



## KIIS ITALY Program, Winter 2022-2023

### CHEM 101 Introduction to Chemistry: Chemistry and Art

**Instructor:** Dr. Rosalynn Quiñones

**Email:** quinonesr@marshall.edu

**Instructor's office hours:** on site and by appointment

*Syllabus subject to change*

**1. Course Description:** This 3-credit course is designed for chemistry and science majors. We will study the interaction between chemistry and art in a study abroad experience in Italy. Daily activities will consist of field trips to art galleries, museums and a restoration laboratory, geographical features, and a "hand on" experience painting a fresco. Our attention centers on Florence and Rome, in coordination with the program itinerary. In lectures and discussions, we will examine some basic principles of light, color, and chemistry. These principles will be used to investigate artists' materials including pigments, dyes, solvents, and native metals used during the Italian Renaissance. Following this description, causes of deterioration will be explored. Scientific methods to analyze works of art including microscopic analysis and techniques using X-rays, ultraviolet, and infrared light will be introduced. Finally, conservation and restoration topics will be addressed with particular focus on paintings in Rome. Required readings include art restoration and primary Renaissance sources. Through discussions and written assignments, students will develop critical thinking skills.

### 2. Overall KIIS Program Student Learning Outcomes:

KIIS Study Abroad Mission Statement:

KIIS provides high-quality education abroad programs for students from all diverse backgrounds that promote deep international learning, are integrated into the curriculum, and encourage critical and creative thinking. Our goal is to help students understand the wider world and develop personal and professional skills for lifelong enrichment. We strive to go beyond generalizations and cultural stereotypes to help foster a nuanced appreciation of the world in which we live.

Students participating on KIIS study abroad programs aim to:

- 1) Understand contemporary issues of their host country/countries (i.e. KIIS program location).
- 2) Develop skills to interact comfortably in a global setting.
- 3) Understand other cultures.

Prior to your KIIS study abroad program, and again at the conclusion of your program, KIIS will ask each student to a) answer a few multiple-choice questions, and b) write a short reflective essay (two paragraphs in length) related to the elements detailed above. There is no right or wrong answer, and your responses will not affect your grade in any way. The purpose of the exercise is to help KIIS measure the effectiveness of its study abroad programs.

### 3. Course Objectives and Specific Learning Outcomes:

1. Students will acquire a general background in chemistry and other relevant areas of science
2. Students will develop a basic understanding of analytical issues concerning chemistry and how it can be related to art.
3. Students will obtain, utilize, and assimilate information from the body of work known as the chemical literature.
4. Students will understand through first-hand experience some basic art design by creating a fresco.
5. Students will explore how to prepare medicine and perfumes in one of the oldest pharmacy in the world.

#### 4. Major Topics covered in the Course:

##### TENTATIVE SCHEDULE

Lecture 1: Properties of light and color

Lecture 2: Beginning chemistry

Lecture 3: Materials used by Italian artists between 1300 and 1700 such as polymers, binders, ceramics, and pigments

Lecture 4: Methods used to analyze works of art

Lecture 5: Techniques used for cleaning works of art

Lecture 6: Case studies of art restorations

Hand-on experiences:

- Fresco painting at Vecchio Palace (Florence)
- Art restoration workshop (Rome)
- Leather workshop at Ali Workshop Firenze (Florence)(optional)
- Galileo museum workshop (Florence)

*\*Class will include additional group excursions listed on KIIS website\**

##### Online Resources:

<http://www.webexhibits.org/>

<http://www.visual-arts-cork.com/colour-in-painting.htm>

<http://www.webexhibits.org/pigments/>

##### Changes Disclosure:

The included schedule of class assignments and events is tentative and subject to change. Any changes announced during the program supersede the contents of this outline. When possible, two days' notice will be given when a date for a graded assignment is changed. It is **always** the student's responsibility to keep abreast of changes to the syllabus.



pubs.rsc.org

**5. Fulfillment of General Education Requirement:** This course fulfills the science requirement for Marshall University and may do the same at other schools. The course may also be taken for science major credit (please contact the professor for science major requirements).

## 6. Required Readings and Materials:

### Study Material

Required readings and PowerPoints will be made available electronically and in hard copy. Readings must be completed by the dates given in the syllabus.

A WebSpace *Dropbox* will be utilized in this class. Please check your *Dropbox* regularly before leaving to Italy. Your homework, resources, useful websites, grades, and announcements will be posted there.

### Textbooks:

Students will be expected to read the following books prior to and during the study abroad experience. The science textbooks (1, 2) were written for conservators who have no prior chemistry training.

1. The Conservation Unit of the Museums and Galleries Commission. Science for Conservators Vol. 1: An Introduction to Materials, 2nd ed.; Routledge: New York, 1992.
2. The Conservation Unit of the Museums and Galleries Commission. Science for Conservators, Vol. 2: Cleaning, 2nd ed.; Routledge: New York, 1992.

## 7. Graded Assignments:

**Journal Assignment.** Each student must complete daily Journal Reflections (starting from the day of your travel to Italy) each of approximately one page. The Journal Reflections must draw connections between the scientific and art ideas. The final reflection, due prior to the departure from airport, is to explore how the course will help individuals to better understand the relationship between science and art. Daily journaling will be based on key features and concepts; these will range from observation to responding to an experience. This journal will be part of the assessment of this course. The Journal Questions are keyed to the travel experience and connect the course material to the site visit experiences. Questions focus on the relevance of art for the scientists at the time and, where relevant, to the current culture. The journals will be handed in for grading at the beginning of the longer bus trip and promptly returned to provide feedback. Students will need to buy a composition notebook to make class annotations before departure of USA.

