

**COLLEGE OF ENGINEERING, UIC**  
**CME112 EVOLUTION OF INFRASTRUCTURE AND SOCIETY**  
**(3 CREDIT HOURS)**

## **I. INSTRUCTOR & COURSE DETAILS**

**Instructor Name: Professor Sybil Derrible**

Email address: [derrible@uic.edu](mailto:derrible@uic.edu)

Website: <https://sybilderrible.com/>

Drop-In Office Hours: open door policy / on demand

Drop-In Hours location: 2071 ERF or on Zoom (schedule with instructor)

**Teaching Assistant: Uttara Sutradhar**

Email address: [usutra2@uic.edu](mailto:usutra2@uic.edu)

Drop-In Office Hours: open door policy / on demand

Drop-In Hours location: 4266 SEL

**Blackboard Course Site:** [https://uic.blackboard.com/ultra/courses/\\_252390\\_1/cl/outline](https://uic.blackboard.com/ultra/courses/_252390_1/cl/outline)

Students are expected to log into the course site regularly to learn about any developments related to the course, upload assignments, and communicate with classmates. For all technical questions about Blackboard, email the Learning Technology Solutions team at [LTS@uic.edu](mailto:LTS@uic.edu).

### **Course Modality and Schedule**

This course is taught **ON CAMPUS**.

- Hours: Tuesdays and Thursdays from 9:30 AM to 10:45 AM
- Location: Lecture Center Building C | Room C003

## **II. COURSE INFORMATION**

### **Catalog Course Description and Prerequisite/corequisite Statement**

Evolution of infrastructure and its interaction with US society. Examples include development of transportation systems, water infrastructure, electrical grid, structural and geotechnical technology. Ethical and societal implications of new systems. Course Information: Field trips required at a nominal fee. Prerequisite(s): ENGL 160; or consent of the instructor.

### Growth Mindset:

Course materials and assignments can be complex and challenging, but they are crucial to your intellectual and personal growth and development. There are times you may need extra help. Students who attend class consistently, complete all assignments, thoughtfully engage with feedback on work, develop good study strategies, visit the tutoring center, and contact faculty when they are struggling can develop a thorough understanding of the course material and ultimately succeed in the course!

## Course Goals and Learning Outcomes

### Course Learning Outcomes:

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.

### General Education Learning Outcomes:

USS 1. Analyze aspects of U.S. society.

USS 2. Analyze the communicative, political, social, economic, or cultural systems in the U.S.

USS 4. Critically examine the tensions among various groups within U.S. society.

USS 5. Explore contemporary governmental policies.

USS 7. Study events, ideas, or movements that have influenced U.S. society.

### Course type:

Elective

### Brief list of topics to be covered:

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.

## Required and Recommended Course Materials

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
- Derrible, S., 2019, [\*Urban Engineering for Sustainability\*](#), MIT Press

- Hayes, B., 2014, [\*Infrastructure: A Guide to the Industrial Landscape\*](#), W. W. Norton & Company
- Penn, M.R., Parker, P., 2011, [\*Introduction to Infrastructure: An Introduction to Civil and Environmental Engineering\*](#), Wiley

**Required Technology**

None

**Respect for Copyright**

Please protect the copyright integrity of all course materials and content. Please do not upload course materials not created by you onto third-party websites or share content with anyone not enrolled in our course.

**III. COURSE POLICIES & CLASSROOM EXPECTATIONS****Grading Policy and Point Breakdown**

Attendance, participation, behavior (15%)

Weekly quizzes (20%) – Best 10 out of 15

My Everyday Infrastructure essay (10%)

Infrastructure Case Study essay (15%)

Ethical and Societal Implications essay (15%)

Featured Infrastructure in a Movie essay (10%)

Future of Infrastructure essay (15%)

**Policy for Missed or Late Work**

Missed work will be given a 0 grade. Work submitted late will be deducted 5% per day that it is late. For example, if it is submitted two days late, 10% will be deducted. Work submitted more than 20 days late will be given a 0 grade.

