ITP __ International Training Projects

2016 -2019 ITP - INTERNATIONAL TRAINING PROJECTS PROGRAM SHEETS

ISCR – Istituto Superiore per la Conservazione ed il Restauro
Via di San Michele 25, Roma

Course title: **PREVENTIVE CONSERVATION IN ARCHAEOLOGICAL CONTEXTS** **N°1**

Advanced level

Theoretical course

Coordinator: Maria Concetta Laurenti

Scientific Coordinator: To be named

Course objective

To provide in-depth theoretical and methodological education on issues in the preservation of archaeological areas and open-air properties, particularly concerning: i) systems of temporary, seasonal and long-term protection through reburial or structural coverage, and ii) monitoring system for the control of conservation.

Training offered

"Preventive conservation" refers to the removal or reduction of the environmental factors that can damage heritage properties. The concept is a development of the pioneering theoretical work of Cesare Brandi, and is applied in both the conservation of monuments and museum collections.

The modern philosophy of "in-situ" conservation requires a mix of case-specific strategies, including restoration methods for the consolidation of the archaeological remains in their original location, and further provision of preventive conservation systems. The first step is scientific study and gathering of precise information on the environment and the characteristics of the materials to be conserved.

One of the current areas of research in the field of open-air archaeological areas concerns development of protective systems, such as structural covers and temporary reburial. The course will examine specific strategies and cases in this area.

"Programmed conservation" is a further strategy, referring to protocols for planned actions in archaeological areas, to be implemented based on regular monitoring and precise scientific documentation of the conservation conditions. The periodic actions of the maintenance programme limit the emergence of new degradation phenomena and ensure long-term benefits from the investments in restoration interventions.

The course will examine the Italian system of the "Risk Map of Cultural Heritage", used to monitor the conservation status of archaeological monuments and complexes. The compilation of the conservation records serves to identify the levels of vulnerability of the site. A further record is used to evaluate the effectiveness and adequacy of the structural protection.

Field of application

Open-air archaeological areas with significant decorative elements (mosaics, painted or unpainted plasters, stuccos, stone artefacts preserved in situ), earthen walls and/or other fragile archaeological evidence (stratigraphy to be left exposed, habitation floors, etc.).

Course level, prerequisites

Advanced theory course for archaeologists and conservators

For personnel responsible for site management and planning of interventions.

Duration: 1 week (8 hours per day), including classroom and field sessions.

Number of participants: 10

Instructors: To be named

Course title: **FIRST AID FOR ARCHAEOLOGICAL FINDS** **N°2**

Advanced Level

Theoretical Course

Coordinator: Maria Concetta Laurenti

Scientific Coordinator: To be named

Course objectives

To provide in-depth knowledge in the theory and methods of conservation during excavations, including planning of first interventions and protection of structural and archaeological remains.

Course subjects include:

- the chemical-physical characteristics of the materials composing excavated objects;
- degradation phenomena acting on the materials;
- procedures for documentation and preliminary investigation;
- procedures for lifting and processing a soil block.

The course assists in establishing the sharing of responsibilities between the archaeologist and conservator-restorer. Laboratory sessions include micro-excavation methods for raised soil blocks and the study of storage methods for the different classes of excavated materials.

Training offered

The archaeological excavation is essentially a destructive, traumatic moment. Increasing attention to the archaeological management of territory and context has led to greater awareness that the challenge of conservation begins at the moment of excavation. The fragility of excavated materials requires the preparation of first-response field operations, which can avoid damage due to the changing chemical-physical status of the objects as they are uncovered, exposed to the air, and handled.

"First response" refers to those conservation methods applied in the field to avoid damage to the objects following excavation and during their subsequent storage and management. The set of first-response operations includes measures for the on-site recovery and stabilisation of fragile objects, as well as interventions for the limitation of degradation in structural remains. Such operations represent a moment for joint consideration and planning by the archaeological and conservation disciplines.

The course illustrates the methods developed by the ISCR over years of excavations and training in habitation and funerary sites.

Field of application

Conservation of archaeological areas including significant decorative systems (stuccos, plasters, etc., either still in place or in state of collapse) and in funerary contexts with mixed materials.

Course level, participants and prerequisites

Advanced theory course for archaeologists and conservator-restorers;

For personnel with responsibilities for site management, planning of interventions, and training of personnel.

Duration

1 week including theory and laboratory sessions.

Number of participants: 10

Instructors: To be named

Course title: **METHODS AND MATERIALS FOR CLEANING MOVABLE PROPERTIES N°3**

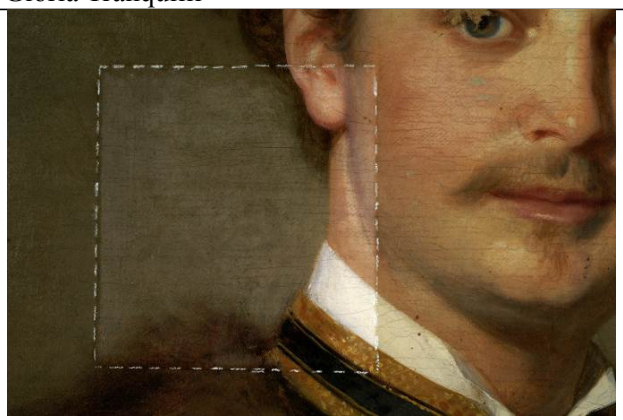
Advanced Level

Theoretical and practical course - Hands-on work with cultural properties

ISCR Laboratory for Paintings on panel and canvas, and polychrome wood sculpture

Coordinator: Francesca Capanna

Scientific coordinator: Gloria Tranquilli



Course objective

Professional updating in cleaning techniques: uses of new materials; updating on aqueous emulsions; water in oil (W/O) and oil in water (O/W) emulsions; uses of chelates and gels (Carbopol, Vanzan, Gellano, Agar-Agar and others).

Training offered

In the conservation of painted works, the term "cleaning" refers to operations to improve the perception of the image, where the presence of materials has altered and compromised its legibility. The activity presents inherent risks to the artwork. All actions must be monitored very closely, and the procedures chosen must adhere to principles of selectivity, controllability, gradualness, low toxicity, and the capacity for removal of the cleaning medium. Conservator-restorers must seek continuous professional development and updating to remain abreast of this vast area, mastering systems and methods to bring theory and practice together in their own applied work. The course provides qualified scientific support for those wishing to update their personal knowledge and skills, including through case studies in laboratory contexts. Participants will revisit the well-established concept of "minimum intervention", and improve their decision-making capacities in terms of both environmental and personal safety.

The course involves both theory and practical sessions, including cleaning tests of different materials with paintings on panel and canvas, and polychrome wood sculpture.

Field of application

Movable cultural properties.

Course level, prerequisites

Advanced theoretical and practical;

For conservator-restorers responsible for direct interventions on cultural properties, wishing to improve their knowledge in the cleaning movable properties.

Duration: 1 week, for a total of 47 course hours: 12 hours of theory lessons distributed and 35 hours of laboratory practice.

Number of participants: 10

Instructor: Enrico Fiorin

Course title: **TREATMENT OF WATERLOGGED ARCHAEOLOGICAL MATERIALS N°4**

Advanced Level

Theoretical course

Coordinator: Maria Concetta Laurenti

Scientific coordinator: To be named

Course objective

To provide an overview of conservation treatments for waterlogged organic materials, permitting the choice of the most suitable methods.

Training offered

Waterlogged materials are by nature extremely fragile. This theoretical course addresses the three fundamental phases in the conservation of such materials, necessary for positive results in conservation treatment:

- retrieval from the excavation site and conservation of the materials while awaiting restoration treatment;
- the restoration intervention, including presentation of the different consolidation methods currently practised;
- presentation of the potential drying methods.

Course level, number of participants, prerequisites

Advanced level theoretical course

Duration: 2 weeks

Instructors: To be named

Course title: **TREATMENT OF SCULPTURAL WORKS IN GYPSUM PLASTERS N°5**

Basic Level

Theoretical and practical course - Hands-on work with cultural properties

ISCR Moulds and plasters laboratory

Coordinator: Francesca Capanna

Scientific coordinator: Carlo Stefano Salerno

Course objective

To transfer the competencies, methods, theoretical and practical criteria for the conservation of works in plaster.

Training offered

The course is for conservator-restorers with interests in the fields of plaster sculpture and the techniques of mould and cast-making. In the first part, the participants will acquire knowledge of the materials used for sculptural works in plaster, the procedures for casting, and the techniques of execution and finishing. The second part provides a general review of the history and theory of restoration in the field, with attention to detailed issues ranging from the criteria for interventions to specific methodologies and techniques.

