

ARTH 3315 / HIST 3708
ARTH 5315 / HIST 5708
Fall 2026
(3 credits)

**The Age of Curiosity:
Art, Science & Technology in Europe, 1400-1800**



Monday, Wednesday, Friday
10:10-11:00am
Blegen ...

Instructor

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Course Overview

“The Age of Curiosity” is a 3-credit course intended to satisfy the Liberal Education requirements for both the *Arts and Humanities Core* and for the *Technology and Society Theme*. But how can this be? After all, as the English author and scientist C.P. Snow famously lamented in 1959, the modern world has divided the arts and sciences into “the two cultures,” an unfortunate state of affairs in which two valuable ways of knowing the world are unable to speak to and benefit from the knowledge possessed by the other.

The idea of the arts and sciences as “two cultures,” however, is a distinctly modern phenomenon. During the early modern period in Europe (ca. 1400-1800), the borders between the arts and sciences—to the extent that these borders existed at all—were very much in-the-making, and it was possible to cross them with relative ease. The goal of this class is to provide a framework—comprising lectures, class discussion, reading assignments and writing exercises—in which you will develop a historical and critical perspective on the relationship between the arts and sciences, one that can inform your understanding of both past and present.

Arts and Humanities Core

In “The Age of Curiosity” we will investigate how the visual arts became a means of exploring the moral and social value of new scientific technologies in early modern Europe. For example, to what extent does the ominous demonstration of the air pump, as depicted in the painting by Joseph Wright on the first page of this syllabus, stage cultural concerns about the proper social function of new scientific technologies in eighteenth-century Britain? By reading closely works of art by Leonardo da Vinci, Albrecht Dürer, Hans Holbein, Jan Vermeer, Rembrandt van Rijn, Joseph Wright, and others, we will consider the importance of the visual arts as a space for reflection upon the human impulse to know and shape the world through technological means.

Accordingly, this course puts a strong emphasis on learning the skills necessary for the intelligent analysis of works of art. You will learn how to discuss and write about works of art in terms of their formal properties as well as the specific historical circumstances in which they were produced. To take the example of Joseph Wright’s painting again, not only will you learn to read and evaluate the various formal strategies through which Wright presents this scientific experiment to the viewer, but you will also consider how this work of art should be situated within the scientific, religious, political, and economic contexts of eighteenth-century Britain.

Technology and Society Theme

If “The Age of Curiosity” teaches you to think like an art historian, it also teaches that the art historian must think about science and technology. Leonardo da Vinci, for example, who thought of himself as an “engineer,” is just one example of an early modern artist for whom the distinction between the artist’s creative capacities and the pursuit of scientific curiosity was, to put it simply, unfathomable. The word “art” itself, as used in the early modern period, was closer to its Greek equivalent *techné* and to our word “technology” than to our modern concept of the “fine arts.” Accordingly, we will think in depth about the technologies through which early modern artist-engineers engaged with and shaped their world: technologies like linear perspective, Ptolemaic projections, the camera obscura, the telescope, the microscope, automata, the Leiden jar, the air pump, as well as medical techniques like dissection. We will

learn how such technologies worked; we will consider how their development put previous understandings of the world and its order (both physical and moral) into question; and we will consider the central role of the artist-engineer in these processes.

But “The Age of Curiosity” is not just about the past; it’s about finding ways of thinking about the present *through* the past. After all, many of the technologies we investigate are still very much with us: Renaissance perspective, for example, remains embedded in our virtual experience of the world through computers, cameras, and other optical technologies. This course will help you develop your own perspective on art and science, one that allows you to see beyond the disabling separation of the “two cultures” and to look with fresh eyes on the artfulness of the scientific technologies that so thoroughly mediate our own world.

Student Learning Outcome

Upon completion of this class, students will have mastered a body of knowledge and a mode of inquiry.

