

NOTE: THIS PROGRAM IS NOT CURRENTLY BEING OFFERED

UNIVERSITY OF ROCHESTER

SUMMER 2013 COURSE IN ITALY

THE ANCIENT ROMAN AQUEDUCT OF AREZZO

This course provides a unique opportunity to learn about and participate in a collaborative international research project aimed at tracing the route of the ancient Roman aqueduct of Arezzo, Italy. Little survives of the aqueduct above the ground surface today, and the goal of the study is to use geophysical, archaeological, and engineering research methodologies to establish the route of the aqueduct as well



as to understand better the history and technical features of the aqueduct. This is an excellent opportunity to work closely in a one-on-one setting with professional scholars and to participate in original interdisciplinary research while also receiving course credit and seeing a beautiful and interesting part of the world.

The course includes a pre-departure component in which participants receive instruction in the engineering of ancient Roman aqueducts and in geophysical prospection. The class then spends three weeks in Arezzo, where students learn



through hands-on work to carry out archaeological excavation and geophysical surveys with a magnetic gradiometer and ground-penetrating radar. In conjunction with the geophysical fieldwork, students learn data acquisition and processing basics, how to interpret results in a Geographic Information System (GIS) environment, and to evaluate the pros and cons of each method of geophysical prospection. Participants also learn about

the history and archaeology of ancient Arezzo through lectures, readings, and

guided museum and archaeological site visits. Participants live in the historic center of Arezzo, a small but vibrant city in Tuscany that has a rich cultural history stretching back to at least the sixth century BC. The program is focused on ancient Arezzo, but participants will also have the opportunity to explore modern Arezzo.

The project is sponsored by the University of Rochester and the Accademia Petrarca di Arezzo, in collaboration with the Soprintendenza per i beni archeologici della Toscana and the University of Southampton. Participants receive course credit from the University of Rochester's Department of Earth and Environmental Science or Department of Religion and Classics. Course credit can also be counted toward Rochester's interdisciplinary major in Archaeology, Technology, and Historical Structures. Enrollment priority will be given to students at the University of Rochester and other institutions in western New York who can attend pre-departure sessions in Rochester. If space is available and other arrangements can be made for inclusion in the pre-departure sessions (e.g. electronically), applications from prospective participants at other universities will also be considered.

Ancient Arezzo and Its Aqueduct

Arezzo, which first developed in about the sixth century BC, was in origin one of the most prominent cities of ancient Etruria. After falling into the orbit of Rome, Arezzo became, by the first century AD, the center of the largest and most



important pottery manufacturing industry in the Roman Empire. Cities of the Roman Empire were typically endowed with a basic infrastructure that included roads, bridges, a central forum or plaza, public buildings, and aqueducts, and, as an important city, Arezzo was certainly no exception. In the case of an aqueduct at Arezzo, however, there is little direct evidence: no ancient text records the presence of such a structure, and there are no obvious and undisputable extant physical remains.



Nonetheless, it seems likely that a city of Arezzo's stature would have needed and indeed had an aqueduct, and there is some physical evidence that may pertain to such a structure. Possible remains include a large underground cistern in the area of the ancient settlement and, in the city's hinterland, what may be part of a conduit bridge and isolated elements of Roman masonry and concrete. A possible water source has also been identified. Great lengths of Roman aqueduct channels were routinely directed underground, with no visible surface markers, and it is thus quite feasible that underground elements of Arezzo's aqueduct still exist even though the aqueduct as a whole is no longer readily evident.

Working from our current hypothesis concerning the route of the aqueduct based on engineering and hydrological requirements—that is, having identified an appropriate water source and, in general terms, a path that meets the engineering specifications of a structure that must move water along a very steady and gradual slope to a suitably elevated entry point into the city and very likely involved the presence of an extended inverted syphon—we are using geophysical and archaeological methodologies to test and

refine this initial hypothesis. The ground-penetrating radar and magnetic imaging studies focus on the identification of regular, man-made structures in the subsurface (and thus currently invisible) along the proposed path of the aqueduct. The archaeological component of the project includes: cleaning, inspection, and analysis of the possible remains currently known; intensive pedestrian survey as appropriate; and limited scale excavation of potential elements of the aqueduct (including those identified through geophysical survey) to uncover them and establish their technical functions and dates of construction. As we gain further

information about the path of the aqueduct through geophysical and archaeological means, we will refine our hypothesis about the route and functioning of the aqueduct in engineering terms.