The practical training will take place at the ISCR laboratories, and will have as object of the work some gypsum model by Mario Rutelli realized for the Garibaldi's monument at the Gianicolo, in Rome. The participants will have the possibility to restore clean the surfaces of the gypsum plasters.

Field of application

Conservation of works in gypsum plaster; execution of moulds and casts.

Course level, prerequisites

Theoretical-practical course;
For conservator-restorers dealing with works in plaster;
For students in university-level restoration training programs and conservation-restoration personnel with responsibilities for direct interventions on cultural properties.

Duration

2 weeks

Number of participants: 3

Instructors: Dr.Carlo Stefano Salerno

Course title: **METHODS AND MATERIALS FOR INTEGRATION OF LOSSES IN CERAMIC MATERIALS** **N°6**

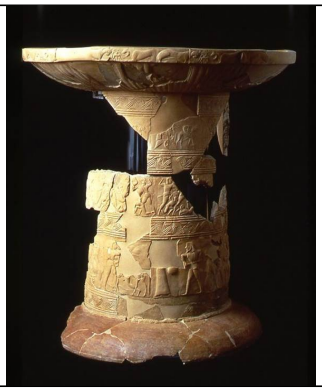
Basic Level

Theoretical and practical course - Hands-on work with cultural properties

ISCR Laboratory for Ceramics, glass and enamels

Coordinator: Maria Concetta Laurenti

Scientific coordinator: To be named



Course objective

To gain knowledge in the choice and use of materials for integration of objects with losses.
The choice of material for integration must deal with both structural considerations (weight and dimensions of the original object; potential additional supports) and the colour of the material with respect to the decoration and surface finish of the object. The objective is to direct the restorer in the critical choices of the integrative materials to be used for the specific object, considering its conservation status, the extent of losses, and the characteristics of surface finish.

Training offered

Course participants will study the different materials and methods used in the conservation and integration of losses for different types of ceramic objects.
The theoretical lessons will focus on the problems of losses and the potential materials for integration. The practical lessons will include laboratory exercises on different types of ceramic objects. There will be at least two visits to ceramics collections held by museums in Rome.

Field of application

Conservation and restoration of ceramic materials, particularly from museum contexts.

Course level, prerequisites

Primarily practical instruction.
For students with at least basic education in conservation-restoration.
Practical lessons are held in the ISCR Laboratory for Ceramics, glass and enamels;
Theory instruction is in the ISCR School of Higher Education and Study.

Duration: 2 weeks

Number of participants: 3

Instructors: To be named

Course title: **CONSERVATION TREATMENT OF LEATHER OBJECTS** **N°7**

Advanced Level

Practical course - Hands-on work with cultural properties

ISCR Laboratory for objects in leather and skin

Coordinator: Francesca Capanna

Scientific coordinator: Maria Bianca Paris

Course objective

To transfer the accumulated experience of the ISCR laboratory technicians to conservators wishing greater knowledge in the practical and operational aspects of the restoration of objects in leather and skin. Through research and long practice, the laboratory has developed substantial experience in materials and methods for the treatment of objects consisting largely or completely of leather and skin, including footwear, ethnographic containers and objects, and gilded and painted leather such as upholstery and altar antependia. The participants will be able to draw on the accumulated knowledge of the laboratory personnel.

Training offered

The course is offered to individuals with professional training and/or significant experience in conservation-restoration, having a specific interest in the conservation of leather and skin, and wishing to deepen their knowledge in the sector.

Each participant will carry out the restoration of at least one leather object from initial planning to completion of the intervention, including cleaning, consolidation, reintegration, options for mounting, and provisions for storage and display.

The instructors will provide guidance and assistance in the successive stages, including in the evaluation and choice of materials and procedures. The approach is primarily practical, however the theoretical choices for interventions will be discussed. The participants will receive instruction in the original techniques of execution and observation of the conservation status relative to their individual practice pieces. As the stages of the restoration proceed, emphasis will be placed on the necessary cooperation with other professions, such as historians, scientific experts, photographers and cataloguers/collections managers.

Field of application:

Restoration of leather and skin.

Course level, prerequisites:

Practical course at intermediate/advanced level;

For restorers with professional education and/or significant previous experience and/or other specific interests in the restoration of leather;

For conservator-restorers with decision-making and operational responsibilities for direct interventions on cultural properties.

Duration:

8 weeks (25 hours per week, total of 200 hours)

Number of participants: 2

Instructors: Federica Moretti

Course title: **RECOVERY AND TREATMENT OF MURAL PAINTING FRAGMENTS** **N°8**

Advanced Level

Theoretical and practical course - Hands-on work with cultural properties

ISCR Laboratory for mural paintings and plasters

Coordinator: Francesca Capanna

Scientific coordinator: Maria Carolina Gaetani

Course objective

To transfer the competencies and experience of ISCR technicians, accumulated during numerous operations for the recovery of mural fragments from archaeological contexts and situations of collapse due to disasters and human causes.

Training offered

- A theoretical/practical internship, focused on the recovery of fragments from the "Baths of the Painted Stuccos" (a bath complex at a Roman suburban villa), resulting from excavations by the Department of Greek and Roman Archaeology and Art History, University of Rome 'Tor Vergata';
- Practice in the documentation, cleaning and recomposition of the recovered fragments, now housed in the Villa dei Sette Bassi (currently an educational worksite for students of the ISCR).

Practical activities in the laboratory and worksite will be supplemented by theoretical lessons on the techniques of wall-painting execution, the processes of degradation and the methodologies for intervention.

- Theoretical section:
  - An introduction to the archaeological site and description of the architectural decorations present;
  - General illustration of the main conservation problems of archaeological sites;
  - Description of the main operations for first intervention on the different materials of an archaeological worksite

- Practical section:
  - Completion of documentation and first measures necessary for fragments of painted plaster.

Field of application

Mural paintings conservation-restoration

Course level, prerequisites

Theoretical-practical course.

For conservator-restorers with previous experience in the sector;

For students in university-level restoration training programs and conservation-restoration personnel with responsibilities for direct interventions on cultural properties.

Duration: 4 week (25 hours per week)

Preliminary theory - 10 hours; Practical work - 120 hours

Number of participants: 3

Course title: **SURFACE CLEANING METHODS FOR ARCHAEOLOGICAL METALS N°9**

Mid Level

Theoretical and practical course - Hands-on work with cultural properties

ISCR Laboratory of metals

Coordinator: Maria Concetta Laurenti

Scientific coordinator: To be named


Course objective

To provide in-depth learning on the issues of cleaning of different metal surfaces in varying states of conservation.

Training offered

The course includes theoretical lessons on the principle factors of deterioration occurring in different archaeological environments: in ground, under water, and exposed to weather. The different environments result in potentially different stratigraphies of corrosion products on the main types of archaeological objects in metal: copper, iron, lead, gold and silver. The course will deal with the concept of the "original surface" of the objects and the principle indicators for its recognition within the corrosion stratigraphy. The concepts of patination and stable and unstable patina will be defined. The main methods of cleaning will be presented, in terms of classes of action (mechanical, physical, chemical and electrochemical), means of use, potential applications and limits.

In the practical laboratory sessions, participants will test and compare the results of the cleaning methods on portions of corroded objects presenting different states of conservation.

Field of application

Conservation-restoration of objects in metal and metal alloys.

Course level, prerequisites

Mid-level theoretical and practical;

For professional conservator-restorers.

Duration: 3 weeks (6 hours per day)

Number of participants: 3

Instructors: To be named

Course title: **MOSAIC CONSERVATION TREATMENT** **N°10**

Advanced Level

Theoretical and practical course - Hands-on work with cultural properties

ISCR Laboratory of mosaics and stuccos

Coordinator: Maria Concetta Laurenti

Scientific coordinator: To be named

Course objectives

- To obtain knowledge of the theoretical approaches, methodologies and techniques in the field of mosaics conservation, through classroom lessons and direct experience with the works.
- To acquire the main theoretical competencies concerning the technologies and techniques of mosaic execution, and the conservation of floor and wall mosaics.
- To be able to evaluate the state of conservation of a mosaic, recognising the different types of damage and the main causes of deterioration, in relation to the constituent materials, conservation environment and history of the specific mosaics under examination.

Training offered

The course is a **theoretical/practical** internship consisting of classroom lessons and laboratory and worksite experience with mosaic works, particularly from archaeological contexts. The lessons will be supported by the use of computerised and audiovisual materials. The internship includes visits to museums and archaeological areas.

The course begins with a theoretical section dealing with:

- techniques of execution and the constituent materials of floor and wall mosaics;
- deterioration phenomena;
- documentation methods;
- methods of conservation-restoration intervention.

