

**424B. Advanced Graphic Design**  
(ART 424, ART 424B.) Winter. 5 to 10 credits. 424A.

Advanced problem solving involving existing media of graphic expression. Study of graphic equivalents of literal images and ideas in the creation of posters, trademarks and magazine and book covers.

**424C. Advanced Graphic Design**  
(ART 424, ART 424C.) Spring. 5 to 10 credits. 424B.

Graphic design workshop. Advanced study of type faces, paper, light-sensitive materials, etc. Major emphasis on individual independent study.

**428. Advanced Sculpture**  
(ART 428.) Fall, Winter, Spring, Summer. 5 to 10 credits. May re-enroll for a maximum of 35 credits. 328.

Continuation of 328. Problems in carving, modeling, casting in wax, clay, plaster, direct metal, etc.

**431. Advanced Ceramics**  
(ART 431.) Fall, Winter, Spring, Summer. 5 to 10 credits. May re-enroll for a maximum of 35 credits. 341.

Continuation of 341 with increased opportunity for supervised individual study.

**433. Advanced Composition and Painting**  
(ART 433.) Summer. 3 to 6 credits. May re-enroll for credit. 353, 355 or approval of department.

Continuation of 353 or 355 with increased opportunity for supervised independent development.

**435. Advanced Painting**  
(ART 435.) Fall, Winter, Spring, Summer. 5 to 10 credits. May re-enroll for a maximum of 30 credits. 340, 355.

Continuation of 355 with increased opportunity for supervised independent development.

**440. Special Problems**  
(ART 440.) Fall, Winter, Spring, Summer. 2 to 5 credits. Approval of department.

Advanced work developed from special interest areas.

**444. Industrial Design II**  
(ART 444.) Fall, Winter, Spring, Summer. 5 to 10 credits. May re-enroll for a maximum of 35 credits. 344, approval of department.

Continuation of 344 with a broader choice of projects in industrial design and increased emphasis on independent development.

**449. Advanced Jewelry**  
(ART 449.) Fall, Winter, Spring, Summer. 1 to 6 credits. May re-enroll for a maximum of 12 credits. 391, approval of department.

Continuation of 391 with augmented opportunities for independent development and additional techniques.

**800. Studio Problems**  
(ART 800.) Fall, Winter, Spring, Summer. 1 to 6 credits.

Studio problems in drawing, painting, printmaking, graphic design, industrial design, interior design, advertising design, sculpture-carving, sculpture-direct metal, ceramics.

**801. Painting**  
(ART 801.) Fall, Winter, Spring, Summer. 3 to 12 credits.

Advanced work in a variety of painting media with strong emphasis on independent development.

**802. Drawing**  
(ART 802.) 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**  
(ART 803.) 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**  
(ART 804.) Fall, Winter, Spring, Summer. 3 to 12 credits.

Advanced work in pottery involving a variety of experiences and leading to independent development.

**805. Serigraphy**  
(ART 805.) Fall, Winter, Spring, Summer. 3 to 12 credits.

Work in silk screen printmaking techniques leading to independent expressive development.

**806. Graphic Design**  
(ART 806.) 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**  
(ART 807.) 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. Crafts**  
(ART 808.) 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.

**820. Problems in Art Education**  
(ART 820.) Fall, Winter, Spring. 1 to 5 credits. May re-enroll for a maximum of 15 credits. 421 or 422 or a bachelor's degree in art from an accredited institution.

**821. Art Instructional Media Laboratory I—Multi-Media**  
(ART 821.) Fall, Winter, Spring, Summer. 4(1-9) May re-enroll for a maximum of 8 credits. Certified classroom teachers with a bachelor's degree and a major in art.

Experimentation with art techniques, films, filmstrips, slides, photographs, audio tapes and various projection devices for purposes of developing art teaching materials of both aesthetic and educational value.

**822. Art Instructional Media Laboratory II—Television**  
(ART 822.) Fall, Winter, Spring, Summer. 4(1-9) May re-enroll for a maximum of 8 credits. T R 437 or experience in the television field. Interdepartmental and administered jointly with the Television and Radio Department.

Review and analysis of teaching video tapes

and television programs in art. Students may write television scripts, design sets and props, and teach in a taped or live closed-circuit or open channel program.

**840. Teaching Seminar—Art Practice**  
(ART 840.) Fall, Winter, Spring, Summer. 1 to 3 credits. May re-enroll for a maximum of 6 credits. Approval of department.

Supervised teaching of college classes in art practice.

**899. Research**  
(ART 899.) Fall, Winter, Spring. Variable credit. May re-enroll for a maximum of 12 credits. Approval of department.

**ARTS AND LETTERS A L**

**College of Arts and Letters**

**390H. Perspectives in Literature**  
Fall. 4(3-0) Juniors, approval of the 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.

**391H. Perspectives in Philosophy**  
Winter. 4(3-0) Juniors, approval of the 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.

**392H. Perspectives in History**  
Spring. 4(3-0) Juniors, approval of the Honors College.

The focus will be on the nature of international diplomacy in the 20th century, the development of nationalism, the balance of power system, the influence of new ideologies, and the developments of the power structure since 1945.

**ASTRONOMY AST**

**College of Natural Science**

**119. General Astronomy**  
Fall, Winter, Spring, Summer. 4(4-0) Not open to engineering or physical science majors or minors.

Physical nature of solar system, star clusters, and galaxies as seen by modern astronomers. Limited opportunity for astronomical observations.

**217. General Astronomy**  
Fall, Winter, Spring. 4(4-0) MTH 102. Not open to engineering or physical science majors or minors.

Descriptive course intended primarily for physical science majors. A semi-quantitative discussion of time, telescopes, the solar system, stars, clusters of stars, galaxies, and cosmology. Limited opportunity for astronomical observations.

**327. Practical Astronomy**  
Fall. 3(3-0) 217, MTH 113.

Celestial coordinate systems. Time conversion and sidereal time. Atmospheric refraction, parallax, proper motion, aberration, and precession. Star catalogs and ephemerides. Finding charts and setting of equatorial telescopes.