**445C. Advanced Product Design III**  
Spring, 3(1-8) STA 445D.  
Product design thesis. Design and development of a product system using data developed in STA 444B. Design solution will be presented in the form of a one-person exhibition.

**446. Product Design Workshop**  
Fall, Winter, Spring. 2(0-4) May reenroll for a maximum of 12 credits if different topic is taken. STA 231, STA 239, STA 245. A Product Design or an Advanced Product Design course concurrently.

Intense investigation of one product or product type such as furniture design, toy design, and package design. Workshop subject will change every term and will be announced prior to early registration. Students will investigate design principles, user behavior, materials, processes and trends of the workshop subject.

**447. Industrial Design Internship**  
Fall, Winter, Spring. 3 to 15 credits. May reenroll for a maximum of 15 credits. Approval of department.  
An off-campus field study program in Industrial Design. Students will gain pre-career experience by working in a design environment under the supervision of a professional Industrial Designer.

**449. Advanced Metalsmithing**  
Fall, Winter, Spring. 3 to 6 credits. May reenroll for a maximum of 35 credits. STA 245, STA 340 or approval of department.  
Hollow form emphasized. Smithing including raising, forging, and Masonite die. Additional specialized techniques such as resins, enamels, electro forming, and tool making. Individual development emphasized.

**450W. Art Workshop**  
Summer. 1 to 6 credits. May reenroll for a maximum of 15 credits. Approval of department.  
Specific sessions of short duration (one to three weeks) permitting a concentrated experience in one area of interest within the general studio spectrum.

**500. Studio Problems**  
Fall, Winter, Spring. 1 to 12 credits. May reenroll for a maximum of 24 credits.  
Studio problems in drawing, painting, printmaking, graphic design, industrial design, interior design, advertising design, sculpture-carving, sculpture-direct metal, ceramics.

**801. Painting**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Advanced work in a variety of painting media with strong emphasis on independent development.

**802. Drawing**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Advanced work in drawing employing a variety of media and calculated to contribute to development in related areas of art practice.

**803. Sculpture**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Advanced work in a variety of three dimensional media with strong emphasis on individual development.

**804. Ceramics**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Advanced work in pottery involving a variety of experiences and leading to independent development.

**805. Serigraphy**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Work in silk screen printmaking techniques leading to independent expressive development.

**806. Graphic Design**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Advanced work in all phases of the area of graphic design leading to independent development.

**807. Industrial Design**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Advanced study in the areas of design analysis and product development with emphasis on continued independent development.

**808. Jewelry and Metal**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Advanced work in jewelry and metal, and other related areas leading to continued independent development.

**809. Etching**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Work in etching leading to expressive independent development.

**810. Lithography**  
Fall, Winter, Spring, Summer. 3 to 12 credits.  
Work in lithographic techniques leading to expressive independent development.

**816. Issues in Contemporary Art**  
Fall. 3(0-3) Graduate students or approval of instructor.  
Impact of technology, new media, exploitation and exhaustion of current styles, new sources of patronage, political control, implications of art systems replacing object art explored in seminars with staff.

**820. Problems in Art Education**  
Fall, Winter, Spring, Summer. 1 to 3 credits. May reenroll for a maximum of 10 credits. Contract from department required prior to registration.

**821. Art Instructional Media Laboratory I-Multi-Media**  
Fall, Winter, Spring, Summer. 4(1-9) May reenroll for a maximum of 8 credits. Approval of department.  
Investigation of multi-media techniques as media of artistic expression and communication for application to art education or related fields.

**822. Art Instructional Media Laboratory II-Television**  
Fall, Winter, Spring, Summer. 4(1-9) May reenroll for a maximum of 8 credits. Approval of department. Interdepartmental and jointly administered with the Department of Telecommunication.  
Analysis of teaching video tapes and television programs in art. Utilization of television as a medium of artistic expression and communication for application to art education or related fields.

**825. Seminar in Art Education**  
Fall, Winter, Spring, Summer. 2 to 4 credits. May reenroll for a maximum of 8 credits. Approval of department. Examination and discussion of contemporary thought in the field of art education. Current problems examined within an interdisciplinary framework.

**826. Critical Theory and Aesthetic Experience in Art Education**  
Fall, Winter, Spring, Summer. 3(0-30) May reenroll for a maximum of 3 credits if different topics are taken. Approval of department.

Theories of art criticism and aesthetic experience. Organization of these concepts for application to art education programs or related fields.