Consideration will be given to the participation of the students in the practical laboratory activities of the 4th year of the ISCR School of Higher Education and Study Professional Training Programme, depending on the possibility of appropriate coordination with the Laboratory of mosaics and stuccos.
The students will carry out a direct intervention on a mosaic work.

In the case of detached mosaics, the students will consider their re-contextualisation in their original sites of origin. The intervention will be preceded by studies in the are of preliminary testing, choices of treatment products and operational procedures.

The practical stage of the course will include the involvement of one or more of ISCR Scientific instructors, for consultation and support of the diagnostic investigations for the specific works.

Field of application Conservation-restoration of wall and floor mosaics, both in situ and detached
Course level, prerequisites Students and graduates of university programmes in conservation and restoration, possessing advanced education in conservation of stone materials and decorated architectural surfaces, basic theoretical knowledge of mosaic techniques, and practical experience with stone or museum materials.
Duration: 2 weeks
Number of participants: 2
Instructor: The instructor will possess advanced professional training in the field of conservation of decorated architectural surfaces (ISCR degree), with an emphasis on skills and experience in the field of **conservation and restoration** of mosaic floor and wall materials in archaeological contexts, as well as experience in the provision of **education.** The instructor will provide education at the theoretical level and for the practical internships and applied laboratory activities of the students, supplementing the lessons with visits to archaeological sites and museums, for illustration of the issues addressed. The course is conducted under the technical-operational guidance of an ISCR coordinating scientist.

Course title: **METHODS AND MATERIALS FOR CONSOLIDATION OF MOVABLE PROPERTIES** **N°11**

Advanced level

Theoretical and practical course - Hands-on work with cultural properties

ISCR Laboratory for painted and unpainted wooden materials

Coordinator: Francesca Capanna

Scientific coordinator: Costanza Longo


Course objective

Professional updating in the issues of consolidation and methodologies of intervention on movable heritage, particularly painted wooden materials.

Training offered

Consolidation is the indispensable first operation in the safeguard of cultural heritage. This is particularly true in the case of paintings with wooden supports, given the characteristics of ageing, deterioration and the sensitivity of the wood and paint-layer materials to variations in temperature and humidity. Participants will study and practice the main methods of consolidation, updating their knowledge of newly formulated materials (both natural and synthetic origin), their techniques of use, and the systems of control for the intervention. The introductory section will deal with the recognition of the types of damages typical of painted wooden objects: defects in cohesion and adhesion, detachments, raised sections, with examination of example cases. This will be followed by explanation of the methodologies of intervention and the guidelines for operational choices.

The internship will cover a range of materials and techniques currently in wide use, with laboratory experience in the most recent variations in methods, as well as a review of the operational systems for emergency interventions and securing of movable painted objects. There will be both theoretical and practical components. The practical sessions will include treatment of cohesion and adhesion problems in panel paintings and wooden objects.

Field of application

Conservation and restoration of painted and unpainted wooden materials

Course level, prerequisites

Advanced theoretical-practical course;
For conservator-restorers responsible for direct interventions on cultural properties, who want to improve their knowledge of consolidation of painted works on wood supports.

Duration: 2 week: 12 hours of theory lessons distributed over 3 days; 35 hours of laboratory practice over 7 days

Number of participants: 4

Instructor: Federica Moretti

Course title: **METHODS OF STRUCTURAL RESTORATION FOR WOODEN SUPPORTS N°12**

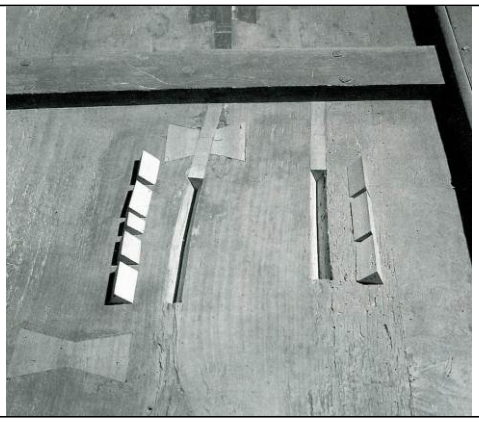
Basic Level

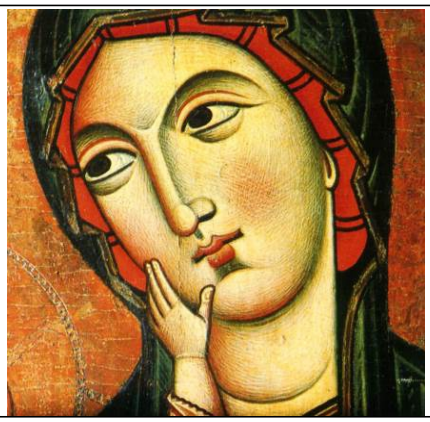
Theoretical and practical course - Hands-on work with cultural properties

ISCR Laboratory for panel paintings

Coordinator: Francesca Capanna

Scientific coordinator: Albertina Soavi





Course objective

To transfer the accumulated knowledge of ISCR technicians to conservator-restorers wishing greater knowledge in the treatment of wooden supports.

Training offered

Regardless of any issues revealed in diagnosis of a painted work, the conservator must consider the equilibrium of forces between the component elements, including the support. The forces and the resulting reactions are expressed in visible degradation, generally as deformations and openings in the paint layer. The current status is the result of equilibria in the different internal forces, resulting in equilibrium for the work as a whole. However in some cases the result can be continuous movement, rather than stability. Works in which the support was firmly fixed with glue and nails typically display cracks and/or disconnections. Due to the restrictions the support is unable to to free its stresses through lateral movement, and instead opens along the interior parts of its structure, thus liberating the accumulated tensions. The phenomena of cause and effect is direct and clear, however there may also be contributing causes, such as natural shrinkage, environmental conditions, or issues in the soundness of the glue.

The complexity, variety and specificity of the restoration operations for wooden supports require in-depth knowledge and skills, and the diversity of cases prevents any "automatic" response to a given diagnosis of the painting.

Practical exercises will be conducted on samples, to gain confidence with the instruments and working techniques for wood. Towards the end of the course the participants will carry out small interventions on original cultural properties.

Field of application

Movable cultural properties on wooden supports

Course level, prerequisites

Introductory theoretical and practical course;

For students and graduates of conservation-restoration programmes who want to advance their knowledge in methods of restoration for wooden supports.

Duration: 3 weeks:

- 2 days of theoretical lessons, including case studies of methods of intervention on works at locations in the Rome area;
- 13 days of laboratory lessons and practice.

Number of participants: 2

Instructor: Roberto Saccuman

Course title: **MATERIALS FOR INTEGRATION OF PICTORIAL LOSSES** **N°13**

Basic Level

Theoretical and practical course

ISCR Laboratory for painted and unpainted wooden materials

Coordinator: Francesca Capanna

Scientific coordinator: Marisol Valenzuela

Course objective

To transfer technical information and competencies regarding the theoretical criteria, methodologies and restoration materials for reintegration of the paint layer.

Training offered

The course reviews the retouching materials and methods currently used in the field of restoration. The theoretical part of the course will examine the different industrial preparations (Gamblin, Maimeri, Winsor & Newton), as well as the resins, pigments and binders available to restorers, reviewing the issues of composition, appearance and behaviour. The criteria for choice include questions of chemical stability, reversibility, aesthetic effect and toxicity. The participants will use samples of the materials for testing and comparison of results, and are encouraged to indicate problems and experiences from their own work.
The practical activities will be carried out on non-historic samples.

Field of application

Conservation and restoration of painted and unpainted wooden materials.

Course level, prerequisites

Introductory theoretical-practical course;
For students and graduates of university-level programmes in conservation-restoration, operating in paintings on panel and canvas, polychrome sculpture, etc.;
For conservator-restorers with responsibility for direct interventions on cultural properties.

