ART CONSERVATION (CNS)

CNS 590 INDEPENDENT STUDY
1-3, 0/0
See the Graduate Course Catalog (http://www.buffalostate.edu/graduateschool/documents/courselistings.pdf)

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 LAB 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 CNS621. Historical survey of processes and materials employed by artists in the creation of wall and easel paintings from 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.

CNS 621 TECHNOLOGY AND CONSERVATION OF PAINTINGS 1 (LAB)
1, 0/3
Prerequisites: Co-requisite with CNS620. Students create two mock-up paintings using historical materials and techniques to the greatest extent possible: 14th century Sienese egg tempera panel and 17th century Flemish or Spanish oil painting on canvas. The technical examination of an aged oil painting of value is performed in detail, and recorded in writing for the client.

CNS 622 TECHNOLOGY AND CONSERVATION OF PAINTINGS II
2, 2/0
Prerequisites: Successful completion of CNS620 and 621; co-requisite with CNS623. The theory and practice of conserving easel paintings is examined in detail. Topics include 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 in-painting.

CNS 623 TECHNOLOGY AND CONSERVATION OF PAINTINGS II LABORATORY
1, 0/3
Corequisite: CNS 622. The practice of conserving easel paintings using 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. Professional ethics applied to treatment proposal and reports.

CNS 624 TECHNOLOGY AND CONSERVATION OF PAINTINGS III
2, 2/0
Prerequisites: Laboratory course offered as a continuation of CNS623. 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 for distinguishing original paint from later additions.

CNS 626 TECHNOLOGY AND CONSERVATION OF PAINTINGS IV
4, 0/6
Laboratory course offered as a continuation of CNS 624. Restricted to students majoring in paintings conservation. Greater involvement with easel painting treatments allows students to broaden their repertoire of skills, further develop acuity for recognizing condition problems, and strengthen visual connoisseurship for distinguishing original paint from later additions. Involves original research and materials analysis.

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 LABORATORY
2, 0/3
Prerequisites: CNS 630/631 and CNS 632/633. First advanced 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 is encouraged. Short research projects are also possible.

CNS 636 TECHNOLOGY AND CONSERVATION OF WORKS OF ART ON PAPER IV
4, 0/6
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
Co-requisite with CNS 641. Technology and material science of cultural objects composed of organics (wood, plant materials, animal materials including leather, bone, ivory, etc., and non-cellular organics such as resins and coatings); changing attitudes towards these materials, and changes in the strategies of working these materials.

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
See the Graduate Course Catalog (http://www.buffalostate.edu/graduateschool/documents/courselistings.pdf)

CNS 644 TECHNOLOGY AND CONSERVATION OF OBJECTS III
2, 0/3
Advanced study of the technology and materials of objects, especially technology and conservation of inorganic materials (metals, glass, stone, ceramics, etc); changes in the strategies of working them over time, and as conditioned by culture; appropriate conservation techniques.

CNS 646 TECHNOLOGY AND CONSERVATION OF OBJECTS IV
4, 0/0
Students select an area of specialization (requires approval of the faculty member involved) and then participate in unique conservation treatments, which may involve research and scientific experimentation.

CNS 685 PROFESSIONALISM IN CONSERVATION I
2, 2/0
Professional ethics and standards in relation to works of art and colleagues; systems for surveying collections; instructing other museum departments; assisting the public to better understand conservation principles; practical aspects of storing and handling hazardous materials; establishing, insuring, and equipping a conservation studio.

CNS 686 PROFESSIONALISM IN CONSERVATION II
1, 1/0
Continuation of CNS 685. Ethical and practical aspects of professional conservation activity. Students specializing in paintings, paper, or objects attend one of three concurrent seminars aimed at enriching course material covered in previous semesters, as well as introducing new topics for discussion and/or demonstration. Guest speakers from conservation and allied professions. Field trips.

CNS 690 MASTERS PROJECT
3, 0/0
See the Graduate Course Catalog (http://www.buffalostate.edu/graduateschool/documents/courselistings.pdf)

CNS 695 STUDENT SPECIALIZATION
4, 0/0
Directed study course, guided by one or more faculty members, in which the student performs research and/or treatment related to a selected artifact or group of artifacts within his or her chosen concentration. Procedures are completely documented and presented in both oral and written form at the end of the 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 699L INTERNSHIP
0, 0/0

CNS 721 THESIS/PROJECT CONTINUATION
0, 0/0

CNS 722 THESIS/PROJECT EXTENDED
0, 0/0