This class introduces students to the historical relationship between science and the visual arts in western culture over a period of approximately 400 years. It focuses on key monuments in the visual arts, including paintings, prints, illustrated texts, and scientific instruments, and on key artists/scientists during this period. In-class lectures situate these artworks and individuals within their historical contexts. Through weekly discussions, the writing of two short papers, two exams, and a hands-on project of re-creating a historic scientific instrument, students are assessed on their ability to 1) pose questions and defend interpretations of works of art through visual analysis; 2) analyze and synthesize readings from both primary and secondary sources; 3) develop understanding of “maker’s knowledge” through a hands-on project; 4) explain the significance of artworks in relation to their historical and cultural contexts, and 5) express their analyses of artworks in clear and cogent prose.

Assessment will be based on 1) mandatory and punctual attendance at class meetings; 2) participation in class discussion; 3) two short papers, one based on illustrated scientific texts in UMN Special Collections, and another based upon the hands-on project; 4) two exams (a midterm and final).

Readings and Discussion

Readings for the course consist of a combination of primary and secondary sources that explore the relationships between art, science and technology in early modern Europe. These readings provide essential background for the lectures, and all students should be prepared to discuss the readings for the week at the Friday class meeting. All readings for the course are available on the ARTH 3315/HIST 3708 Canvas site. The weblinks listed on the Canvas site are recommended to the curious; they are not required readings.

Course Requirements and Evaluation

Attendance. Regular attendance at class meetings is required. Please sign the attendance sheet at each meeting. More than three absences will result in points being deducted from your class participation grade. If you must miss several days of class in a row due to extraordinary circumstances, please talk to the professor.

Note-taking. Much of the material covered in the lectures will not be covered in the readings. Careful note-taking is therefore essential for success in this course. If for some reason you must be absent, then get the notes you missed from a fellow student. The professor will not provide notes for missed classes.

Digital Device Usage. In order to ensure a constructive learning environment for everyone in lecture, and to help you stay attentive and be an active note-taker, students are not allowed to use laptops, tablets, or phones during the lectures on Mondays and Wednesdays. The only exception to this rule will be made for those who need such devices because of physical disabilities. If you violate this rule, you will receive a reduction in your class participation grade. Laptops and tablets may be used during the Friday discussions, but only for the purpose of referring to readings (if you choose not to print them out). If you are found misusing your device, you will lose the privilege of using it and will receive a reduction in your class participation grade. If you have any questions or concerns about this policy, please discuss them with the professor.

Reading. Keeping up with the reading assignments is essential for comprehension of the lectures and for participation in discussion. There is on average 40 pp. of reading per week. Do the readings prior to the class for which they are assigned.

Writing Assignments for Undergraduates.

For undergraduates enrolled in ARTH 3315: You will complete two short (ca. 1000 words) papers for the course. The first will ask you to use documents and images available to you in the Wangenstein Historical Library to analyze the relationship between art and science in works from the early modern period. The second will ask you to reflect on our in-class “Making and Knowing Project,” which will be the construction of a *camera obscura*. Due dates are noted in the lecture schedule. You will be provided with more detailed instructions for each of the papers. Keep in mind that free, individualized writing instruction, both face-to-face and online, is always available at the University of Minnesota Center for Writing: <http://writing.umn.edu>. You should also make use of the “Art History Writing Resources” Canvas site, to which you have access through your MyU portal.

For undergraduates enrolled in ARTH 5315:

Instead of the final exam, you will write a 10-page research paper, on a topic to be determined in consultation with the professor.

Exams for Undergraduates. There will be two exams: a midterm and a final. The exams will include short answer questions and short essays based upon individual works of art, and for the final a longer comparative essay. The final exam will consist of one hour covering new material and one hour that will be comprehensive in scope. You will be provided with more detailed information on the exams as they approach (NB: undergraduates taking the class at the 5000-level will not take the final exam). No make-up exams will be given except for students with an excused absence. If you have a legitimate conflict with a scheduled exam or require special accommodations, it is your obligation to notify the professor at least two weeks in advance of the actual exam.

Undergraduate Grades:

Attendance and Class Participation: 15%
First paper: 15%
Midterm exam: 25%
Second paper: 15%
Research paper (only students enrolled at 5000-level): 30%
Final exam (only students enrolled at 3000-level): 30%

Graduate Student Evaluation.