Duration: 2 weeks
Availability: in association with the ISCR course on pictorial reintegration using *tratteggio* and *puntinato.*

Number of participants: 4

Instructor: Carmen Blanco

Course title: **CONSOLIDATION FOR SUPPORTS OF DOUBLE-SIDED CANVAS PAINTINGS** **N°14**

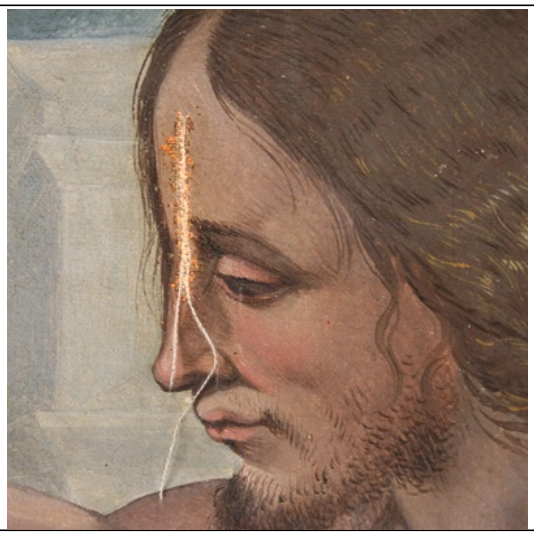
Advanced level

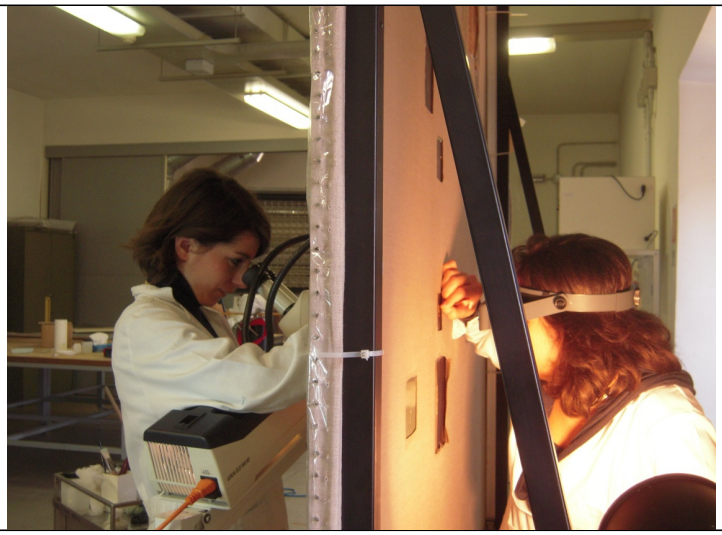
Theoretical and practical course

ISCR Laboratory for paintings on canvas

Coordinator: Francesca Capanna

Scientific coordinator: Carla Zaccheo





Course objective

To transfer the theoretical criteria, methodologies and competencies for the localised treatment of conservation problems in the conservation of textile supports for paintings, including information on restoration materials.

Training offered

In works such as banners and pennants, the extent of intervention can often be limited by concentrating actions on the localised areas of the lacerations in the support, generally caused by vandalism or gradual deterioration of the work.

The course is held in the ISCR laboratories for the restoration of paintings on canvas, and includes theoretical-technical lessons and practical exercises.

The course instructor is an expert in the discipline. Sections covered include the types of lacerations, the main problems related to laceration in paintings on fabric, and the techniques of restoration for cuts and lacerations. The course provides updates on the latest research in adhesives: evaluation of strength using the mechanical dynamomemeter, of stability and chemical reversibility, and of vulnerability to biological deterioration.

The practical sessions involved the execution of head-to-head suturing on non-historic laboratory samples of fabric, with preparatory and paint layers on both sides. Students will also apply the technique with historic works.

Field of application

Conservation-restoration of objects and works on textile support with preparatory and painted layers on both sides, where very-low or low impact intervention is preferred.

Course level, prerequisites

Advanced theoretical and practical;

For conservator-restorers with introductory education in restoration of movable paintings;

For conservation-restoration personnel with responsibilities for direct interventions on cultural properties.

Duration: 1 week.

Total course time of 35 hours consisting of 1 day of theory and 4 days of practical experience

Number of participants: 4

Instructor: Federica Cerasi

Course title: **CONSERVATION TREATMENT OF TEXTILE MATERIALS** **N°15**

Advanced level

Theoretical and practical course - Hands on work with cultural properties

ISCR Laboratory for textile objects

Coordinator: Francesca Capanna

Scientific coordinator: Silvia Checchi

Course objective

Technical updating in conservation-restoration of textile objects

Training offered

The course provides theoretical-practical education in conservation-restoration operations for two-dimensional textiles. The materials studied are from Italian museum collections, chosen to correspond to those of the participant's home nation.

The practical laboratory and worksite activities are supplemented by theoretical lessons on the original techniques of execution, the processes of degradation and the methodologies for intervention.

Field of application

Non-painted two-dimensional textile materials

Course level, prerequisites

Advanced theoretical and practical;

For conservator-restorers with intermediate to advanced experience in the textiles sector;

For conservator-restorers with responsibilities for direct intervention on cultural properties.

Duration: 8 weeks

Number of participants: 2

Instructor: Barbara Santoro

Course title: **TRATTEGGIO AND PUNTINATO TECHNIQUES IN CHROMATIC INTEGRATION** **N°16**

Basic Level

Theoretical and practical course

ISCR Laboratory for paintings on panel and canvas, polychrome wood sculpture

Coordinator: Dr. Francesca Capanna

Scientific coordinator: Dr.Francesca Fumelli

Course objective

Transfer of the underlying theories and the operating methods in reintegration of paintings

Training offered

Practical learning in the execution of *tratteggio*, the painting technique used to reconstruct the figurative units in areas of loss of painted images. The tratteggio system adheres to the theoretical principles of Cesare Brandi, founder of the Central Institute for Restoration (1939), as expressed in his book *Theory of Restoration*, and has been used by the ISCR since the 1950s. The system adheres to principles of recognisability and reversibility, and is developed in accordance with the principles of physics, optics and visual perception.

Puntinato is a system for recognisable reintegration of infilled surfaces on polychrome sculpture and three-dimensional objects. Puntinato is used to restore continuity to the formal and chromatic reading of three-dimensional painted or gilded surfaces. The technique consists in juxtaposition and overlaying of points of different colour, to obtain overall chromatic effects identical to that of the adjacent original surface. As for tratteggio, the system derives from the theoretical principles of Brandi, and achieves both recognisability and reversibility. It has been used by the ISCR since the 1990s.

The course is carried out using prepared supports with simulations of different problems in colour reintegration. It includes the execution of an infill with subsequent practice in integration.

Field of application

Movable cultural properties on wooden supports

Course level, prerequisites

Introductory/Mid-level practical course;

For university-level students in conservation-restoration of movable works;

For conservator-restorers with responsibility for direct interventions on cultural properties who want to improve their knowledge in methods of reintegration.

Duration

2 week

Number of participants: 5

Instructor: Dr. Paola Minoia

Course title: **BIODETERIORATION OF CULTURAL PROPERTIES** **N°17**

Basic level

Theoretical and practical course

ISCR Biology Diagnostic Laboratory

Coordinator: Dr. Annamaria Giovagnoli

Scientific coordinator: To be named

Training offered

Identification of the principle agents of biodeterioration acting on organic and inorganic materials in cultural properties:

- Ecological, structural and functional characteristics;
- Mechanisms of biodeterioration in different component materials under varying environmental contexts; Investigative methods and techniques;
- Types of organic materials;
- Control and prevention of biodeterioration.

Course structure

Week one (Monday-Friday 09:30-13:30)

- Basic biological aspects;
- *Biodeterioration of stone materials*: description of main agents and mechanisms of biological deterioration (heterotrophic bacteria, fungi, cyanobacteria, microscopic algae, lichens);
- For the different classes of agents: methods of investigation; products and methods for control of growth of micro-organisms; Guidelines for preventive conservation of cultural materials.

Week two (Monday-Friday 09:30-13:30)

- *Role of lichens, bryophytes and vascular plants in the deterioration of stone materials*: identification of mechanisms of biological deterioration; For the different organisms: products and methods for control of biodeterioration; Guidelines for preventive conservation;
- *Fibrous organic materials in cultural objects*: Techniques for identification of textile fibres and the more common species of animal skin.

Week three (Monday-Friday 09:30-13:30)

- *Wood and paper:* Organic materials of vegetable origin as constituent elements in artistic, historic and archaeological properties; Investigative techniques for characterization and identification of materials;
  Main problems of biodeterioration (including in painted objects);
  Methods of treatment and preventive conservation.
- Visit to a museum in the Rome area.

Field of application

Management and preservation of architectural, archaeological and movable properties in the context of their site or location.

Course level, number of participants, prerequisites

Introductory, theoretical-practical;

For students and professionals in the cultural heritage sector (conservator-restorers, architects, art historians, archaeologists, museum directors).