**827. Curriculum Design for Art Education**  
Fall, Winter, Spring, Summer. 3(0-3) May reenroll for a maximum of 3 credits if different topics are taken. Approval of department.

Factors affecting art curriculum; analysis, preparation and evaluation.

**828. Research Methods for Art Education**  
Fall, Winter, Spring, Summer. 3(3-0) May reenroll for a maximum of 3 credits if different topics are taken. Approval of department.

Orientation to research designs and methodologies applicable to the study of problems in art education.

**840. Teaching Seminar-Art Practice**  
Fall, Winter, Spring, Summer. 1 to 3 credits. Approval of department. Supervised teaching of college classes in art practice.

**899. Master's Thesis Research**  
Fall, Winter, Spring. Variable credit.  
May reenroll for a maximum of 12 credits. Approval of department.

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**ARTS AND LETTERS A L**

College of Arts and Letters

130. The First Americans: An Introduction to the Native American Experience  
(FES 130) Fall, Spring. 4(4-0)  
Overview of Native American cultures and experiences from pre-European to contemporary times.

210. Film: An Introduction  
Fall, Winter, Spring. 4(2-4)  
An interdisciplinary examination of film, to enhance the student's knowledge and appreciation of the film experience by focusing on theory, practice, history, social meaning, and criticism.

IDC. Introduction to Women's Studies: Women's Consciousness  
For course description, see Interdisciplinary Courses.
380. The Role of Women in America: Arts and Self
(ARTL 380) Winter of even-numbered years. 3(3-0) Juniors.
Various art forms by women and the exploration of a feminine sensibility; sex, race, and class interactions, sexual stereotypes; male views of women and themselves; the impact of the media.

381. The Role of Women in America: Movements and Ideology
(ARTL 381) Spring of odd-numbered years. 4(4-0) Juniors.
Key personalities and philosophical currents in the women’s movement; biological and cultural myths and realities; the historical role of the family; “The Culture of Romance.”

389H. Perspectives in Literature
Fall. 3(3-0) Juniors, approval of Honors College.
Attention will be focused on several major literary works. Students will employ various types of literary analysis, considering theme, idea, structure, etc., and examining some major trends in contemporary literary criticism.

409H. Perspectives in Philosophy
Winter. 4(3-0) Juniors, approval of Honors College.
The two primary areas of concern will be ethics and aesthetics, the emphasis on one or the other to be determined by the professor. The course will include reading of major works, discussion of major figures in the field, and the preparation of a substantial paper.

434. Critical Issues in Dance
(ARTL 434) Winter. 3(3-0) Seniors in Dance Field of Concentration or approval of department.
Development of aesthetic values and opinions through analysis of critical issues in dance. Solidification of individual dance philosophies.

450. Arts Management
Fall, Winter, Spring. 3 to 5 credits.
May reenroll for a maximum of 9 credits, Seniors or Graduate Students or approval of department.
Administration of arts organizations, management of facilities, understanding operational methods and procedures of performing companies, financial structure and funding of arts centers, study of audience development; contemporary trends in arts management field.

461. Aging and Human Values
Spring. 3(3-0) Juniors.
Development of personal and professional responses to value-laden questions concerning aging and the elderly through historical, literary, philosophical, and related perspectives.

499H. Perspectives in the Social Sciences and Humanities
Fall, Winter, Spring. 2 to 6 credits.
May reenroll for a maximum of 12 credits if different topic is taken. Juniors, approval of Honors College, or approval of instructor. Interdepartmental with the College of Social Science.
An integration of subject matter and methodologies of several disciplines as they are relevant to particular topic areas.

499. Arts and Letters Internship
Fall, Winter, Spring. Summer. 1 to 10 credits.
May reenroll for a maximum of 36 credits. Approval of college.

ASTRONOMY AND ASTROPHYSICS

Audiology and Speech Sciences - Descriptions of Courses

ASTRONOMY AND ASTROPHYSICS

See Physics and Astronomy.

AUDIOLoGY AND SPEECH SCIENCES

College of Communication Arts and Sciences

108. Voice and Articulation
Fall, Winter, Spring. 3(4-0)
The study and development of the skills of voice and articulation.

201. Introduction to Communication Disorders
(ARTL 201) Fall, Winter. 3(3-0)
Speech, hearing, and language disorders in adults and children.

222. Oral Language Development
Winter. 3(3-0)
Emergence and development of receptive and expressive aspects of oral language of the child.