Graduate students write a 16-20 page research paper on a topic to be determined in consultation with the professor. Meet with me early in the semester to discuss your topic. A 1-2 page thesis and a bibliography are due in class on October 16. The paper is due by noon on December 18.

All graduate students are expected to be active participants in the weekly discussion section and will take turns leading the discussion. Reading assignments for the weekly discussions will be handed out in a separate document.

Graduate Student Grades

First paper: 10%
Second paper: 10%
Attendance/part.: 20%
Research paper: 60%

The University defines grades in the following manner:

- A Achievement that is outstanding relative to the level necessary to meet course requirements.
- B Achievement that is significantly above the level necessary to meet course requirements.
- C Achievement that meets the course requirements in every respect.
- D Achievement that is worthy of credit even though it fails to meet fully the course requirements.
- F Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I.
- I Assigned at the discretion of the instructor when, due to extraordinary circumstances (such as hospitalization) the student was prevented from completing the work of the course on time. Requires a written agreement between the instructor and student.

The following scale will be used to convert numerical grades into letter grades:

A: 93 and above
A-: 90-92
B+: 87-89
B: 83-86
B-: 80-82
C+: 77-79
C: 73-76

C-: 70-72
D+: 67-69
D: 63-66
D-: 60-62
F: 59 and below

Late Papers. Your short papers can be turned in at any time before the dates indicated on the specific assignment sheets; after these dates, they will be considered late. Please note the due dates on the syllabus so as to plan in advance for any conflicts with other assignments you may have in other courses. Grades will be lowered on late papers and after a certain time they will not be accepted at all. Extensions will not be given unless you have a serious medical problem, nor will incompletes be allowed except in extreme circumstances.

Academic integrity is essential to a positive teaching and learning environment. All students enrolled in University courses are expected to complete coursework responsibilities with fairness and honesty. Failure to do so by seeking unfair advantage over others or misrepresenting someone else's work as your own, can result in disciplinary action. The University Student Conduct Code defines scholastic dishonesty as follows:

Plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis.

Within this course, a student responsible for scholastic dishonesty can be assigned a penalty up to and including an "F" for the course. If you have any questions regarding the expectations for a specific assignment or exam, ask the instructor.

Please note that there will be no extra credit assignments.

There are no prerequisites for this course.

Email policy

Students are expected to check their email accounts regularly, since the instructor will occasionally contact you by email. Please note, however, that email is not a substitute for meeting with the instructor. Emails should be brief and to the point. Discussion of assignments and course content will be handled through individual meetings.

Course Website

This class has a Canvas site. The course syllabus, assignments, readings, study images, key terms, etc. will all appear on the site. You can access it via MyU portal. Go to MyU Portal page at <http://myu.umn.edu> and log in with your Internet ID.

Workload policy

For undergraduate courses, one credit is defined as equivalent to an average of three hours of learning effort per week (over a full semester) necessary for an average student to achieve an average grade in the course. A student taking a three credit course that meets for three hours a week should expect to spend an additional six hours a week on coursework outside the classroom.

Disabilities

If you have a disability that requires special accommodations, please let us know at the beginning of the course and contact the Disability Resource Center (DRC) at (612) 626-1333. It is your responsibility to make sure you have been certified by the DRC before any graded evaluation.

Course Schedule

Week 1

Sept. 9 **Introduction**

Section 1: The Renaissance (1400-1600)

Sept. 11 **Making and Knowing**

Reading: Peter Dear, *Revolutionizing the Sciences*, 10-29

Week 2

Sept. 14 **Perspective and the Renaissance Engineer**

Reading: Samuel Y. Edgerton, *The Mirror, the Window, and the Telescope*, 1-10, 117-132

