

CME112 Evolution of Infrastructure and Society

- Instructor:** Professor Sybil Derrible, 2071 ERF, derrible@uic.edu
Office hours: on demand by email
- TA:** Mohamed Badhrudeen, 4266 SEL, mmoham55@uic.edu
Office hours: on demand by email
- Hours:** Virtual asynchronous with one weekly mandatory synchronous session:
- Tuesday: room 241, ARC (Academic and Residential Complex)
 - Thursday: remotely on Zoom
- Location:** Zoom session info: [\[not shown in online syllabus\]](#)
- Summary:** This course introduces students to general engineering principles related to infrastructure and to the ethical and societal implications of new and existing infrastructure systems. Infrastructure systems include water, wastewater, transport, electricity, gas, solid waste, and telecommunications. One new system will be covered and discussed per week. Students are expected to read the weekly readings and participate in one of the sessions organized every week—that will serve to generate a discussion between groups of students. The main assessment for the class will be a series of quizzes and short essays. No prior engineering knowledge is required.
- Objectives:** This course aims to provide students with a solid understanding of how individual infrastructure systems function and what their ethical and societal implications are. More specifically, at the end of this course, students should be able to:
1. explain the main engineering principles governing how urban infrastructure systems function.
 2. detect the function of individual pieces of infrastructure in everyday life.
 3. discuss the ethical and societal implications of infrastructure.
- In addition, from a pedagogical point of view, students should be able to:
4. learn basic engineering concepts on their own.
 5. engage with their peers in a constructive discussion.
 6. research and synthesize information in a report.
- Textbook:** No textbook is required. The students will be given weekly readings through Blackboard. Beyond these readings, the following books may be useful:

- # Ascher, K., 2007, [*The Works: Anatomy of a City*](#), Penguin
- # Penn, M.R., Parker, P., 2011, [*Introduction to Infrastructure: An Introduction to Civil and Environmental Engineering*](#), Wiley
- # Derrible, S., 2019, [*Urban Engineering for Sustainability*](#), MIT Press

Grading Policy: Attendance, participation, behavior (15%)
 Weekly quizzes (20%) – Best 10 out of 14
 My Everyday Infrastructure essay (10%)
 Infrastructure Case Study essay (15%)
 Featured Infrastructure in a Movie essay (10%)
 Ethical and Societal Implications essay (15%)
 Future of Infrastructure essay (15%)

Work submitted late may receive a penalty.

Plagiarism: Plagiarism is a serious offense and it will not be tolerated; see university policy. All reviews, papers and any other submitted material will be run through a plagiarism tool.

Attendance Policy: All students are required to read the weekly readings and attend one synchronous session per week (students are recommended to attend the same session every week). If at any moment a student is to be absent, he/she/they should have discussed it prior with the instructor.

Professional Conduct: Students are always expected to conduct themselves with respect towards the instructor and their fellow students.

Safe Space: CME112 is a safe space. All students will be respected and all should feel comfortable to ask whatever questions they have. This is particularly important for this general education class that deals with the ethical and societal implications of infrastructure. Students are welcome to email the instructor directly if they have a question that they would rather not ask in class.

Class Schedule and Readings:

Class	Week	Topic
1	Aug. 24	Water Collection in Rome
2	Aug. 31	Water Treatment in Tel-Aviv
3	Sep. 7	Water Distribution in Hong Kong
4	Sep. 14	Sanitary Sewers in Paris
5	Sep. 21	Stormwater Management in Copenhagen
6	Sep. 28	Traffic and Roads in Los Angeles
7	Oct. 5	Public Transport in London
8	Oct. 12	Active Transport in Amsterdam

9	Oct. 19	Integrated Transport in Shanghai
10	Oct. 26	Electricity Generation in Cape Town
11	Nov. 2	Electricity Distribution in Chicago
12	Nov. 9	Natural Gas in Brussels
13	Nov. 16	Solid Waste in Tokyo
14	Nov. 23	No Class (Thanksgiving)
15	Nov. 30	Telecommunications in New York and San Francisco
16	Dec. 7	No Class (finals week)