

ART CONSERVATION (CNS)

CNS 590 INDEPENDENT STUDY

1-3, 0/0

Independent research/investigation into a specific area of conservation of cultural heritage and art; topic selected by the student in consultation with a faculty member.

CNS 600 CONSERVATION IMAGING: TECHNICAL EXAMINATION AND DOCUMENTATION I

2, 2/0

Prerequisites: acceptance into the Art Conservation Department co-requisite with CNS 601. Methods and techniques used to determine and document the condition of artifacts in visible light. Development of theoretical understanding and advanced practical skills in scientific photography, conservation photodocumentation, and studio photography. Development of advanced skills in digital photography using DSLR cameras emphasizing precision, standardization, consistency, and color accuracy. Offered annually.

CNS 601 CONSERVATION IMAGING: TECHNICAL EXAMINATION AND DOCUMENTATION LAB I

1, 0/3

Prerequisites: acceptance into the Art Conservation Department; Co-requisite with CNS 600. Laboratory component of CNS 600. Supervised applied practice in: visual examination with visible lights; digital conservation photodocumentation of paintings, paper and objects using DSLR cameras; specialized conservation and studio lighting techniques; close-up photography and photomacrography. Emphasis on individual supervision for the rapid development of skills sufficient for independent mastery of techniques presented. Offered annually.

CNS 602 CONSERVATION IMAGING: TECHNICAL EXAMINATION AND DOCUMENTATION II

2, 2/0

Prerequisites: Successful completion of CNS 600 and 601; co-requisite with CNS 603. Ultraviolet, infrared, and other specialized techniques used to examine and document the structure and condition of artworks and cultural artifacts using visible and non-visible radiations; emphasizes theoretical understanding and development of advanced practical skills using digital cameras and electronic imagers. Offered annually.

CNS 603 CONSERVATION IMAGING: TECHNICAL EXAMINATION AND DOCUMENTATION LAB II

1, 0/3

Prerequisites: Successful completion of CNS 600 and 601; co-requisite with CNS 602. Supervised applied practice in: ultraviolet examination and digital photodocumentation (reflected UV and UV induced fluorescence methods); infrared examination and digital photodocumentation using digital cameras and infrared imagers; other special examination and imaging techniques. Emphasis on individual supervision for the rapid development of skills sufficient for independent mastery of techniques presented. Offered annually.

CNS 604 CONSERVATION IMAGING: TECHNICAL EXAMINATION AND DOCUMENTATION III

2, 2/0

Prerequisites: Successful completion of CNS 602 and 603; co-requisite with CNS 605. Time Lapse photography: theory and practice of effective approach to document treatment in progress. Multispectral imaging: theory, application, practice, and critical assessment. Documentation in action: practice and critical evaluation of effective use of various cameras in treatment laboratories. Radiographic techniques: history and basic physics of x-rays and radioactive materials; theoretical study and advanced practice in applying various digital radiographic techniques for museum artifacts; radiation safety. Offered annually.

CNS 605 CONSERVATION IMAGING: TECHNICAL EXAMINATION AND DOCUMENTATION LAB III

1, 0/3

Prerequisites: Successful completion of CNS 602 and 603; co-requisite with CNS 604. Applied practice in: use of flatbed and film scanners; profiling of digital cameras, scanners, monitors and printers; film-based and computed radiography of museum artifacts; Adobe Photoshop restoration techniques; use of color temperature meters. Emphasis on individual supervision for the rapid development of skills sufficient for independent mastery of techniques presented.

CNS 606 CONSERVATION IMAGING: TECHNICAL EXAMINATION AND DOCUMENTATION IV

2, 2/0

Prerequisites: Successful completion of CNS 604 and 605; co-requisite with CNS 607. Advanced studies in examination and documentation; and in radiography, ultraviolet, infrared, and other imaging techniques appropriate to a student's areas of conservation specialization and to their specialization research project. Application of computed imaging methods, including Reflectance Transformation Imaging, stereoscopy, and photogrammetry. Emphasis on individual supervision for the rapid development of skills sufficient for independent mastery of all examination and documentation techniques presented. Offered annually.

