SAN GEMINI PRESERVATION STUDIES

(WVU) Syllabus for ARHS 453:
Professional Field Experience:
Restoration of Traditional Masonry Buildings in Italy*
3 Credit Hours
(SGPS) SG 201A – 3 Units

San Gemini, Italy, 2024
Session 1 (June 3 – June 28)
Lecture: Meets daily 8:30-10:15 (four weeks)

- (Meets before the ARHS 454 co-requisite lecture 10:30-12:15)

Workshop: Meets daily for four weeks from 2:00-6:00 for the workshop component.

- Students will be divided into two groups. Group 1 will meet in ARHS 453 (this course) and Group 2 will meet in the ARHS 454 co-requisite course. For the second two weeks 1, Group 1 and 2 will switch.

Instructor: Professor Valery Tovazzi
Email: valery.tovazzi@gmail.com
Office hours: on site TBA

***Must be taken with co-requisite:**
#SG209: Professional Field Experience: Sketching and Analyzing Historic Buildings

No Pre-requisite Required

Catalog Description:
Introduces students to restoration of natural and artificial stone surfaces in historic Italian buildings and structures. Through lectures and hands-on workshops, it explores traditional materials and techniques used to create buildings and artwork integral to their structure. It also examines the various agents of deterioration that, over time, damage the materials and the different approaches to their restoration and conservation.

Overview:
The course investigates traditional building materials including natural stones, different types of traditional mortars, decorative plasters and cements. The objectives for this course are to introduce students planning a career in restoration to the field, and to offer a useful overview of the process and problematic examples of restoration to students involved in other aspects of the process of conservation and historic preservation. This course is aimed at students of restoration and conservation, historic preservation, architecture, art, art history, cultural history, engineering, anthropology, archaeology and museum studies.

Student Learning Outcomes:
Students who successfully complete this course will be able to:

- Identify various stones, mortars, cements, and other building materials, their use in architecture, their physical properties, and appropriate restoration methods.

- Analyze materials and apply treatment methods to clean masonry surfaces.
- Assess, recommend, and treat architectural surfaces by consolidating, cleaning/removing the inappropriate materials, filling the gaps such as mortaring and repointing, protecting and carrying out an esthetical treatment, where necessary.

Format:
Morning Lectures: Monday – Friday, 8:30 AM – 10:15 AM (4 weeks)
Location: Piazza Vecchio in Palazzo Vecchio classroom

- Lectures are mostly dedicated to the presentation of building materials, historical technologies, and current best practices in conservation, with time discussion.
- Visiting lecturers will present various topics of interest to stone artifacts and historical building conservation.

Afternoon Workshop: Monday – Friday, 2:00 PM to 6:00 PM (2 weeks)

- As part of the course, students will be working on a field project
    - Past projects include:
        - Restoration of Porta Tuderte (Todi Gate), also known as Porta San Giovanni, 13th c
        - The Porta Burgi (Town Gate), 13th c.
        - Restoration of the Oratory of San Carlo, also known as the Church of Santa Maria Incertis, 13th c.
        - Restoration and Survey of San Giovanni Battista
        - Survey and Restoration of the Church of Santo Gemini

Required Materials (bring with you to San Gemini):
a) thick work gloves
b) steel toe construction boots
c) safety goggles

Summary of Lecture Content

Lithic Materials

Geological Formation

- Igneous rocks
- Sedimentary rocks
- Metamorphic rocks

Stone carving technology

- Materials
- Tools
- Working processes
- Traditional Uses in Architecture
- Traditional Uses in Art

Decay Processes

- Water/Moisture
- Wind
- Sun/Heat

- Pollution
- Biological attacks (Bio-deterioration)
- Anthropic causes

Ceramics

Materials
- Clays and aggregates

Production methods
- Firing
- Color
- Glazes

Uses in buildings and construction
- Structural
- Special surfaces
- Decorative

Decay process

Artificial Stones: Plaster and Mortars, Cements

Materials

Binders
- Gypsum
- Aerial lime
- Hydraulic lime
- Cement

Aggregates
- Natural sands
- Crushed stones
- Pozzolana
- Artificial
- Crushed bricks and others

Decay process

Restoration

Methods of restoration
- Consolidation
- Joining parts

Cleaning
- Chemical-
- mechanical action (misting water spray)

Filling gaps

Conservation and maintenance (prevention)
- Treatments
- Physical / Architectural preventive measures
- Maintenance

Recommended Readings

G. Torraca	*Lectures on Materials Science for Architectural Conservation*	The Getty Conservation Institute Los Angeles	Part. 2-3-4 (Read before going to SG)
Werner Schmid	*Graphic Documentation Systems in Mural Painting Conservation*	ICCROM ROME 2000	Chap. 2-3-4-7-9
Jean-Pierre Adam	*Roman Building: Materials and Techniques*	Routledge	Pg. 59-80 *
Angela Weyer	*Ewa gloss. European illustrated glossary of conservation terms for wall paintings and architectural surfaces Vol.17*	Michael Imhof Verlag	Entire book
Giovanna Martellotti	*Reconstructive Restorations of Roman Sculptures. Three Case Studies*		pp-179-189
Albert Philippot and Paul Philippot	*The Problem of the Integration of Lacunae in the Restoration of Paintings*		All chapter
Thomas Roby and Martha Demas	*Mosaics In Situ An Overview of Literature on Conservation of Mosaics In Situ*	The Getty Conservation Institute Los Angeles	Chapters from 2 to 5 (Read before going to SG)
Vicki Richards Jennifer McKinnon	*In Situ Conservation of Cultural Heritage: Public, Professionals and Preservation*	Flinders University Program in Maritime Archaeology	pp. 17-31;

* You do not have to purchase; there are copies in San Gemini.