Duration: 2 weeks

Course title: **ECO-SUSTAINABLE RESTORATION: ALTERNATIVE SOLVENT MIXTURES N°18**

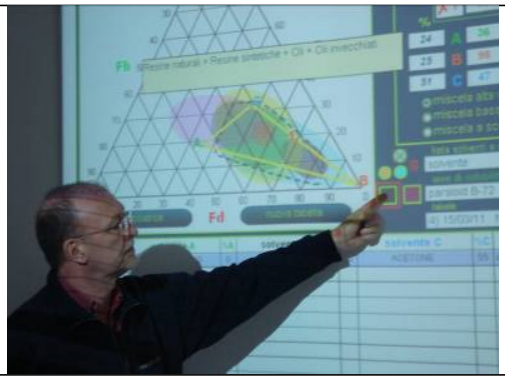
Advanced level

Theoretical and practical course

ISCR Chemistry laboratory

Coordinator: dr. Annamaria Giovagnoli

Scientific coordinator: to be named



Training offered: Aqueous solvent systems in the cleaning of works of art; comparison to traditional organic mixtures.
The course will provide information and education in the following topics:

- Safety and risk reduction;
- Effectiveness and interactions of materials and methods;
- Methods of intervention and control;

Adoption of materials and procedures compatible with eco-sustainable restoration - comparison of different methods for development of a coherent methodological approach.

Course structure:
Week one *(Monday-Friday 09:30-16:30)*

Chemical risks in restoration: prevention, protection and alternative methods

- Classification of organic solvents - volatility and retention; Risks of organic solvents - harm, toxicity, inflammability, parameters of control.

Choice among organic solvents in function of use, purpose and chemical risks

- Prevention and reduction of risks from organic solvents using general and individual protection.

Aggressive chemical agents - acids and bases; Prevention and reduction of risks. Dusts - characteristics and types, penetration and action; protective equipment.
Choice and use of protective devices

- Material safety sheets; Labelling of chemical products and mixtures; Compatibility among classes of products; Storage, collection and disposal of chemical products.

Minimisation of environmental pollution; risk of reactions among chemical products

Use of chemical solvents and mixtures in restoration

- Alternative to the use of toxic and carcinogenic solvents - formulation of mixtures using the Teas Solvents Triangle; Shifting from the static (Teas Triangle) to the dynamic programming model of the "Interactive triangle of solvents and solubilities";

Examples of use of the Teas Triangle in restoration; Examples of the dynamic "Interactive triangle of solvents and solubilities" model, in place of the Teas Triangle.

Aqueous systems in cleaning as an alternative to organic solvents and mixtures

- Chemical-physical characteristics of water;
- Parameters and methods of control for water used in restoration;
- Use of oxygenated water in the treatment of stone materials.

Mineral water - Reading the labels; differences from demineralised water; requirements for water used in restoration

- Use of enzymes in restoration - classification, requirements, conditions for use.

Removal of lime caseate (calcium caseinate) used as adhesive in the support of detached mural paintings

- Ion-exchange resins - Classification, requirements, conditions for use, methods of control;
- Chelates- Classification, requirements, conditions for use, methods of control.

Comparison of ion-exchange resins and chelates for the removal of corrosion products from metal objects

Use of triammonium citrate in the cleaning of contemporary artworks

- Aqueous CO_2 solutions - chemical-physical parameters, use and methods of control.

Comparison of aqueous CO_2 solutions and traditional methods for the removal of carbonatic concretions

- Basic saline solutions - characteristics and use of ammonium carbonate and bicarbonate.

Examples of the use of ammonium carbonate and bicarbonate solutions

- Use of tensoactives, gels and supports - classification, preparation, parameters of use, advantages and limitations.

Field of application:
All sectors of conservation-restoration of cultural heritage.

Duration: 1 week (30 hours)

Number of participants: 8

Instructor: to be named

Course title: **ADHESIVES AND CONSOLIDANTS FOR PAINTED OBJECTS AND POLYCHROME SCULPTURES** **N°19**

Basic level

Theoretical and practical course

ISCR laboratory

Coordinator: Annamaria Giovagnoli

Scientific coordinator: to be named

Training offered

An internship in the chemical and physical properties of adhesives and consolidants used in painted works and painted wooden sculptures.

Theory

The theory section deals with the general properties of adhesives and consolidants of natural, synthetic and semi-synthetic origins. Participants will study the criteria for choosing between the different products available on the market.

- Main characteristics and properties of thermoplastic resins in aqueous polymeric solutions and emulsions - viscosity, molecular weight, properties of gels, thixotropy;
- Criteria for the use of consolidants in conservation and restoration of paintings and wood sculpture;
- Classes of organic polymers used as adhesives, consolidants, and densifiers;
- Understanding the properties of polymeric materials - critical reading of product technical sheets;
- Correlation of the chemical, physical and rheological properties of adhesives and consolidants - evaluation of the descriptive parameters significant to performance.

Practical sessions

Laboratory preparation of polyacrylic acid gels, cellulose ethers, gellan gum and densifying solutions for polymers; Analysis and characterisation of the physical-mechanical properties of adhesives and consolidants using experimental laboratory testing;
Case studies and analyses of restoration interventions using adhesives and consolidants.

Field of application

Conservation-restoration interventions for degraded materials requiring recovery of appropriate mechanical performance; Application and adhesion of elements for reinforcement of areas with loss of mechanical resistance; Readhesion of detached original components and/or adhesion of new inserts in sculptures; Consolidation of textile and wood supports.

Course structure

Week one (Monday-Friday, 09:00-17:00)
Classroom theory sessions (morning and afternoon)
Week two (Monday-Friday, 09:00-17:00)
Classroom theory sessions (morning) Chemistry and physics laboratories (afternoon).

Course level, number of participants, prerequisites

For conservator-restorers, scientists (chemistry, physics, biology, materials science), and technicians in diagnostic analysis of heritage materials.

Duration: 2 weeks (70 hours)

Number of Participants: 4

Instructors: to be named

Course title: **CONSERVATION OF UNDERWATER ARCHAEOLOGICAL HERITAGE N°20**

Advanced level

Theoretical course

Coordinator: Dr. Maria Concetta Laurenti

Scientific coordinator: Dr. Barbara Davidde



Course objectives

The management of underwater sites and conservation of underwater archaeological heritage are areas of increasing attention. The UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage establishes that the preferred option is the in-situ conservation of underwater archaeological heritage, rather than excavation and the removal of the objects.

In 2001, the ISCR initiated a programme for the research and development of instruments, materials, methodologies and techniques for the in-situ restoration and conservation of submerged archaeological materials.

The course objective is to introduce issues and provide indications on the conservation of underwater archaeological heritage, including methods of underwater excavation, techniques of recovery and first-response interventions, and the methods, materials and instruments for conservation-restoration in underwater situations.

Training offered

Theoretical classes in the following topics:

- Introduction to underwater archaeology;
- Techniques of underwater excavation and recovery;
- Materials and methods for in-situ protection of submerged cultural heritage;
- In-situ conservation of wrecks, movable properties and submerged archaeological structures;
- Education in underwater heritage; formation of the technical-scientific personnel necessary for the preservation and development of underwater sites;
- Protected marine areas; new perspectives in protection, conservation and development of submerged archaeological heritage.

Field of application

Management and conservation-restoration for submerged archaeological sites, protected marine areas and submerged archaeological parks.

Course level, prerequisites

Intermediate/Advanced theory course;

For students, graduates and professionals in conservation-restoration, architecture, heritage management and museum curation.

The course includes visits to museums and archaeological areas holding material from underwater sites, and to laboratories conducting interventions on the materials from the excavations.

Duration: 2 weeks

Number of Participants: 10

Instructors: to be named

Course title: **USE OF LASER TECHNOLOGIES IN CLEANING** **N°21**

Advanced level

Theoretical and practical course - Hands-on work with cultural properties

ISCR Materials testing laboratory

Coordinator: Annamaria Giovagnoli

Scientific coordinator: to be named

Training offered

Laser technologies show great promise for application in cleaning of cultural properties: one of the most complex stages of the cycle of conservation-restoration interventions. "Cleaning" refers to the removal of material accumulated on the surfaces of the object, in potentially stratified form.
The course objective is to transfer knowledge in the research and development of laser applications in the field of restoration. Through study in theory and practice, participants gain knowledge of the current potentials and limits in the application of laser technologies in the cultural heritage sector. Practitioners should be able to identify all aspects that could hinder the achievement of the intended objectives. The results observed should lead to immediate correction in aspects that present anomalies or could be reason for subsequent evaluation and monitoring of the activity.

Course structure

Monday-Friday, 10:00-14:00
Principles of laser cleaning;
Process dynamics;
Laser-material interactions (between cleaning systems and surfaces, such as pigments, depositional crusts);
Laser systems and operating parameters;
Absorption and scattering;
Laser cleaning applications;
Case studies.

Field of application

The application of lasers is now widely accepted in cleaning of stone surfaces, characterised by coherent constituent materials. The situation is more complex for objects presenting mixed materials, such as the pigments and binders of paintings. The differences between the paint layer and the overlying materials, such as varnishes or protective films, require variations in control over the operating parameters and conditions, which must be developed on a case-by-case basis in function of different variables, such as the thickness of the film to be removed, pigment characteristics, support type, characteristics of the paint layer.