**Attendance / Participation Policy**

Attendance is mandatory. Please email me if you face an unexpected situation that may impede your attendance, participation in required class and exam sessions, or timely completion of assignments.

**Academic Integrity**

As a student and member of the UIC community, you are expected to adhere to the [Community Standards](#) of [academic integrity](#), accountability, and respect. Please review the [UIC Student Disciplinary Policy](#) for additional information.

**Email Expectations**

Students are responsible for all information instructors send to your UIC email and Blackboard accounts. Faculty messages should be regularly monitored and read in a timely fashion.

## IV. COURSE SCHEDULE

### Weekly Schedule of Class Topics, Assignments, Assessments, Due Dates, and Deadlines

<b>Week 1</b>	T: Class Introduction R: Water Collection: All Aqueducts Lead to Rome
<b>Week 2</b>	T: Water Treatment: Drinking from the Seas in Tel-Aviv R: Field Trip (Urban Discovery) <u>Deadline</u> : “My Everyday Infrastructure” Essay Due (August 31)
<b>Week 3</b>	T: Traffic and Roads: Stuck on the 405 in Los Angeles R: Movie (Who Framed Roger Rabbit – Part I)
<b>Week 4</b>	T: Movie (Who Framed Roger Rabbit – Part II) R: Water Distribution: Quenching the Soaring Dragon in Hong Kong
<b>Week 5</b>	T: Sanitary Sewers: Conscience, Convergence, and Clarifiers in Paris R: Field Trip (Traffic)
<b>Week 6</b>	T: Stormwater Management: Rain or Shine, Climate Resilience in Copenhagen R: Field Trip (Campus)
<b>Week 7</b>	T: Public Transport: Minding the Gap in London R: Documentary (Quand la Seine débordera – When the Seine River overflows)
<b>Week 8</b>	T: Active Transport: Pathways, Bikeways, and Shared Spaces in Amsterdam R: Movie
<b>Week 9</b>	T: Integrated Transport: The Only Way to Prevent Transport Chaos in Shanghai R: Discussion
<b>Week 10</b>	T: Electricity Generation: The Powers that Power Cape Town R: “Infrastructure Case Study” Class <u>Deadline</u> : “Infrastructure Case Study” Essay Due (October 26)
<b>Week 11</b>	T: Electricity Distribution: The Birth of the Grid in Chicago R: Movie
<b>Week 12</b>	T: Natural Gas: A Dead Cow, An Oracle, and A Rotten Egg Smell in Buenos Aires R: Movie
<b>Week 13</b>	T: Solid Waste Management: From a Garbage War to a Sea Forest in Tokyo R: “Ethical and Societal Implications” Class <u>Deadline</u> : “Ethical and Societal Implications” Essay Due (November 16)
<b>Week 14</b>	T: Analog Telecommunication: Can you hear me now in New York City R: No class (Thanksgiving)
<b>Week 15</b>	T: Digital Telecommunication: Surfing on the Internet in San Francisco R: Urban Infrastructure: We Have Come Full Circle in Singapore
<b>Week 16</b>	Final exam week (no class) <u>Deadline</u> : “Featured Infrastructure in a Movie” Essay Due (December 8) <u>Deadline</u> : “Future of Infrastructure” Essay Due (December 8)

**Disclaimer**

This syllabus is intended to give the student guidance on what may be covered during the semester and will be followed as closely as possible. However, as the instructor, I reserve the right to modify, supplement, and make changes as course needs arise. I will communicate such changes in advance through in-class announcements and in writing via Blackboard Announcements.

**V. ACCOMMODATIONS****Disability Accommodation Procedures**

UIC is committed to full inclusion and participation of people with disabilities in all aspects of university life. If you face or anticipate disability-related barriers while at UIC, please connect with the Disability Resource Center (DRC) at [drc.uic.edu](http://drc.uic.edu), via email at [drc@uic.edu](mailto:drc@uic.edu), or call (312) 413-2183 to create a plan for reasonable accommodations. To receive accommodations, you will need to disclose the disability to the DRC, complete an interactive registration process with the DRC, and provide me with a Letter of Accommodation (LOA). Upon receipt of an LOA, I will gladly work with you and the DRC to implement approved accommodations.

