic world and Medieval Europe, the links between heliocentrism and the Protestant Reformation, between evolution and imperialism, and between atomic physics and World War II.
Assessed in Course By Students Completing...	Synthetic Essay #1 (Midterm) questions 1, 2, 3 4; Synthetic Essay #2 (Final) questions 1, 2, 3, 4; Discussion-reflection #1 questions 1, 2, 4, 5; Discussion-reflection #2 questions 1, 2, 3, 4, 5; Discussion 3 “Scientific Societies” game; Discussion-reflection #4 questions 1, 2, 3; Discussion-reflection #5 questions 1, 2; Discussion-reflection #6 questions 1, 2; Making Thinking Visible assessments.

Additionally...

Ethics, Decency, and Intellectual Honesty

- Don't try to pass off someone else's hard work as if it was your own. This is not a proof of your learning, and risks being a form of plagiarism, cheating, or other academic misconduct.
 - For teacher-candidates, it also risks being documented formally as a concern about your professional disposition, one that will follow you throughout your career as a teacher-candidate at WCU.
- Using ideas or answers that are unique to a particular source, whether that source is a classmate, a book, website, or whatever else, without crediting that source, constitutes plagiarism. *Even if you re-arrange or summarize the unique ideas or answers of a foreign source so that the words are your own, if you do not properly acknowledge the original source then you are plagiarizing.*
 - The penalty for any form of plagiarism begins with a zero on that assignment. More extreme forms of plagiarism may constitute an F for the course, at my discretion.
 - Failure to prove that you have learned as a result of having just copied a bunch of material from somewhere else still is a zero, whether or not it also is plagiarism.
- **Ignorance is not an excuse:** if you have any doubt about citations, **ask me!**
- **You should treat this course with the same professionalism you will give to your career. That means demonstrating respect for yourself, your classroom and professional peers, and myself.**

- **An incomplete list of ways that a person might fail to demonstrate professionalism include**
 - Chronic lateness
 - Regular use of laptop or other technologies for any purpose unrelated to the learning objectives for our class.
 - Plagiarized or otherwise shoddy and lackadaisical work
 - **Demonstrating a lack of respect for another person or group’s identity**, whether it is a matter of race, religion, region, gender, orientation, economic class, or (intelligently defended and ethical) moral and political values. **We are a community of learners in a shared endeavor in this classroom, and you are expected to act like a responsible and respectful community member**

- If you are demonstrating less than professional attitudes in class, I will alert you to it through written feedback. Repeated instances will be grounds for being uninvited from class.

- **You own what you say and write. There is no arguing in bad faith, trolling, playing “Devil’s Advocate,” “Just being sarcastic” or “Just putting it out there” in this class.** The goal of our class is to create good, defensible historical interpretations based on rigorous examination of evidence.
 - “Devil’s advocate” arguments like “Well, hey, what if cannibalism is a good thing because it saves our environment!” generally get uttered in bad faith by persons who do not want to own and take responsibility for their ideas, so much as they want to generate some combination of attention and conflict on the cheap, expending a minimum or intellectual resources. At their best, they come from a place of valuing exploring the most extreme and least likely permutations of an idea, instead of exploring the most relevant and most likely consequences of an idea. This still means that, generally, they are a waste of time. If you try to do a “just putting it out there...” question, I will assume you do indeed take your words, and ideas, seriously. I will then ask you to defend this idea with real evidence, as opposed to hypotheticals.

Appropriate Communication Online: “Netiquette.” Part of netiquette is remembering that we all have different levels of comfort with life online. We may all assume we know what the word “netiquette” means, but perhaps someone who was not brought up in an always-online culture does not know it. (It’s an amalgam of “internet” and “etiquette,” meaning the rules of politeness for communicating online.). [Here is a good start on the sort of netiquette I expect in this course.](#) We will

spend additional in-class time designing our own standards for class behavior, which will be incorporated into your course-contribution grade.

Standards of Online Discussion Posts: We actually will not do graded discussion-posting for our course, relying instead on a diverse variety of ways by which you can demonstrate and then be assessed on your contributions to a vibrant online community. That said, when we use discussion posts, we will talk further about what effecting discussion-posting looks like. For now, here is [a good resource for describing quality discussion posting in an online course](#).

Online Terminology: Life online includes its own terminology, customs, and even grammar. Don't know a term? Ask! Try asking a peer in Slack, or in synchronous class, or me by email. Try going to google.com and searching for the word or acronym (being mindful that you might get a wide range of answers, with a wide range of age-appropriateness.). [Here's a good glossary for starting out](#).