Course level, number of participants, prerequisites

Advanced theory and practice
Conservators, restorers, architects, technical-scientific personnel.
For training of conservation-restoration personnel in the use of laser equipment;
For training of scientific-technical personnel who support the use of laser through investigation, monitoring and verification of the effects of the radiation on the materials.

Duration: 2 weeks

Number of Participants: 10

Instructors: to be named

Course title: **ECO-SUSTAINABLE RESTORATION: USE OF AQUEOUS CO2 SOLUTIONS**

N°22

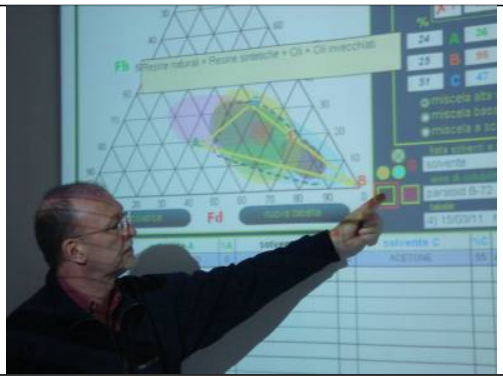
Advanced level

Theoretical and practical course

ISCR Chemistry laboratory

Coordinator: Annamaria Giovagnoli

Scientific coordinator: to be named



Training offered

Aqueous CO_2 solutions are an option free of environmental and health hazards for applications in removal of carbonatic concretions from cultural materials. The course compares them to other chemical methods (chelates, basic salts, ion-exchange resins, gels and other supports, tensoactives and organic solvent mixtures), providing in-depth knowledge on the parameters of use, advantages and limits of application.

The course is for professionals seeking deeper knowledge in the preparation and application of aqueous CO_2 solutions, the features of different cleaning methods, and aspects of use relating to heritage properties, restoration personnel and the environment. The comparison of different methods permits the development of a coherent approach to adoption of materials and procedures compatible with eco-sustainable restoration.

The course provides an introduction to the following topics:

- Methods of removal of carbonatic-matrix concretions;
- Effectiveness and interaction of products in application to historic-artistic properties;
- Methods of control.

Course structure

Week one (Monday-Friday 09:30-16:30)

Aqueous CO_2 solutions (free of environmental and health hazarrds) in the removal of carbonatic-matrix concretions:

Chemical-physical principles;

Installation of CO_2 generators in laboratories and worksites;

Methods of intervention and control in treatment of metals and natural and processed stone materials (marble, tuff, travertine, etc.; mural paintings, plasters, mosaics, ceramics);

Chemical risks in restoration: prevention, protection and adoption of alternative methods

Classification of organic solvents - volatility and retention; Risks of organic solvents - harm, toxicity, inflammability, parameters of control.

- Aggressive chemical agents - acids and bases; Prevention and reduction of risks.
- Dusts - characteristics and types, penetration and action; protective equipment.
- Material safety sheets; Labelling of chemical products and mixtures; Compatibility among classes of products; Storage, collection and disposal of chemical products.

Use of chemical solvents and mixtures in restoration

Aqueous systems in chemical cleaning

- Chemical-physical characteristics of water; Parameters and methods of control for water used in restoration; Use of oxygenated water in the treatment of stone materials.
- Ion-exchange resins - Classification, requirements, conditions for use, methods of control

- Chelates- Classification, requirements, conditions for use, methods of control
- Aqueous CO_2 solutions - chemical-physical parameters, use and methods of control

Comparison of aqueous CO2 *solutions* and traditional methods for the removal of carbonatic concretions

- Basic saline solutions - characteristics and use of ammonium carbonate and bicarbonate
- Use of tensoactives, gels and supports - classification, preparation, parameters of use, advantages and limitations

Methods of intervention and control

- Sampling methods in relation to investigative purposes: non-invasive monitoring; micro-destructive and destructive sampling ;
- Sampling methods and statistical analysis: significance, repeatability and comparability of results ;
- Rapid characterisation of constituent materials and alteration - standard ISCR methods and UNI-Normal recommendations;
- Chemical-instrumental monitoring of treatment materials (standard ISCR methods and UNI-Normal recommendations), before and during the intervention, using conductimetry, pH monitoring and microchemical tests (preparation and application of aqueous solutions of basic salts, chelates, tensoactives, gels and supports, ion-exchange resins, aqueous solutions of CO2);
- Instrumental monitoring of the surfaces before, during and after the conservation intervention: conductimetry, pH monitoring, tristimol colorimetry, microchemical testing; UNI-Normal recommendations;
- Evaluation of experimental results for correlation of the visible observation of the status of surfaces conservation and the results of technical analysis and intervention projects.

Field of application

Conservation-restoration of of cultural objects with surface concretions of carbonatic-matrix material.

Course level, number of participants, prerequisites

Advanced theory and practice

Students, graduates and professionals in conservation-restoration, chemistry, architecture and archaeology.

Duration: 1 week (30 hours)

Number of Participants: 8

Instructors: to be named

Course title: **EFFECTS OF POLLUTION ON OUTDOOR PROPERTIES** **N°23**

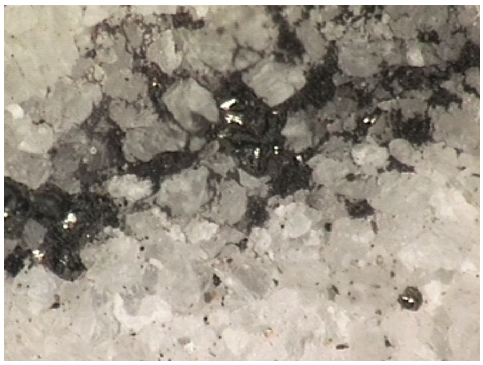
Advanced level

Theoretical and practical course

ISCR Testing Materials Laboratory

Coordinator: Annamaria Giovagnoli

Scientific coordinator: Annamaria Giovagnoli



Training offered

Over the past 100 years, atmospheric pollution has brought about a remarkable acceleration of materials exposed to the weather. Human activities have introduced notable quantities of new compounds into the atmosphere, which cause damage to the exposed materials through chemical interaction. Research has demonstrated a close relationship between the levels of atmospheric pollution, presence of products of alteration, and rapidity of deterioration.
The course imparts the theory of the study of degradation phenomena associated with atmospheric emissions and surface deposition. Practical instruction includes the areas of monitoring pollutants and measures and techniques for reducing the risks of environmental impacts on surfaces of cultural interest.

Course structure
Monday-Friday, 10:00-14:00
Primary and secondary pollutants;
Effects on surfaces, pollutant-material interactions
Strategies for evaluating impacts on surfaces of cultural interest
Architectural pathologies
Documentation of damages
Issues in intervention on exposed surfaces.

Field of application
Conservation-restoration of structures and works in open-air contexts

Course level, number of participants, prerequisites
Advanced theory and practice
Conservator-restorers, architects, technical-scientific personnel

Duration: 1 week

Number of Participants: 8

Instructors: Patrizia Bonanni, Raffaela Gaddi, Giovanna Martellotti, Doretta Mazzeschi, Annamaria Pandolfi, Iacopo Russo, Sofia Costanza Zaninotto.

