Teaching with Art in the Science Curriculum

One of the leading college and university art museums in the country, the Allen Memorial Art Museum (amam) has an encyclopedic collection that includes paintings, sculptures, works on paper, and decorative arts from nearly every time period, culture, and geographic region. Utilized by numerous courses at every level of the curriculum and by more than 30 academic departments and programs, the museum’s rich holdings serve as vital and effective tools for teaching and learning on campus.

Direct interaction and critical engagement with original works of art form an indispensable part of the liberal arts education offered at Oberlin College. Each academic year the museum’s galleries and Wolfgang Stechow Print Study Room welcome hundreds of class visits coordinated by the Office of Academic Programs, which facilitates the use of the collection in interdisciplinary ways that support course goals and provide a diverse and active learning experience.

The amam regularly collaborates with humanities and social sciences departments, and increasingly with faculty members in astronomy, biology, chemistry, computer science, geology, mathematics, neuroscience, and physics. Science classes use the museum as an alternative lab space where students can view artworks that encourage them to think about course material in new ways and further acquire or strengthen skills highly applicable across their college education, as well as to their future studies, training, and careers.

How will my students benefit?

Close engagement with a small selection of works of art may:

• Enhance visual acuity and observation skills,
• Cultivate deep-attention and good communication skills,
• Allow students to practice evidentiary reasoning,
• Place students in a situation in which multiple meanings are possible,
• Enable students to grapple with uncertainty and different points of view,
• Foster creative problem-solving,
• Nurture appreciation for and understanding of cultural difference,
• Promote dialogue and collaboration among students,
• Pique interest in the course topic and its connections to real life,
• Introduce in tangential ways the complex cultural dimensions of course concepts,
• Accommodate different learning styles, and
• Increase students’ self-awareness as learners.

Schedule a class visit

Please contact the Office of Academic Programs if you are interested in arranging a museum session for your class, or if you want to discuss possible connections between the collections and your course topic.

Liliana Milkova
Curator of Academic Programs
Allen Memorial Art Museum
lmilkova@oberlin.edu
440-775-8645

We request that you schedule class visits at least one month in advance of your preferred date. Due to the high number of classes visiting the museum, however, we recommend that you contact the Office of Academic Programs as early as possible. Please note that we expect faculty members to take an active role in preparing for, leading, and following up on their museum class visits.

Useful links

Search the museum’s collection online: allenartcollection.oberlin.edu

For more information on teaching and learning with the amam collection:
oberm.edu/amam/academic.html

This publication was made possible through generous support from the Andrew W. Mellon Foundation.
Collaborations
The museum’s collections have been integrated in meaningful and varied ways in many courses across the science curriculum. Science faculty bring their classes to the museum for different types of curricular engagement, from thematic explorations of art as a primary tool or cultural document to using art as a basis for group or individual assignments. Faculty members also bring students to the museum to view art and artifacts, to participate in workshops, and to collaborate on projects. This brochure describes some of our recent collaborations.

Biology
Associate Professor of Biology Taylor Allen’s Physiology class visits the museum to practice their understandings of emotions such as depression, fear, and love, and to propose mini-exhibitions on themes relevant to the course and drawn from their readings. The class examines closely British artist Clare Leighton’s wood engraving The Frightened Shepherd Boy (above) in a new light, one informed by the severe stress the artist suffered as a child. Importantly, the artwork, in combination with the childhood reminiscences brought to life in a far more nuanced way by any text the health consequences of stress.

Chemistry
With Her Tipus in General Chemistry class, Associate Professor of Chemistry Catherine Oertel views ten high-speed, stop-motion photography by the legendary mechanical engineer and innovator Harold Edgerton. Professor Oertel’s goal is to use the images to help students “think about different time scales, how fast things happen, and what methods are needed to study fast events.” In drawing connections to the very rapid motions of molecules and techniques for analyzing them, Oertel discovered that students were able to connect, for example, with their athletic interests as well as to science.

Mathematics
Students in Assistant Professor of Mathematics Christopher Man’s Calculus I course explore a diverse portfolio of artworks that serve as powerful and reliable evocations of ideas encountered in class. For example, works by Anna von Mertens, Henri-Edmond Cross, and Pablo Picasso visually illuminate the movement of objects, differences in scale, and the curvature of surfaces. Students complete a museum assignment in which they calculate the weight of a ceremonial bell from 19th-century China or compute the volume of an ancient Greek wine cup, or kylix, shedding light on its composition of lines and planes of color—–with discussions about how the bell’s provenance visual information R.I. Miller Jr. and Br. J. F. Pieveson Funds, 1938.05.03

Neuroscience
Assistant Professor of Neuroscience Leslie Kuijpers brings her Sensory Neuroscience class to the AMAM to link what students learn about the brain’s processing of visual information to a real-world situation. The students examine a selection of works from the museum’s Op Art holdings and then complete an assignment that asks them to formulate plausible hypotheses as to how the visual system allows them to experience the optical illusions present in the artwork. Professor Kuijpers confirms the effectiveness of the museum experience: “I’ve found that our trip to the Allen allowed us to engage even more strongly with the material in the class.

Choose your class experience
The AMAM offers many types of curricular contact with art:

Interactive class visits to the galleries and/or the Wolfgang Stechow Print Study Room during which works brought from storage may be displayed for class purposes.

Exercises in close looking and argumentation based on visual data.

Oral or written assignments based on works in the collection.

Focused tours and discussions of special exhibits.

Curation of mini-exhibitions on themes relevant to the course subject, course readings.

Art viewings (drop-in hours) in the Print Study Room.

Group activities focused on individual works or a selection of various thematically related works, and

Interdisciplinary teaching exhibitions.