Attendance Policy

I record absences, tardiness, and demonstrations of inattention and disrespect to your peers. While I do not and cannot use absences or tardies to trigger automatic removal from or failure in the course, they do affect your Classroom Contribution grade. You cannot expect to be an irregular member of this class and still demonstrate enough course-learning to be able to pass it. Success in this class involves sharing in the learning experience in class and demonstrating that you've learned from class.

Excused Absences Policy for University-Sanctioned Events

Excused absences, as described in Excused Absences Policy for University-Sanctioned Events (such as illness, medical appointments, legal obligations, or deaths in the family) will not be counted against a student's grade as long as a reasonable effort is made to inform the professor either before or as soon after the absence as possible.

Students are advised to carefully read and comply with the excused absences policy for university-sanctioned events contained in the WCU Undergraduate Catalog. In particular, please note that the "responsibility for meeting academic requirements rests with the student," that this policy does not excuse students from completing required academic work, and that professors can require a "fair alternative" to attendance on those days that students must be absent from class in order to participate in a University-Sanctioned Event.

If you have an emergency of a prolonged illness that lasts more than three (3) class days you should contact the Office of Judicial Affairs and Student Assistance at (610) 436-3511 to send an official notice to your teachers.

Policies concerning granting of No Grade, violation of academic integrity, and violation of student code of conduct.

“For questions regarding Academic Dishonesty, the No-Grade Policy, Sexual Harassment, or the Student Code of Conduct, students are encouraged to refer to their major department’s handbook, the Undergraduate Course Catalogue, the Rams Eye View, or the University Web Site. Please understand that improper conduct in any of these areas will not be tolerated and may result in immediate ejection from the class.”

Students with Disabilities

If you have a disability that requires accommodations under the Americans with Disabilities Act (ADA), please present your letter of accommodations and meet with me as soon as possible so that I can support your success in an informed manner. Accommodations cannot be granted retroactively. If you would like to know more about West Chester University’s Services for Students with Disabilities (OSSD), please visit them at 223 Lawrence Center. Their phone number is 610-436-2564, their fax number is 610-436-2600, their email address is ossd@wcupa.edu, and their website is at <https://www.wcupa.edu/universityCollege/ossd/>. In an effort to assist students who either receive or may believe they are entitled to receive accommodations under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, the University has appointed a student advocate to be a contact for students who have questions regarding the provision of their accommodations or their right to accommodations. The advocate will assist any student who may have questions regarding these rights. The Director for Equity and Compliance/Title IX Coordinator has been designated in this role. Students who need assistance with their rights to accommodations should contact them at 610-436-2433.

Reporting Incidents of Sexual Violence

West Chester University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to comply with the requirements of Title IX of the Education Amendments of 1972 and the University’s commitment to offering supportive measures in accordance with the new regulations issued under Title IX, the University requires faculty members to report incidents of sexual violence shared by students to the University’s Title IX Coordinator. The only exceptions to the faculty member’s reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. **Faculty members are obligated to report sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred to the person designated in the University Protection of Minors Policy.** Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at: https://www.wcupa.edu/_admin/diversityEquityInclusion/sexualMisconduct/default.aspx

Emergency Preparedness

All students are encouraged to sign up for the University’s free WCU ALERT service, which delivers official WCU emergency text messages directly to your cell phone. For more information and to sign up, visit www.wcupa.edu/wcualert. To report an emergency, call the Department of Public Safety at 610-436-3311.

Electronic Mail Policy

It is expected that faculty, staff, and students activate and maintain regular access to University provided e-mail accounts. Official university communications, including those from your instructor, will be sent through your university e-mail account. You are responsible for accessing that mail to be sure to obtain official University communications. Failure to access will not exempt individuals from the responsibilities associated with this course.

Who to Contact for Technical Assistance, and When to Use It:

At the [WCU Distance Education page for Student Resources](#) you will find a list of places you can go for help. Before you go there, remember, *your instructor is your first person to consult for technical support*. I am here to help, and I like helping! But from there, I'd point you to the "Technical Support" portion of that page. In particular, it links you to the [Information Services and Technology Help Page](#) and the [D2L Services SupportPage](#).

Bibliography

[History of Science Society, Isis: Current Bibliography](#) (Hyperlinked): "The "*Isis CB*" (isiscb.org) indexes new work in the history of science. Printed editions are issued as a supplement to *Isis* [the flagship scholarly journal of the History of Science Society – B.R.] and mailed to each member of the Society with the December issue of *Isis*. Each annual issue contains between 4500 and 5500 entries, including books, articles, chapters, reviews, and theses."