50:080:000 Art through Science: Camden in Context

00:00:000 Science through Art: Camden in Context

Instructors:

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TEXTS:

Concepts of Biology – OpenStax

<https://openstax.org/details/concepts-biology>

*Painting on Location: Techniques for Painting Outside with Watercolors and Oils* by David Curtis and Robin Capon

[*Perspective Without Pain*](https://76f69e50-a-62cb3a1a-s-sites.googlegroups.com/site/dvfbtghj/wevsdr/Perspective-Without-Pain-.pdf?attachauth=ANoY7crpZ3JgsUX07Mrr3T3nWhrHCvn0I8TQsYCr4-4_4lsneqtRzozSXvWYAMgRy1m2AhvLVPaZ1fI5cU0_pXAo8tPUQNmFjZNSOTSO6wjOZThzhA6F1XNkNyH3Vzrls_VqK6AL09peuATirhO2g34XILl53U3lf2buFs6OY-wFQGM39HYtvn86SFi38MzysJUh36neSyRvv9Tag0eRmuSPvzl5OQxrkyJn6ftACZ1mkCh3vao--aU%3D&attredirects=0)(1992) by Phil Metzger

The purpose of science is to create factual knowledge. The purpose of art is to communicate things that may transcend simple language. At one time, however, all natural scientists were artists. Alexander von Humboldt, often considered the father of environmentalism, was a painter of great stature whose illustrations influenced artists such as Frederic Edwin Church and Louis Rémy Mignot. The first scientist to promote the concept of an ecosystem, Humbolt was fascinated by empirical data, but equally driven by a sense of wonder.

Both ***Art through Science*** and ***Science through Art: Camden in Context*** covers basic concepts involved in understanding the structure, function, and evolution of organisms with an emphasis placed on the application of biological knowledge to problems of man and society, through the practice of art. While doing site-specific work in Camden, NJ we will cover Large-Scale Systems, Plant and Animal Biology, Life at the Micro Level, and Creating Resilient Ecosystems through the lens of drawing and painting. In each of these subsections, the class allows students to choose their own area of interest to study. In Resiliency, the final part of the course, we intend to give students time onsite to come up with their own questions and projects that promote local ecological sustainability.

All members of this class must bring clothing for sun and rain, a digital camera, and drawing boards, pencils and a watercolor set. A substantial amount of the reading will be assigned on the first meeting day, so please keep up!

During summer session, this class will run over the course of 11 units (class days). The outline below reflects this schedule over the four topic areas.

Each project will be preceded by a slide lecture, student presentations, reading(s) and an instructional workshop that will introduce the basic techniques and materials we will employ. The lectures, presentations and readings will expose you to research and art works that relate to the assignment at hand and will trace the historical influences of each project. In the art portion of this class, you will learn to:

1. Define, evaluate and use a critical vocabulary that facilitates the analysis of both artistic form and content.
2. Analyze works of art in historical framework using various critical and theoretical methodologies.
3. Understand how works of plain air painting, drawing and illustration are made.
4. Express yourself effectively through the practice of art making.
5. Construct and present creative and cogent interpretations of your own artwork.

In the biology portion of this class, you will learn to:

1. Critically evaluate scientific arguments and understand the limits of scientific knowledge.
2. Demonstrate a broad understanding of scientific principles and the ways biologists conduct research.
3. Examine the scientific basis of complex questions, including how science impacts political, social, economic, or ethical issues.
4. Communicate scientific ideas clearly and effectively.

Topic Area I: Introduction to Large Systems And Site-Overview

**Unit 1**

**Art:** In this introductory meeting students will receive their drawing boards, watercolor set and a homework assignment to make three drawings involving elements close and far away **(*Perspective Without Pain, ex. 2 and 3 or exercise from Bruce)***This class will also offer a first demo of color mixing and watercolor application.

**Bio:** In this introductory meeting students will receive readings on ecosystems/history of site and Concepts of Biology text.

**Class Site Instructs:** Weather contingency plans, safety and clothing for sun/rain. Explanation of general class schedule. Art must be put up at the beginning of each class period and checked off. Explanation of quiz questions and quizzes in each topic area.

**Unit 2**

**Art:** Two field drawings (containing elements near and far). Color mixing, paint application and collect digital photos. Homework: *mix colors to match 7 elements in photos/compositions.*

**Bio:** Collection and site work. Reading for site visit. Readings: ecology, population, natural selection.

**Unit/Class 3**

**Art:** Site or studio time to watercolor as a group on compositions. One composition must be chosen and/or completed for group presentations in Unit 4.

**Bio:** Assign (select) one aspect of overall system to research research for a 2 min presentation in Unit 4. Assign section of reading to each student to write quiz questions in google doc.

**Unit/Class 4**

**Art/Sci:** Group presentations. Each student shows one painting and presents a 2 min oral presentation on one system research topic. Quiz questions written during class in google doc.

Topic Area II: Plant and Animal

**Unit/Class 5**

**Art/Sci:** Begin day with *Large Systems* Quiz, then site-visit

**Art:** Site visit, collect drawings and images of plants and animals. Choose an organism and research drawings/paintings as homework. Homework: Bring prints and working sketches to class

**Bio:** Reading and lecture on *Plant and Animal*.Choose an organism to research for a 2 min presentation in Unit 7.

**Unit/Class 6**

**Art:** In class time to work on plant/animal. Drawing and sketch critique.

**Science:** Work on class presentation. Readings assigned with quiz questions that are to be added to the google doc.

**Unit/Class 7**

**Art/Sci:** In class Plant/Animal oral presentations. Quiz questions written on each oral report and added to google doc.

Topic Area III: Life On The Micro Level

**Unit/Class 8**

**Art/Sci:** Day starts with quiz from Plant/Animal topic area, then lab visit

**Art:** Lab visit, collect drawings and images at the Micro Level. Choose an organism and research drawings/paintings as homework. Homework: *Bring prints and working sketches to class*

**Bio:** Lecture and reading on Micro Topic Area.Choose an organism and research. Bio readings on life at the Micro Level. Quiz questions assigned for google doc.

**Unit/Class 9**

**Art/Sci:** In class oral presentations. Quiz questions written on each oral report. Discussion of Sustainability topic questions and the sustainability artworks which will support the last presentation.

Topic Area IV: Ecology and Resilient Systems

**Unit/Class 10**

**Art/Sci:** Day starts with quiz from Micro topic area. Then work time on Sustainability Art/Sci reports.

**Unit/Class 11**

**Art/Sci:** In class art and oral presentations. Install exhibition of one piece from each student over the course of the class. Final Exam.

RESOURCES:

**Texts:**

McKibben, B., & McKibben, S. D. S. B. (2011). *Earth: Making a life on a tough new planet*. Vintage Books Canada.

*Ways of Seeing: Based on the BBC Television Series* (1990) by John Berger

**Web:**

Plein Air: Landscape Painting Techniques for Success: <https://www.youtube.com/watch?v=_RDb_RvKDU0>

8 Plein Air Painting Tips From Today’s Watercolor Pros:

<http://www.artistsnetwork.com/medium/watercolor/plein-air-painting-gallery>

Outdoor Painter Magazine: <http://www.outdoorpainter.com>

*Don't Just Sit There DO Something!*- by Dr.Joylette Portlock.

<https://www.communitopia.org/dont-just-sit-there---do-something-djsttv.html>