CNS 607 CONSERVATION IMAGING: TECHNICAL EXAMINATION AND DOCUMENTATION LAB IV

1, 0/1

Prerequisites: Successful completion of CNS 604 and 605; co-requisite with CNS 606. Supervised applied practice in examination and documentation and in radiography, ultraviolet, infrared, and other imaging techniques appropriate to a student's areas of conservation specialization and to their specialization research project. Supervised practice with Reflectance Transformation Imaging, 3D imaging, and video documentation. Emphasis on individual supervision for the rapid development of skills sufficient for independent mastery of techniques presented. Offered annually.

CNS 610 POLYMERS IN ART & CONSERVATION

3, 3/0

Corequisite: CNS 611. The chemistry and physics of polymers used to create and treat artwork. Nomenclature, reactivity, structure-property relationships, solubility, surfactants, emulsions, natural and synthetic coatings and adhesives, degradation, mechanical properties, polymer additives, and analytical methods of identification and characterization.

CNS 611 POLYMERS IN ART & CONSERVATION (LAB)

1, 0/3

Corequisite: CNS 610. The chemistry and physics of polymers to explain the behavior of materials used to create and treat artwork. Nomenclature, reactivity, structure-property relationships, solubility, surfactants, emulsions, natural and synthetic coatings and adhesives, degradation, mechanical properties, polymer additives, and analytical methods of identification and characterization.

CNS 612 CONSERVATION SCIENCE: POLARIZED LIGHT MICROSCOPY, LIGHT & MATTER

2, 3/0

Prerequisite: CNS 610/611. Corequisite: CNS 613. Introduction to aspects of the elements of light, color, and optics as they pertain to polarized light microscopy in the field of art conservation; principles of optical microscopy; how light interacts with matter, especially as it applies to the appearance of art and cultural objects.

CNS 613 CONSERVATION SCIENCE: POLARIZED LIGHT MICROSCOPY, LIGHT & MATTER LABORATORY

1, 0/3

Prerequisite: CNS 610/611. Corequisite: CNS 612. Expands on lectures in CNS 612 by providing practice of laboratory applications related to treatment and analysis of works of art; focus on the use of polarized light microscopy and microchemical testing of materials found in works of art and cultural artifacts.

CNS 614 CONSERVATION SCIENCE: INORGANIC MATERIALS IN ART AND CONSERVATION

3, 3/0

Prerequisite: CNS 612/613. Corequisite: CNS 615. Specialized understanding of inorganic materials with an emphasis on alternative scientific techniques used for their investigation (i.e., scanning electron microscopy, x-ray fluorescence analysis, x-ray diffraction). Material is presented at a level that prepares students to use the equipment at a basic level, or to communicate effectively with professional scientists who run the equipment.

CNS 615 CONSERVATION SCIENCE: INORGANIC MATERIALS IN ART & CONSERVATION LABORATORY

1, 0/3

Prerequisite: CNS 612/613. Corequisite: CNS 614. Expands on lectures in CNS 614 and provides students with practice laboratory applications related to treatment and analysis of works of art. Focus on the use of polarized light microscopy and microchemical testing of materials found in works of art and cultural artifacts.

CNS 616 TECHNICAL ASPECTS OF PREVENTATIVE CONSERVATION

3, 3/0

Prerequisites: CNS614/615; co-requisite with CNS617. Explores the scientific principles behind preventive conservation and delivers hands-on experience in manipulating the storage and display environment for cultural heritage objects control. Topics include: degradation kinetics, environmental monitoring & control, artificial aging, materials testing, protective coatings, and mitigation of biological degradation. Laboratory exercises provide hands-on experiences in preventive conservation.

