Syllabus
CSE 4GS: Mathematical Beauty in Rome
A UCSD Global Seminar

Basic Information
- Course Title: CSE 4GS, Mathematical Beauty in Rome, 4 units
- Date: Summer Session 1, 2019
  - Student must enroll in both CSE 4GS and CSE 6GS
- Instructor: Prof. Joseph Pasquale, Dept. of Computer Science and Engineering
  - Email: pasquale@cs.ucsd.edu
  - Web: http://www-cse.ucsd.edu/~pasquale
- Website: http://www-cse.ucsd.edu/mathinrome

Prerequisites
- Math 20A and Math 20B (Calculus for Science and Engineering I and II), permission of instructor

Overview and Topics
- Exploration of topics in math and engineering of classical Roman architecture
- Analysis of basic structures (arches, vaults, domes, etc.)
- Mathematical and engineering principles of Colosseum, Pantheon, St. Peter’s, Brunelleschi’s dome (Florence), Tower of Pisa, and other sites to be determined

Texts, Readings, Software - tentative

Text and Software (required)

Bibliography (books and articles that provide background for class material)

Books
• Tutte l'opere d'architettura et prospetiva, by Serlio (Sebastiano Serlio on Architecture, Volume 1: Books I-V, Translators: Vaughan Hart and Peter Hicks, Yale University Press, 2005)
• Arches, Vaults and Buttresses, by Jacques Heyman, Variorum, 1996.
• Structures or Why things don't fall down, by J. E. Gordon, Da Capo, 1978.
• The Pantheon in Rome. Contributions to the Conference Bern, November 9-12, 2006, Gerd Graßhoff, Michael Heinzellmann, Markus Wäfler (Eds.). Bern: Bern Studies, 2009. online at digitalpantheon.ch

Articles from Journals and Conference Proceedings

• “Il Colosseo Studi e Ricerche,” Disegnare, idee e immagini, no. 18-19, Editore Gangemi, Roma (June/Dec 1999). (entire issue devoted to research on the Colosseum)

**Grading - tentative**

- 40% weekly homework (4 weekly homework assignments)
- 20% class participation (9 hrs prep per 3 hour lecture = 18 hrs/week)
- 40% final exam

**Course Policies**

- Attendance to all classes and on-site labs is required
- Late work will not be accepted, extensions will not be given
- Students must abide by the rules of UCSD Policy on Integrity of Scholarship: [http://senate.ucsd.edu/manual/appendices/appendix2.pdf](http://senate.ucsd.edu/manual/appendices/appendix2.pdf)
- Students must act in a respectful and mature manner when visiting all monuments and sites, and follow all visitation rules; failure to do so can result in immediate expulsion from the program

**Schedule (for both CSE 4GS and 6GS) - tentative**

- Mon/Thu, 15:00-18:00 .......... Class (CSE 4GS)
- Tue/Wed, 9:30-14:00 ........... On-site labs (CSE 6GS)
- Fri, 9:30-15:30 .................. Excursions (CSE 4GS+6GS)
- Some weeks the activities may be organized differently