Further reading on the ancient Roman aqueduct of Arezzo:

A. Ademollo (1989), “L’acquedotto romano di Arezzo” in *Atti e Memorie della Accademia Petrarca di Lettere, Arti e Scienze* 51: 215-228

Modern Arezzo

During their stay in Italy, participants will be housed in the Seminary of Arezzo, in the city’s historic center. Arezzo is located in the scenic and historical region of Tuscany, and the city itself has both a storied past and a vibrant present. The hometown of famous intellectuals such as Petrarch and Giorgio Vasari, Arezzo is filled with important artistic, architectural and historical monuments. It also has an active modern cultural scene, and visitors are regularly drawn there by its famous *Fiera dell’Antiquariato* (Antiques Fair) and the *Giostra del Saracino* (Saracen Joust). The historic center is easily navigated on foot, and program participants will enjoy exploring this beautiful and charming area both as a part of the program



and on their own. Participants do not need to have any knowledge of Italian, but those who have studied Italian will find that Arezzo, with its friendly atmosphere and small-town feel, is an ideal setting for practicing their Italian.

All services are readily available in Arezzo, and a number of small shops where essential supplies can be purchased are located near our lodgings. Many cafes and good restaurants serving local Tuscan fare are also in close proximity. Arezzo is an hour-long train ride from Florence, and it is also relatively close and well connected to other Tuscan cities such as Siena and Pisa.

Accommodations and Meals

Participants live in dorm-style accommodations, with one or two people in each room. Rooms are equipped with bathroom and shower. Breakfast and lunch are provided during the week. Breakfast is self-service, with milk, fruit, cookies, coffee, and tea available. Lunch is taken picnic-style in the field. Note that participants are responsible for their own dinner (with some exceptions) and meals on weekends. Participants will have access to a small shared kitchen. Occasional meals out are provided as a part of the program as well.

Academic Program Highlights

- Pre-departure lectures on the engineering of Roman aqueducts
- Pre-departure lectures on geophysical prospection
- Instruction on site in Italy and hands-on experience in geophysical prospection
- Instruction on site in Italy and hands-on experience in archaeological excavation
- On-site lectures about the archaeology of Arezzo and the surrounding area
- Visit to Arezzo's Museo Archeologico Gaio Cilnio Mecenate and the remains of Arezzo's Roman amphitheater
- Field trip to Cortona and visit to the Museo dell'Accademia Etrusca e della Città di Cortona
- Other visits to archaeological sites and cultural attractions in and around Arezzo as opportunities are available



Instructors and Collaborators

- Cynthia Ebinger, Professor of Earth and Environmental Sciences, University of Rochester
- Elizabeth Colantoni, Assistant Professor of Classics, University of Rochester
- Renato Perucchio, Professor of Mechanical Engineering, University of Rochester
- Derek Keir, Lecturer in Earth Science, University of Southampton
- Gabriele Colantoni, Adjunct Assistant Professor in the Department of Religion and Classics, University of Rochester
- Amedeo Ademollo, Accademia Petrarca
- Remo Chiarini, Studio Chiarini Associati and Accademia Petrarca

Program Costs

All participants must enroll in the course:

EES 298/CLA 301: The Ancient Roman Aqueduct of Arezzo. Six credit hours.

Estimated program fee: \$3800

The program fees include tuition and all expenses (room, board, program-related transportation within Italy, museum admissions) for the duration of the program, **with the exception of evening and weekend meals. Airfare to Italy is not included in the fee, and participants are expected to make their own travel arrangements to Italy.**

The actual program fees will be communicated to applicants once they have been officially established with the university administration.

Some limited scholarship money may be available for University of Rochester students with demonstrated financial need. UR students who have demonstrated financial need and wish to be considered for these scholarships should indicate their interest on the program application form. Scholarships will be awarded on the basis of merit within the pool of students with demonstrated financial need.

Program Dates

Meetings in Rochester: Saturday 27 April and Friday 3 May 2013

Fieldwork in Arezzo: Monday 17 June – Friday 5 July 2013

Participants are expected to arrive in Arezzo by the **evening of 16 June**, and they are expected to remain on the program until the **end of the work day on 5 July**.

Application and Enrollment

There are no pre-requisites for participation in the program: no previous experience is necessary, nor is any knowledge of Italian. Participants must, however, apply and be accepted to the program. Once accepted, participants must enroll in the course “The Ancient Roman Aqueduct of Arezzo” for six credit hours in either Earth and Environmental Sciences or Classics.

All participants will need a valid passport for international travel. Information about obtaining a U.S. passport can be found on the U.S. Department of State web page. U.S. passport holders do not need to apply for a special visa to participate in this program. Other regulations may apply, however, to prospective participants who are not U.S. citizens.

A copy of the **application form**, with instructions for submission, is available on the University of Rochester Program in Archaeology, Technology and Historical Structures web page.

Applicants may be contacted for an interview after they have submitted the application form.

Application Deadline: **Monday 15 April 2013. Space is limited, and early applications are encouraged.**

**For further information contact Professor Elizabeth Colantoni,
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