CNS 617 TECHNICAL ASPECTS OF PREVENTATIVE CONSERVATION (LAB)

1, 0/3

Prerequisites: CNS614/615; co-requisite with CNS616. Laboratory course explores the scientific principles behind preventive conservation. Hands-on experiences in experimentally manipulating the storage and display environment for cultural heritage objects, and the results of that manipulation.

CNS 620 TECHNOLOGY AND CONSERVATION OF PAINTINGS I

2, 2/0

Prerequisites: Formal acceptance into the Art Conservation Department; co-requisite with CNS 621. Historical survey of processes and materials employed by artists in the creation of wall and easel paintings from the Paleolithic to the present and the implications for their conservation. Painting types include rock art, Egyptian and Etruscan tomb painting, medieval egg tempera, Italian Renaissance fresco, oil on panel and canvas, and modern media. Offered annually in fall.

CNS 621 TECHNOLOGY AND CONSERVATION OF PAINTINGS 1 (LAB)

1, 0/3

Prerequisites: Co-requisite with CNS 620. Re-creation of historical paintings using traditional materials and techniques to the greatest extent possible: 14th century Sieneese egg tempera on panel and 17th century Flemish or Spanish painting on canvas. Written technical examination of an oil painting of value on loan through the department's Clinic program. Offered annually in the fall.

CNS 622 TECHNOLOGY AND CONSERVATION OF PAINTINGS II

2, 2/0

Prerequisites: CNS 620 and 621; co-requisite with CNS 623. The theory and practice of conserving easel paintings. Topics include treatment proposal design, aqueous and solvent based cleaning systems, resins and solvents used for consolidation, mechanics and dynamics of canvas paintings and support systems, humidification and lining treatments, varnishes and varnishing techniques and color matching theory and its application to inpainting. Offered annually in spring.

CNS 623 TECHNOLOGY AND CONSERVATION OF PAINTINGS II LABORATORY

1, 0/3

Corequisite: CNS 622. Hands-on conservation of easel paintings. Includes treatment proposal ethics and design, aqueous and solvent based cleaning systems, resins and solvents used for consolidation, mechanics and dynamics of canvas paintings and support systems, humidification and lining treatments, varnishes and varnishing techniques and color matching theory and its application to inpainting. Offered annually in the spring.

CNS 624 TECHNOLOGY AND CONSERVATION OF PAINTINGS III SEMINAR

2, 2/0

Prerequisites: CNS 622. Ethical and practical considerations are addressed to help the student broaden her/his repertoire of skills and knowledge of materials as applied to paint consolidation, filling, tear mending and acrylic dispersions. Additional topics include philosophical approaches to the cleaning of paintings and the theory, design and construction of suction and vacuum hot tables. Offered annually in the fall.

CNS 625 TECHNOLOGY AND CONSERVATION OF PAINTING III LABORATORY

1, 0/3

Prerequisites: Co-requisite with CNS 624. Greater involvement with easel painting treatments allows the student to broaden her/his repertoire of skills, to further develop acuity for recognizing condition problems and to strengthen visual connoisseurship. Offered annually in the fall.

CNS 626 TECHNOLOGY AND CONSERVATION OF PAINTINGS IV

3, 2/3

Prerequisites: CNS 624 and CNS 625. Seminar topics include a study of fakes and forgeries, the history of cleaning controversies, structural treatment of panel paintings and conservation framing. The lab section includes a deeper involvement with easel painting treatments to help the student broaden her/his repertoire of skills, to further develop acuity for recognizing condition problems and to strengthen visual connoisseurship. Involves original research and materials analysis. Offered annually in the spring.

CNS 630 TECHNOLOGY & CONSERVATION OF WORKS OF ART ON PAPER I

2, 2/0

Corequisite: CNS 631. The structure and fabrication of paper and the media commonly found in works of art on paper, photographs, and books; examination and identification of paper and media; causes and effects of deterioration in paper and media; student writes and defends the examination report for a work of art on paper.

CNS 631 TECHNOLOGY & CONSERVATION OF WORKS OF ART ON PAPER I LABORATORY

1, 0/3

Corequisite: CNS 630. Studio recreations of paper and the media found in art on paper using historical recipes and techniques; identifications of media and sheets found in works of art on paper; rudimentary repairs on a variety of papers.