Course title: GEOGRAPHIC INFORMATION SYSTEM FOR RISK ASSESMENT AND LEGAL LIMITATIONS **N°24**

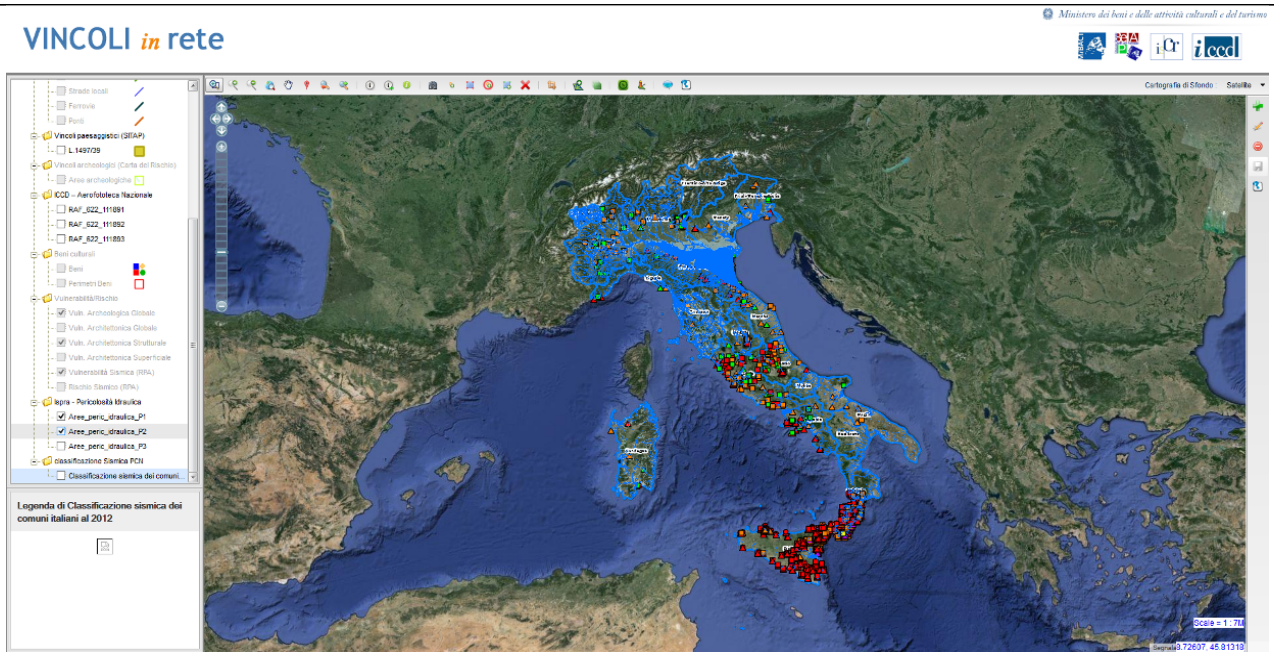
Advanced level

Theoretical and practical course

Territorial risk maps

Coordinator: Dr.Annamaria Giovagnoli

Scientific coordinator: Dr. Carlo Cacace



Training offered

Theory

The theoretical lessons are centred on the concepts of **Risk** (a criteria for the identification of operational priorities), **Territorial danger (P)** (a function indicating the level of potential aggression characteristic of a given territorial areas, independent of the presence of heritage properties , and **Individual vulnerability (V)** (a function indicating a given property's level of exposure to aggression by the territorial environmental factors, considering its current state of health).

Through the mapping of the geographic territory and the evolution in the understanding of risk, we can express Risk as a function of Territorial Danger and Individual vulnerability.

Participants will learn how to use GIS technologies (Geographic Information Systems) to prepare risk maps. GIS is particularly suitable because it permits the visualisation and analysis of the phenomena in map form, and the production of risk maps of national cultural heritage, with constant updating.

Practise

Production of examples of territorial risk maps on open-source software, including superimposition of cultural properties

and extraction of properties situated in high danger and/or risk zones; Production of record sheets on the vulnerability of the buildings; geo-referencing and cross-referencing with calculations of vulnerability and territorial danger.

The course also includes the option of developing a report with proposals for methods of developing risk mapping in the participants' home nation,

Field of application

Management and preservation of architectural, archaeological and movable properties in the context of their site or location.

Course level, number of participants, prerequisites

Prerequisite: Knowledge of archaeology or architecture, structural/building elements, and at least introductory knowledge of GIS

Course structure

Week one (Monday-Friday 10:00-14:00)

Course introduction;
Methodological aspects of the computerised mapping of risks and restrictions and system of protection for architectural and archaeological properties, as managed by the Ministry of Cultural Heritage and Activities and Tourism;
Cataloguing and Territorial danger;
Territorial danger and Environmental area;
Vulnerability concepts and the Risk Map.

Week two (Monday-Friday 09:00-17:00)

Methods of preparing ISPRA data
Preparing the "Vulnerability sheet" for a building
Completing the Vulnerability sheet
Insertion in the Risk Map
Use of open-source Quantum GIS
Use of the VIR system
Development of a report on potential developments in the participants' home nation.

Duration: 2 weeks

Number of Participants: 8

Instructors: Arch. Marta Acierno, Dott. Carlo Cacace, Arch. Maria Elena Corrado, Arch. Silvia Cutarelli, Dott.ssa Raffaella Gaddi - Ispra, Ing. Carla Iadanza, Arch. Antonella Negri, Ing. Daniele Spizzichino – Ispra, Dott. Alessandro Trigila – Ispra.

Course title: **PREVENTIVE CONSERVATION: THE ENVIRONMENTAL AND CONSERVATION RECORD SHEET** **N°25**

Advanced level

Theoretical and practical course

ISCR Physics and Materials Testing Laboratories

Coordinator: Annamaria Giovagnoli

Scientific coordinator: To be named

Training offered

The ISCR has developed the Environmental Record Sheet since 2001, using it with many Italian museums. The sheet serves in preparing an overall judgement on the environmental conditions in exhibition and storage areas, in relation to the conservation status of the specific heritage objects. It serves in the periodic checking of conditions, in preparations for temporary exhibitions and the shipping of objects, and as a long-term record of the conditions at a particular moment.
Environmental monitoring is conducted on a seasonal basis using portable instrumentation. The methods serve in identifying hazards arising from the environmental or structural features of the exhibition hall and reserves, as well as due to the management of the spaces.

Course participants will learn how to conduct examinations of the environmental conditions in their own museums, using the Environmental Record Sheet to collect relevant information, thus focusing attention on significant issues (state of HVAC and electrical systems, windows, doors; management etc). Participants will be able to carry out environmental monitoring using techniques and instruments not requiring advanced knowledge in preventive conservation.

Field of application

For conservation of museum collections in display and storage, and for all movable heritage held in built structures;
For conservation and management of museum collections, works in storage, and all movable heritage that may be transferred from its permanent location for temporary exhibition or other reasons.

Course level, number of participants, prerequisites

Advanced theoretical-practical course

The course is intended for those who manage museum collections and the spaces for their display and conservation:

- For museum directors, superintendents of cultural heritage and curators: the course includes sessions on general problems and strategies, and on decision-making supported by objective data.
- For conservator-restorers: the course provides instruments for deciding on the conservation of works, including in loan situations, and on the management of monitoring.

Course structure
Week 1 (Monday-Friday 10:00-13:00)
Introduction
Chemistry and physics of the environment
Why carry out environmental monitoring in museum spaces?
Monitoring in the home location of the object
The Environmental Record Sheet

Week two (Monday-Friday 10:00-13:00)
Monitoring: instruments, methods and parameters
Data collection and processing: significant parameters; evaluation of air quality and micro-climatic conditions
Environmental monitoring
Case studies

Duration: 2 weeks (30 hours), including visits to museums and storage areas
Number of Participants: 4
Instructors: Dr. Livia Gordini, Dr. Maria Pia Nugari

Course title: **PREVENTIVE CONSERVATION: HANDLING AND TRANSPORT OF ARTWORKS** **N°26**

Advanced level

Theoretical and practical course

ISCR Physics and Restoration Laboratories

Coordinator: Annamaria Giovagnoli

Scientific coordinator: to be named

Training offered

There are three main areas of concern in the movement of works for art for exhibition: packing, control over transport, and control over the exhibition of the work.

To expose the work to the least possible risk, different precautions can be adopted in both the packing methods and the control over transport and exhibition. The events during transport and exhibition can be documented using monitoring systems for both mechanical and temperature-humidity events. The course objective is to identify the critical factors in the conservation of the object, for decision-making concerning its transportability, and in case of accepting its movement, of the precautions necessary for reducing the risks during exhibition. The factors and decisions vary depending on the type of work and the evaluation of its technological, morphological and conservation characteristics.

Field of application

Conservation and management of museum collections, works in storage, and all movable heritage that may be transferred from its permanent location for temporary exhibition or other reasons.

Course level, number of participants, prerequisites

Advanced theoretical and practical

For personnel involved in decision-making about movement of works of art For museum directors and superintendents of cultural heritage (The course includes sessions on the general problems and strategies, and on decision-making supported as much as possible by objective data.)

For conservator-restorers (The course provides tools for deciding how to move the object and implement monitoring.)

Course structure

Week one (Monday-Friday 10:00-13:00)

Motives for requesting an object in loan - Regulationsa and management;

Examination of the object - Conservation aspects relevant to moving and transport;

Investigations in support of safe transport;

Environmental monitoring in the permanent location of the object;

Transport record sheet - Collection and documentation of relevant information.