Suggested Readings

Carola-Bibiane Schönlieb	*Partial Differential Equation Methods for Image Inpainting*	Cambridge University Press
Sharon Cather	*The Conservation of Wall Paintings*	THE GETTY CONSERVATION INSTITUTE
Costa, E., Santamaria, U.	*Binders for retouching systems in conservation: an overview and experimental tests*	
Cesare Brandi	*Theory of Restoration*	Istituto Centrale per il Retauro Nardini Editore

Grading

- **Participation in Field work:** Complete various assignments that are given as part of

the field project (35%)
    - Dependent upon the project, these may include: treating stone with biocide, cleaning stone, consolidation of stone where necessary, removal of inappropriate mortars, pointing stone work with hydraulic lime mortars, treatment of stone with sealers, applying washes where necessary.
- **Midterm Exam** Mixed format – multiple choice, short answer, and essay (30%)
- **Term Paper:** 8-page paper on a topic to be assigned (35%)
  Your paper will be evaluated on content, organization, and clarity.

Grading scale:
94-100 = A
90-93 = A-
87-89 = B+
84-86 = B
80-83 = B-
77-79 = C+
74-76 = C
70-73 = C-
67-69 = D+
64-66 = D
60-63 = D-
Below 60 = F

Late Assignment Policies
Unexcused late assignments will be marked down one-half letter grade. Students should discuss with the professor *beforehand* any reason for anticipated late submission and specify when submission will occur.
Fieldwork cannot be made-up.

Course Calendar

Date	Day	Lecture 8:30 - 10:15 AM	Lecture 10:30 -12:15	**Afternoon 2:00 - 6:00** Fiel work
6/2	Sun			Orientation; welcome dinner
6/3	Mon	Brief Historical Overview of Umbria	Urban Evolution of San Gemini *Cardillo*	Visit to Roman city of Carsuale 3:00PM-7:00PM
6/4	Tue	Introduction (general plan of the lectures) Stone – Geological formation *Tovazzi*	Describing Buildings *Cardillo*	Field Work *Tovazzi* Safety on the worksite All program A students
6/5	Wed	Stone – Working technology: formation of rocks *Tovazzi*	Physical and Historical Analysis of Buildings (San Giovanni Battista) *Cardillo*	Field Work – *Tovazzi* Group II Introducing students to tools and working materials

6/6	Thu	Stone – Working technology: tools *Tovazzi*	The shape of Italian cities - The classical world	Field Work – *Tovazzi* Group II
6/7	Fri	Ceramics—uses in Architecture *Lorenzetti*	Architectural Ceramics Technical Features, *Lorenzetti*	Field Work – *Tovazzi* Group II
6/8	Sat	No class	No class	No class
6/9	Sun	No class	No class	No class
6/10	Mon	Stone – Working technology: methods *Tovazzi*	Shape of the Italian city – Middle Age *Cardillo*	Field Work – *Tovazzi* Group II
6/11	Tue	Stone – Historical data about marbles *Tovazzi*	Shape of the Italian city - The Renaissance *Cardillo*	Field Work – *Tovazzi* Group II
6/12	Wed	Stone – Decay: agents of decay *Tovazzi*	Building Structural System *Cardillo*	Field Work – *Tovazzi* Group II
6/13	Thu	Stone – Decay: alterations and degradations *Tovazzi*	(visiting lecturer) TBD	Field Work – *Tovazzi* Group II
6/14	Fri	Visiting Lecturer TBD	Italian building types Cardillo	Field Work – *Tovazzi* Group II
6/15	Sat	No class	No class	No class
6/16	Sun	No class	No class	No class
6/17	Mon	Stone – Decay and restoration principles *Tovazzi*	Italian building types Cardillo	Field Work – *Tovazzi* Group I *Change of Groups*
6/18	Tue	Stone – Restoration techniques *Tovazzi*	Italian building types Cardillo	Field Work – *Tovazzi* Group I
6/19	Wed	Stone – Restoration techniques *Tovazzi*	Historic Building Materials *Cardillo*	Field Work – *Tovazzi* Group I
6/20	Thu	Stone – Restoration techniques *Tovazzi*	Traditional Construction methods Foundations *Cardillo*	Field Work – *Tovazzi* Group I
6/21	Fri	Mold making – Restoration techniques *S. Oliveti*	Visiting lecture TBD	Field Work – *Tovazzi* Group I
6/22	Sat	No class	No class	No class
6/23	Sun	No class	No class	No class
6/24	Mon	Artificial stones – Mortars and plasters *Tovazzi*	Traditional Construction methods Wall and Vertical Structures *Cardillo*	Field Work – *Tovazzi* Group I

6/25	Tue	Artificial stones - Binders and aggregates *Tovazzi*	(visiting lecturer) TBD	Field Work – *Tovazzi* Group I
6/26	Wed	Fresco – Restoration: ethical and methodological aspects *Tovazzi*	Traditional Construction Methods Floors , Roofs *Cardillo*	Field Work – *Tovazzi* Group I
6/27	Thu	Fresco - Restoration: technical aspects *Tovazzi*	Traditional Construction Methods - Interior Finishes Walls, Floors , Ceilings *Cardillo*	Field Work – *Tovazzi* Group I Evening: Goodbye Dinner
6/28	Fri	Visiting Lecturer TBD	Preservation as a Social process Strategies for conservation of cultural Heritage *Cardillo*	Field Work – *Tovazzi* Group I Cleanup