CNS 632 TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON PAPER II

2, 2/0

Prerequisites: CNS 630 and CNS 631. Corequisite: CNS 633. History and theory of basic techniques in paper conservation (washing, deacidification/neutralization, tape removal, lining, adhesives, compensation of losses, formats for storage, etc.); hands-on practice of these and other techniques on mock-ups.

CNS 633 TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON PAPER II LABORATORY

1, 0/3

Prerequisites: CNS 630 and CNS 631. Corequisite: CNS 632. Treatment of the first project in paper conservation under the close supervision of the faculty; a second project

CNS 634 TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON PAPER III SEMINAR

2, 0/0

Prerequisites: CNS 633; Co-requisite: CNS 635. First advanced lecture/seminar course in paper conservation exposes the student to a variety of recent literature in conservation, the history of conservation, and published science in conservation. Students will criticize historical and new literature about conservation and treatment and apply this criticism to their own writing and treatment strategies. Through close reading of texts on the physics and chemistry of paper and water, the student develops a fundamental chemical and molecular understanding of the interactions of cellulose (paper) and water. Offered every fall semester.

CNS 635 TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON PAPER III LABORATORY

1, 0/3

Prerequisites: CNS 630, CNS 631, CNS 632, CNS 633. Co-requisite: CNS 634. First advanced laboratory course in paper conservation allows the student to examine and treat a wider variety of media, paper and conservation problems. Independent decision-making and problem solving are encouraged as students are expected to apply the material covered in the seminar (CNS 634) to their practical treatment projects. Short research projects are also possible. Offered annually in fall.

CNS 636 TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON PAPER IV

3, 2/3

Prerequisite: CNS 634. Final course in the series of treatment courses for the paper conservation specialist; intended to allow the student to examine and treat a wider variety of media, paper, and conservation problems. Independent decision making and problem solving are required. Short research projects are needed for each treatment.

CNS 640 TECHNOLOGY AND CONSERVATION OF OBJECTS I

2, 2/0

Prerequisites: acceptance into the Garman Art Conservation Department. Co-requisite: CNS 641. This course is the first semester of the curriculum in objects conservation and will focus on the technology and materials of objects. This semester focuses on the technology and conservation of organic materials (wood, plant materials, animal materials including leather, bone, ivory etc, non-cellular organics such as resins and coatings). Discussion includes changing attitudes towards these materials, and changes in the strategies of working them over time, and as conditioned by culture. Whenever possible, appropriate conservation techniques and materials will also be discussed. In addition, students will perform a comprehensive examination of the object that they will be treating in the second semester. Offered annually in the fall.

CNS 641 TECHNOLOGY AND CONSERVATION OF OBJECTS I LABORATORY

1, 0/3

CNS 642 TECHNOLOGY AND CONSERVATION OF OBJECTS II

2, 2/0

Continuation of CNS 640. Technological history and conservation of a wide variety of materials encountered in historic and artistic objects: metals, glass, ceramics, wood, decorative surface techniques (lacquering, japanning, gilding), skins and other organics, stone; fabrication techniques and how they can be identified; conservation treatments and recommendations; studio sessions include demonstrations of techniques and supervised work on a variety of objects. Field trips.

CNS 643 TECHNOLOGY AND CONSERVATION OF OBJECTS II LABORATORY

1, 0/3

Prerequisites: CNS 640, CNS 641. Co-requisite: CNS 642. Practical laboratory treatment of objects to complement the lecture, CNS 642. The application of currently accepted methods of conservation treatment. Additional impromptu explanation of problems and solutions will be presented by the instructor as issues arise. All objects under treatment, as well as the students assigned treatment will be discussed with the class at large. Alternative methods of treatment will also be discussed. Offered annually in spring.