**Religious Accommodations**

Following [campus policy](#), if you wish to observe religious holidays, you must notify me by the tenth day of the semester. If the religious holiday is observed on or before the tenth day of the semester, you must notify me at least five days before you will be absent. Please submit [this form](#) by email with the subject heading: **"YOUR NAME: Requesting Religious Accommodation."**

**VI. CLASSROOM ENVIRONMENT****Inclusive Community**

UIC values diversity and inclusion. Regardless of age, disability, ethnicity, race, gender, gender identity, sexual orientation, socioeconomic status, geographic background, religion, political ideology, language, or culture, we expect all members of this class to contribute to a respectful, welcoming, and inclusive environment for every other member of our class. If aspects of this course result in barriers to your inclusion, engagement, accurate assessment, or achievement, please notify me as soon as possible.

**Name and Pronoun Use**

If your name does not match the name on my class roster, please let me know as soon as possible. My pronouns are *[she/her; he/him; they/them]*. I welcome your pronouns if you would like to share them with me. For more information about pronouns, see this page: <https://www.mypronouns.org/what-and-why>.

**Community Agreement/Classroom Conduct Policy**

- Be present by turning off cell phones and removing yourself from other distractions.
- Be respectful of the learning space and community. For example, no side conversations or unnecessary disruptions.
- Use preferred names and gender pronouns.
- Assume goodwill in all interactions, even in disagreement.
- Facilitate dialogue and value the free and safe exchange of ideas.
- **Try not to make assumptions, have an open mind, seek to understand, and not judge.**
- Approach discussion, challenges, and different perspectives as an opportunity to “think out loud,” learn something new, and understand the concepts or experiences that guide other people’s thinking.
- Debate the concepts, not the person.
- Be gracious and open to change when your ideas, arguments, or positions do not work or are proven wrong.
- Be willing to work together and share helpful study strategies.
- Be mindful of one another’s privacy, and do not invite outsiders into our classroom.

### **Content Notices and Trigger Warnings**

Our classroom provides an open space for a critical and civil exchange of ideas, inclusive of a variety of perspectives and positions. Some readings and other content may expose you to ideas, subjects, or views that may challenge you, cause you discomfort, or recall past negative experiences or traumas. I intend to discuss all subjects with dignity and humanity, as well as with rigor and respect for scholarly inquiry. If you would like me to be aware of a specific topic of concern, please email or visit my Student Drop-In Hours.

## **VII. RESOURCES: Academic Success, Wellness, and Safety**

We all need the help and the support of our UIC community. Please visit my **drop-in hours** for course consultation and other academic or research topics. For additional assistance, please contact your assigned college advisor and visit the support services available to all UIC students.

### **Academic Success**

- [UIC Tutoring Resources](#)
- College of Engineering [tutoring program](#)
- [Equity and Inclusion in Engineering Program](#)
- [UIC Library](#) and [UIC Library Research Guides](#).
- [Offices](#) supporting the UIC Undergraduate Experience and Academic Programs.
- [Student Guide for Information Technology](#)
- [First-at-LAS](#) Academic Success Program, focusing on LAS first-generation students.

### **Wellness**

- **Counseling Services:** You may seek free and confidential services from the Counseling Center at <https://counseling.uic.edu/>.
- Access [U&I Care Program](#) for assistance with personal hardships.

- **Campus Advocacy Network:** Under Title IX, you have the right to an education that is free from any form of gender-based violence or discrimination. To make a report, email [TitleIX@uic.edu](mailto:TitleIX@uic.edu). For more information or confidential victim services and advocacy, visit UIC's Campus Advocacy Network at <http://can.uic.edu/>.

### Safety

- [UIC Safe App](#)—PLEASE DOWNLOAD FOR YOUR SAFETY!
- [UIC Safety Tips and Resources](#)
- [Night Ride](#)
- [Emergency Communications](#): By dialing 5-5555 from a campus phone, you can summon the Police or Fire for any on-campus emergency. You may also set up the complete number, (312) 355-5555, on speed dial on your cell phone.