Course Number: VSAR 330  
Course Title: Art and Science: Historical and Contemporary Practice

- This is a new course. A FORM C is being filed concurrently.
- This is an existing course not currently satisfying an UDGE requirement, which is not being changed.
- This is an existing course not currently satisfying an UDGE requirement, which is undergoing change. A FORM C-2 is being filed concurrently.
- This is an existing course currently satisfying an UDGE requirement which is being submitted for recertification. A FORM C-2 is required only if the course is being changed.

1. Please attach a syllabus or draft syllabus of the course.

2. How many units is this course? 3 (Upper-Division General Education courses are limited to 3 units.)

3.a. Does this course have (a) prerequisite(s) other than completion of LDGE requirements?

   - yes  
   - no

   b. Does this course fulfill requirements for a major by the academic unit in which the course is offered? Check the YES box even if the course counts as an elective in the major.

   - yes  
   - no

   c. If you answered "yes" to 3.a. or 3.b., then the course is an exception to the definition printed on the next page of this form, and you must explain why the GE committee should make an exception for this course. Please describe how this course is designed to provide valuable and appropriate learning experiences to both majors and non-majors.

   I would like this course to fulfill the upper division theoretical elective requirement for VPA students. However, the course is not tailored to art majors in any way. It does not assume or require any prerequisites or knowledge about the relationship of art and science or any special knowledge about art.

3. Read Questions 4-8 in the instructions on the next page of this form and submit your answers as attachments. The instructions do not have to be printed or submitted.

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Signature: [Signature]

Date: 10/29/09

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Judit Hersko
Originator

[Signature]

Program Director

General Education Coordinator

General Education Committee Chair

Date: 11/4/09
FORM INSTRUCTIONS FOR UDGE-CC (WHITE)
UPPER DIVISION GENERAL EDUCATION NEW COURSE PROPOSAL
FOR AREA CC – HUMANITIES

The Definition of Upper Division GE Courses:

Upper Division General Education provides an opportunity for students to learn about areas of study outside their academic major. Upper Division General Education courses assume satisfaction of Lower Division General Education Requirements and develop upper division skills. Courses should not require discipline-specific prerequisites. Designed for non-majors, these courses make explicit the basic assumptions, principles and methods of the disciplinary or interdisciplinary area of study. This conceptual framework and the applicability of these principles and methods should be emphasized throughout the course.

Upper Division General Education courses should help students see how disciplines, ideas, issues and knowledge are often interrelated, intersecting and interconnected. Upper Division General Education courses should present knowledge which can enhance students’ lives outside the classroom or their studies in other subjects. These courses should also provide students with a classroom environment that fosters independent, active, engaged learning and a genuine curiosity about the subject matter.

Upper Division General Education courses shall be three-unit courses so that three such courses will exactly correspond with the 9-unit Upper Division General Education requirement of the CSU.

Attachments and responses to questions 1-4 will help the General Education Committee decide if the course is truly suitable to the General Education student. Please read the definition of Upper Division General Education printed above before answering these questions.

1. Please attach a syllabus or draft syllabus of the course.

2. How many units is this course? Upper-Division General Education Courses are limited to (3) units. – 3 units

3. a. Does this course have (a) prerequisite (s) other than completion of LDGE requirements? – No
   
   b. Does this course fulfill requirements for a major by the academic unit in which the course is offered? Check the YES box even if the course counts as an elective in the major.
   
   c. If you answered “yes” to 3.a. or 3.b., then the course is an exception to the definition printed above, and you must explain why the GE committee should make an exception for this course. Please describe how this course is designed to provide valuable and appropriate learning experiences to both majors and non-majors. – PLEASE SEE EXPLANATION ABOVE

4. Upper division general-education students may have fulfilled their lower division area C requirements in broad, interdisciplinary courses or in a different discipline than the discipline in which this course is offered. Please explain how this course introduces such students to the basic assumptions, principles and methods of the discipline, and how connection is made between these fundamentals and the particular applications emphasized in the course.

   This is an interdisciplinary course that investigates the relationship of art and science. The first weeks will introduce students to the basics of both areas of knowledge and compare and contrast how they explore the world. This will be accomplished without assuming prior in depth knowledge of either field.

Criteria for Upper Division Area CC Courses:

Questions 5-7 will help the General Education Committee decide if the course belongs in the Humanities category.