CNS 644 TECHNOLOGY AND CONSERVATION OF OBJECTS III

2, 0/3

Prerequisites: CNS 642, CNS 643; co-requisite: CNS 645. This course is the third semester of the curriculum in objects conservation and will focus on the technology and inorganic materials of objects. This semester focuses on the technology and conservation of inorganic materials (metals, glass, ceramics, stone, etc.). Discussion includes worldwide first-use of these materials as well as changing attitudes towards them, strategies of working overtime, and culturally-based understandings. Whenever possible, appropriate conservation techniques and materials will also be discussed. In addition, students will continue treatment of additional objects assigned after the first semester. Offered fall semester only.

CNS 645 TECHNOLOGY AND CONSERVATION OF OBJECTS III LAB

1, 0/3

Prerequisites: CNS 643. Co-requisite: CNS 644. The laboratory portion of the second year, third semester course for the technology of objects focuses on the materials and techniques of historic technologies using inorganic materials. This is accomplished through examination of the extensive study collections of the Garman Art Conservation Department, slide, Power Point and video resources and participatory exploration of various making methods in a wide variety of inorganic materials. Hand-tools are used wherever possible. Raw materials from the Department study collection are also used where possible. Offered annually in the fall.

CNS 646 TECHNOLOGY AND CONSERVATION OF OBJECTS IV

3, 2/3

Prerequisites: CNS644, CNS645. This seminar is the final in the series of treatment courses for the object conservation specialist to examine and treat a wider variety of objects. Independent decision-making and problem solving are required. Short research projects are required for each treatment. Independent technical studies of art objects are undertaken by all students. In addition to practical treatments, seminar/demonstration workshops of additional treatment methods are regularly presented by the instructor. Topics are decided upon based on the interests of those specializing in objects conservation. The course is offered annually in spring.

CNS 685 SPECIAL TOPICS IN CONSERVATION I

1, 1/0

Prerequisites: Enrollment in the Garman Art Conservation department. Guest lecturers and faculty introduce specialty topics in book, photograph, paper, object, and painting conservation, as well as conservation science, materials analysis, documentation, and imaging, and many others. Topics are dynamic and change annually to reflect critical developments in these areas. Lectures, workshops, field trips, annual conservation services Clinic, and Open House are typical activities. Offered annually in fall. Repeatable.

CNS 686 SPECIAL TOPICS IN CONSERVATION II

1, 1/0

Prerequisite: CNS 685. Guest lecturers and faculty introduce specialty topics in book, photograph, paper, object, and painting conservation, as well as conservation science, materials analysis, documentation, and imaging, and many others. Topics are dynamic and change annually to reflect critical developments in these areas. Lectures, workshops, field trips and conferences are typical activities. Offered annually in spring. Repeatable.

CNS 694 MASTER'S PROJECT I

1, 0/0

Prerequisites: Instructor Permission. A directed study course guided by a student's specialty advisor and involving multiple faculty members. The second year student prepares to perform research and/or conservation treatment related to a selected artifact or group of artifacts within her/his chosen concentration. The student submits a formal statement defining the project scope and a timeline for completion, with a bibliography of pertinent references. Offered every fall semester.

CNS 695 MASTER'S PROJECT II

3, 0/0

Prerequisites: CNS 694. A directed study course guided by a student's major advisor, and involving multiple faculty members. The second year student performs research and/or conservation treatment related to a selected artifact or group of artifacts within her/his chosen concentration. Analysis and treatment procedures are documented and presented in both oral and written form at the end of the spring semester. Offered every spring semester.

CNS 698 INTERNSHIP SUSTAINING

12, 0/0

CNS 699 INTERNSHIP

12, 0/0

A 12-month off-campus academic program under the direction of an established conservator working either privately or within an institution. Both the program of study and the supervising conservator must be approved by the department faculty. Department faculty monitor student progress through regular reports from the internship supervisor and intern.

CNS 721 THESIS/PROJECT CONTINUATION

0, 0/0

CNS 722 THESIS/PROJECT EXTENDED

0, 0/0