Sept. 16 **Leonardo da Vinci**

Reading: Leonardo da Vinci, passages from notebooks

Sept. 18 Discussion

Week 3

Sept. 21 **Dürer and Nature**

Sept. 23 **Dürer's Melancholy**

Reading: Erwin Panofsky, *Dürer's Melencolia I*

Sept. 25 Discussion

Week 4

Sept. 28 **Art and Anatomy in the Renaissance**

Reading: Dear, *Revolutionizing the Sciences*, 29-63

Sept. 30 Half of class visits Wangenstein Historical Library of Biology & Medicine

Oct. 2 Other half of class visits Wangenstein Library

Week 5

Oct. 5 **Instrumental Knowledge: Holbein's Ambassadors**

Reading: Ficino, "Platonic Theology"

Oct. 7 **The Cabinet of Curiosities**

Readings: Thomas Platter's description of Walter Cope's cabinet
Brian Dillon, "Curiosity"

Oct. 9 Discussion

Week 6

Oct. 12 **Seeing the World in an Age of Exploration**

Reading: Grafton, "Navigators and Conquerors"

FIRST PAPER DUE by 5:00pm

Section 2: Art, Science and Wonder in the Seventeenth Century

- Oct. 14 **Galileo: Designing the Heavens**
Readings: Dear, *Revolutionizing the Sciences*, 64-78, 99-110
 Samuel Edgerton, "Geometrization of Astronomical Space"
- Oct. 16 Discussion

Week 7

- Oct. 19 **The Academy of the Lynx**
- Oct. 21 **Athanasius Kircher and Baroque Technology**
Reading: Ingrid Rowland, "Athanasius Kircher, Missionary Scientist"
- Oct. 23 Discussion

Week 8

- Oct. 26 **Art, Magic and Science in the 17th Century**
Reading: Anthony Grafton, "Deception as a Way of Knowing"
- Oct. 28 Review for Midterm
- Oct. 30 ***MIDTERM EXAM***

Week 9

- Nov. 2 **The Dutch Anatomy Lesson**
Reading: Simon Schama, "Autopsy"
- Nov. 4 **The Mapping Impulse**
Reading: Claudius Ptolemy, "In What Geography Differs from
 Chorography"
- Nov. 6 Discussion

Week 10

- Nov. 9 **Microscopes and Vision**
Readings: Dear, *Revolutionizing the Sciences*, 110-126
 Robert Hooke, extract from Preface to *Micrographia* (1665)
- Nov. 11 **Vermeer and Descartes**
Readings: Dear, *Revolutionizing the Sciences*, 79-98
 Hooke, "An Instrument of Use to take the Draught, or Picture
 of any Thing" (1694)
- Nov. 13 Making and Knowing project: Camera Obscura

Section 3: Art, Science and Enlightenment in the Eighteenth Century

Week 11

- Nov. 16 Making and Knowing project: Camera Obscura (continued)
Nov. 18 **Spinning, Sewing, Weaving, Knowing**
Reading: Dear, *Revolutionizing the Sciences*, 145-163
Nov. 20 **Enlightenment Automata**
Reading: "Automaton," from the *Encyclopédie* (1751)

Week 12

- Nov. 23 **The Culture of Sensibility**
Reading: "Sensibility" and "Humanity" from the *Encyclopédie* (1751)
SECOND PAPER DUE by 5:00pm
Nov. 25/27 Thanksgiving Holiday: No Lecture or Discussion

Week 13

- Nov. 30 **Anatomy in the 18th Century**
Reading: Lyle Massey, "Dissecting Pregnancy in 18th-Century England"
Dec. 2 **Art, Race, and Science**
Reading: David Bindman, "The Climate of the Soul"
Dec. 4 Discussion

Week 14

- Dec. 7 **Wax Bodies**
Reading: Uta Kornmeier, "Almost Alive: The Spectacle of Verisimilitude in Madame Tussaud's Waxworks"
Dec. 9 **The Electric Enlightenment**
Reading: Anna S. Barnett, "Electricity and Allegiance"
Dec. 11 Review for Final Exam

Week 15

- Dec. 14 **Joseph Wright of Derby**
Reading: David Fraser, "Joseph Wright of Derby and the Lunar Society"
Dec. 16 **Nature and Nation**

***FINAL EXAM*:**