On a separate sheet of paper, address the criteria implied by the following instructions. Provide specific examples wherever possible.

5. Please specify how this course represents both past and present approaches to at least one of the following: a) spirituality, b) the arts, c) philosophy or intellectual thought.

   Please see course description – It addresses all of the above

6. Please specify how in this course students address issues involving both the cognitive and affective aspects of human experience either using critical analysis or creative activity.

   Students will be involved in cognitive analysis by comparing the two fields of knowledge and investigation. They will read and write about the topic in exams and papers. Since the topic is involved with art affective aspects of human experience will be central to the discussion (and the viewing of art in the course). In addition students may have the opportunity to complete an art project.

6. Please provide specific examples of the way in which this course examines at least one of the following: aesthetic, metaphysical, or ethical manifestations of the human intellect in at least one of the following contexts: a) diverse historical contexts; b) diverse cultural contexts.

   This course is a historical investigation of art and science focused on the period from the Renaissance to the present (with some references much further back in time as well). How the aesthetic, metaphysical and ethical dimensions enter into this course is addressed in the brief course outline.

Assessment for Upper Division Area CC Courses:

Question 6 will help the General Education Committee to evaluate whether you have planned sufficiently for assessing the success of your course.

8/30/2004
8. a. Please give examples explaining how the work assigned to students (quizzes, tests, essays, projects, etc.) allows you to measure how successful individual students are in meeting the UDGE learning objectives for this course. Please attach an example of the type of assignment you will use to evaluate how successfully students meet the UDGE learning objectives.

The course material will consist of readings and lectures and hence quizzes and exams will be a good measure of learning. In addition students will receive the option of a final paper or an artwork to prove their understanding of the material in more depth.

b. If you use any course assessment activities (e.g., "pre" and "post" testing, class-wide analysis of individual test questions, etc.) that measure whether or not the class as a whole successfully meets the General Education learning objectives for this course, please attach examples of these as well.
Arts and Science: Historical and Contemporary Practice

This will be a lecture course that introduces the history of the relationship of art and science in Western culture. After a brief historical introduction the course will be structured thematically rather than chronologically loosely based on Martin Kemp’s “Visualizations: The Nature Book of Art and Science” a collection of articles reflecting on the interaction of art and science since the Renaissance originally published in Nature. Lectures and readings will be supplemented by videos, demonstrations, visiting artists and scientists as well as fieldtrips.

Course outline:

Week 1-4:

1. Brief historical overview of broad relationships between art and science from the Renaissance to the present in Western culture.

2. Exploration of first two themes:

   A. Microcosms – the Renaissance model of understanding the human organism as “a lesser world” within the whole of creation

   B. Spatial Visions – from the invention of perspective (in the 15th century) to the use of the telescope and the microscope the 17th century saw a series of investigations regarding the rules of visual perception by artists and scientists

Week 5-8

Continued exploration of themes:

   A. Nature on the Move- new, dynamic visions of “romantic nature” set the groundwork for the Darwinian revolution

   B. Graphic Precision – The visual representation of scientific information in the 19th century including line illustrations as well as seeing devices such as the camera lucida the use of photography and X-rays.

   C. Man and Beast – The relationship of humans and animals in the age of “rationality” (Darwin, Freud, and Mary Shelley’s Frankenstein)

Week 9-12

Continued exploration of themes:
A. Space and Time – the representation of physical phenomena in space and time. How the new visions of physics, relativity and quantum mechanics eluded visual representation

B. Making Models – visual means to represent the invisible on a visible scale as well as the attempt to model the visual process itself

C. New Worlds Revealed – new macrocosmic and microcosmic discoveries and the terra incognita remaining on earth itself

Week 13-15

A. Process and Pattern – Exploring contemporary approaches including the artistic embrace of ephemeral processes mirroring the traces left behind by physico-chemical forces in science. This section will also include the computer and the internet and other process based new technologies.

B. Issues of art science, spirituality and ethics

Other sources of reading and reference:

Visualizations: The Nature Book of Art and Science will be supplemented by readings and references from:

“The Molecular Gaze: Art in the Genetic Age” (Suzanne Anker, Dorothy Nelkin)
“Exploring the Invisible: Art, Science and the Spiritual” (Lynn Gamwell)
“Visual Explanations: Images and Quantities, Evidence and Narrative” (Edward R. Tufte)
“Information Arts; Intersections Of Art, Science And Technology” (Stephen Wilson)