**Quiz.** Background and lecture objectives will be assessed by a quiz (20 points- 5 quizzes total). Quizzes missed due to unexcused absence cannot be made up.

**Class Assignments.** Class assignments will be given daily assignments to complete prior to lecture. Either worksheets, presentations, answering questions with short answers or math questions will be utilized to assess your knowledge in the class topics.

**Participation.** Group discussions will be scheduled daily to ensure active learning for all students. Students are expected to attend every class and to participate in out-of-class activities as directed by the instructor. Attitude: students must be willing to remain open-minded to cultural differences. In- class participation and participation in the field trips are highly recommended.

### Course Point Allocation

Daily journal	100 pts
5-Quizzes (20 points each)	100 pts

Class assignments	<b>300 pts</b>
Student attitude/ Participation	<b>50 pts</b>
<b>Total</b>	<b>500 pts</b>

**Grade Scale**

<b>Grade Chart</b>	
100-90 %	A
89-80 %	B
79-70 %	C
69-60 %	D
59-0 %	F

**8. Attendance Policy:**

KIIS program participants are expected to be punctual to and in attendance at all classes, presentations, meetings and required excursions, and to remain with the program for the full academic period. Unexcused absences from classes and/or mandatory meetings will result in a lowering of the student's final grade, as will excessive tardiness. Multiple unexcused absences could result in expulsion from the program. Any absence from an academic class session must be excused for medical reasons.

**9. Disability Accommodation:**

KIIS will make every reasonable effort to provide accommodations for program participants with special needs or disabilities, but we cannot guarantee that we will be able to do so. Be aware that many foreign countries do not have comprehensive legislation comparable to the Americans with Disabilities Act (ADA). As a result, businesses and other establishments operating in foreign countries may not be able to provide accommodations.

If you have a disability accommodation need, we recommend you contact your KIIS Campus Representative, <https://www.kiis.org/about-kiis/contact-us/campus-representatives/> early in your program selection process so that s/he has time to discuss any specific needs, including which KIIS programs may be best suited. You also are welcome to contact KIIS Assistant Director, Maria Canning, [maria.canning@wku.edu](mailto:maria.canning@wku.edu), to discuss your disability accommodation needs (e.g. housing, transportation, excursions, class schedule, etc.).

Immediately after acceptance, notify KIIS Assistant Director, Maria Canning, or KIIS Admissions and Enrollment Specialist, Haley McTaggart, [haley.mctaggart@wku.edu](mailto:haley.mctaggart@wku.edu), if you have a special need or disability that might require any form of accommodation abroad. Failure to notify KIIS may prevent you from participating on your KIIS program.

If you require any accommodations abroad, you must provide KIIS Assistant Director, Maria Canning, or KIIS Admissions and Enrollment Specialist, Haley McTaggart, an accommodation letter from your home campus' disability accommodation office that lists the accommodations you are eligible to receive. Please do not request accommodations directly from your KIIS Program Director or other KIIS Faculty; the KIIS Office will notify your KIIS Program Director and/or Faculty after we have received your above accommodation letter.

In some cases, you may need to make arrangements for a caregiver to join you on your KIIS program, should your physician, campus disability accommodation office, or KIIS make such a recommendation or require it.

## **10. Title IX / Discrimination & Harassment:**

Recent attention to gender discrimination and sexual harassment at colleges and universities reminds us of the importance of adhering to standards of ethical and professional behavior. KIIS Study Abroad is committed to supporting and encouraging safe and equitable educational environments for our students, faculty, and program directors. Students, faculty, and program directors are required to be civil and treat each other with dignity and respect. As such, harassment and/or discrimination of any kind will not be permitted or tolerated.

Sexual misconduct (sexual harassment, sexual assault, and sexual/dating/domestic violence) and sex discrimination are violations of KIIS policies. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to a) KIIS Assistant Director, Maria Canning (+1-859-200-1000) or KIIS Executive Director, John Dizgun (+1-270-227-2288), b) WKU's Title IX Coordinator, Andrea Anderson (270-745-5398 / [andrea.anderson@wku.edu](mailto:andrea.anderson@wku.edu)) or WKU's Title IX Investigators, Michael Crowe (270-745-5429 / [michael.crowe@wku.edu](mailto:michael.crowe@wku.edu)) or Joshua Hayes (270-745-5121 / [joshua.hayes@wku.edu](mailto:joshua.hayes@wku.edu)). Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a KIIS program director and/or faculty member, KIIS program directors and faculty are considered "Responsible Employees" of Western Kentucky University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator.

If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's Counseling and Testing Center, <https://www.wku.edu/heretohelp/> at 270-745-3159.

For more information on KIIS Title IX, see <https://www.kiis.org/students/health-safety/title-ix-clery/>; additional Title IX resources can be found here <https://www.wku.edu/eo/titleixbrochure2020.pdf>.

Everyone should be able to participate on a KIIS program, attend a KIIS event, or work in a KIIS environment (e.g. KIIS office) without fear of sexual harassment or discrimination of any kind. Be respectful of each other.