Week two (Monday-Friday 10:00-13:00) Monitoring of transport - Parameters monitored, instruments and measurement methods; Gathering and processing data - Significant parameters, evaluation of the outbound transport; Environmental monitoring in the temporary exhibition location; Returning to the permanent location - Improving the packing, monitoring the inbound transport; Documentation of conservation condition at the close of the temporary exhibition process; Recording sheet for object transport; Case studies; Packing; Provision of security . **Obtaining information from transporter databanks.** **The course includes visits to museums and storage areas.**
Duration: 2 weeks (30 hours), including visits to museums and storage areas.
Number of Participants: 4
Instructors: to be named

Course title: **TECHNIQUES AND INSTRUMENTS FOR 3D DOCUMENTATION OF THREE - DIMENSIONAL PROPERTIES**

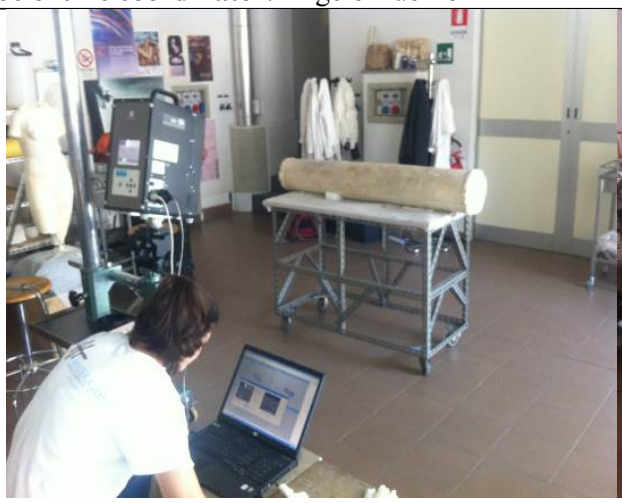
N°27

Advanced level

Theoretical and practical course

Coordinator: Maria Concetta Laurenti

Scientific coordinator: Angelo Rubino



Course objectives

Participants will gain knowledge of RTI techniques and creation of 3D models in the conservation-restoration sector, using technologically-advanced acquisition with both active and photographic systems. The aim of the documentation is gain the maximum possible visual knowledge of the object and to record the condition status in precise detail.

Based on their course experience, participants will be able to select among different methods and techniques for the recording of 3D models, and for documentation and archiving of the details of conservation-restoration interventions.

Training offered

The course provides the technological and methodological instruments for 3D modelling in the conservation-restoration field.

3D scanning refers to the creation of a three-dimensional digital model that faithfully represents the form and colour characteristics of an object. The 3D digital model is an accurate description of the surfaces of the object under examination. The process of creating the model is generally based on the use of laser or structured-light optical systems for the acquisition of many points of partial description of the object (range map), and then compounding the data in a single digital model composed of a point cloud, or more commonly of a set of traingles. The RTI or "variable light" system serves for the recognition of signs of working the object.

Field of application

Conservation-restoration, protection, communication and data management concerning all artistic-historic properties.

Course level, number of participants, prerequisites

Advanced level, for conservator-restorers, curators and students

The course is taught through theory lessons, supported by images, graphs and examples, and by practical exercises in recording data on conservation status and restoration interventions.

Duration: 2 weeks

Number of participants: 4

Instructors: Ferdinando Provera

Guest instructors: Matteo Delle Piane (Engineer, National Resarch Council), Danilo Salszano (Engineer, 3D Mesure), Albano Valentina (Architect).

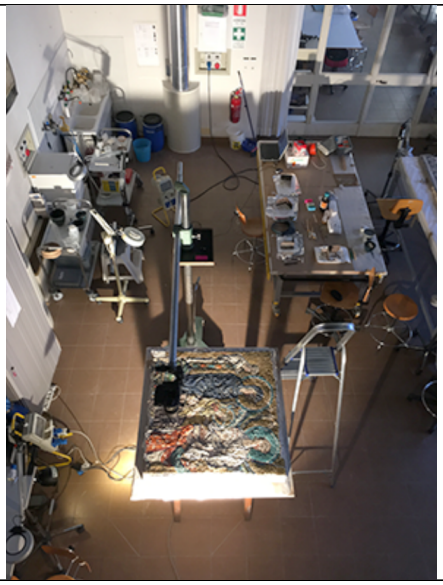
Course title: **PHOTOGRAPHY AND IMAGING TECHNIQUES IN CONSERVATION-RESTORATION** **N°28**

Advanced Level

Theoretical and practical course

Coordinator: Maria Concetta Laurenti

Scientific coordinator: Angelo Rubino



Course objectives

The course provides instruction in a range of advanced photographic methods used in conservation-restoration of cultural heritage, including editing and post-editing. Photography is studied as a means of gaining visual knowledge of the object and for precise recording of its conservation status, of the treatments implemented, and for archival recording of the intervention. The course also covers the basics of photogrammetery and integrated systems for recording and management of conservation-historical data.

Training offered

Participants will study HD,RTI, Multifocus and Virtual Tour technologies.

The course provides the technological and methodological instruments for photography in the conservation-restoration field. Based on their course experience, participants will be able to select among different methods and techniques of photography for recording images and documentation and archiving of the details of conservation-restoration interventions.

Field of application

Conservation-restoration, protection, communication and data management concerning all artistic-historic properties.

Course level, number of participants, prerequisites

Advanced level, for conservator-restorers, curators and students

The course is taught through theory lessons, supported by images, graphs and examples, and by practical exercises in recording data on conservation status and restoration interventions.

Duration: 2 weeks

Number of participants: 4

Instructors: Stefano Ciocchetti

Course title: **GRAPHIC DOCUMENTATION AND RECORDING OF CULTURAL PROPERTIES** **N°29**

Basic level

Theoretical and practical course

ISCR Documentation Service

Coordinator: Maria Concetta Laurenti

Scientific coordinator: to be named

Course objective

Learning in the organisation and implementation of the graphic documentation of a work of art, including through exercises of data collection, elaboration and simulation.

Training content

- Knowledge of the cultural property as the basis of its conservation;
- Systems of graphic documentation – fundamental instruments for the analysis of information obtained by morphological examination of the works;
- The reading of the work, guided by systemic documentation, as a fundamental stage in the study and planning of a restoration intervention.

The aim of the course is to impart the theoretical and practical knowledge necessary for the documentation of cultural properties. Participants will study the methods and practices applied by the ISCR for the thematic mapping of works, including systems for: recording the original techniques of execution, the current state of conservation, the progress of the restoration intervention.

Field of application

Analysis and knowledge of cultural properties, including architectural surfaces and movable works.

Course level, number of participants, prerequisites

Basic theoretical-practical course;
Maximum of 8 participants;
For technicians and graphic recorders engaged in the areas of conservation and preservation of cultural properties: graphic artists, assistant conservator-restorers, others. (The course is not intended for conservator-restorers directly engaged in interventions.)

Duration: 2 week (10 days, 6 hours per day)

Number of participants: 8

Instructors: to be named

Course title: **PLASTIC MATERIALS AND METHODS IN THE REINTEGRATION OF SUPPORTS AND PREPARATORY MATERIALS** **N°30**

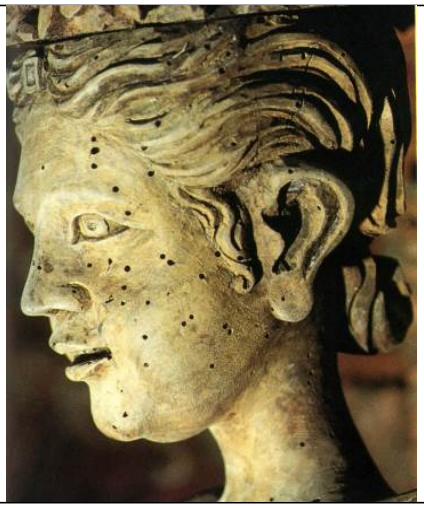
Advanced Level

Theoretical and practical course

ISCR Laboratory for painted and unpainted wooden materials

Coordinator: Francesca Capanna

Scientific coordinator: Marisol Valenzuela



Course objective

The course provides updating on the problems of plastic reintegration and the methods of intervention on three-dimensional objects in wood.

Training offered

In this sector, the conservation intervention is often conditioned by the fact that the wood serves not only as support, but also as an integral part of the image, defining the formal aspect of the work in complementary relationship with the painted layers. The course studies and laboratory sessions permit the participants to gain knowledge in and apply the main methods of intervention. The course opens with the identification and exemplification of the typical damages seen in wooden objects: losses, abrasions, pieces missing, disconnections. Students will study the intervention methods supported by the theories of Cesare Brandi, and the decisions to be made prior to their application. The course offers an overview of the materials and techniques for deep infilling (infill of damages and losses in the support) and in the decorated surfaces (simple preparatory layers; worked preparatory layers, such as pastiglia and other decorations).

Field of application

Conservation and restoration of painted and unpainted wooden materials.

Course level, number of participants, prerequisites

Advanced theoretical and practical

For conservator-restorers with at least two years of working experience;

For conservator-restorers with responsibility for direct intervention on cultural properties.

Duration: 2 weeks

Participants: 8 conservator-restorers

Instructors: Dr. Federico Salvatore