

CP6962/6960 Syllabus

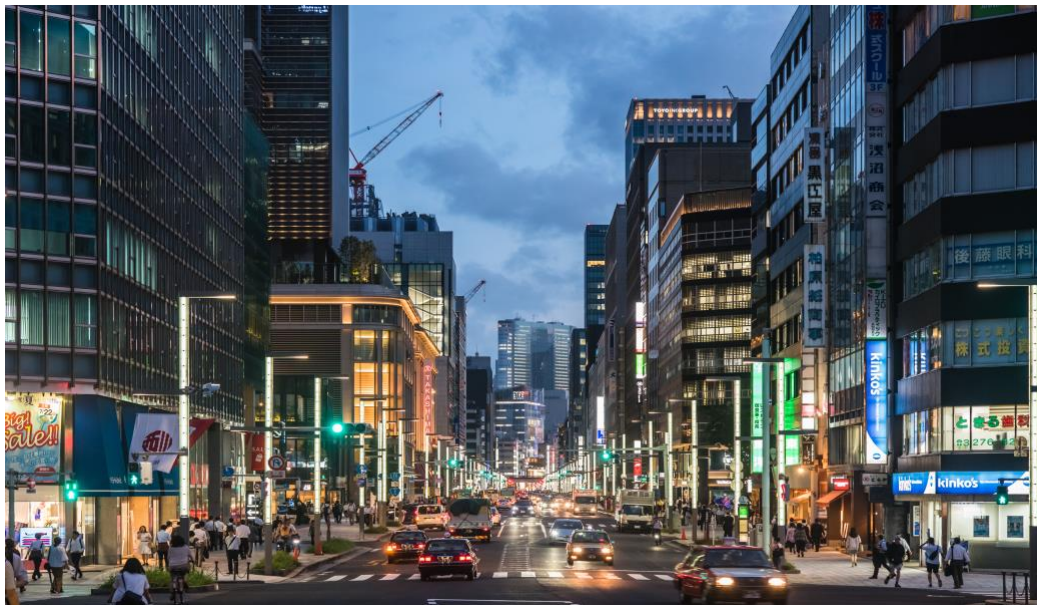
International Smart City Workshop – Tokyo, Nihonbashi (5 or 6 credits)

Summer 2026

School of City and Regional Planning, College of Design

Georgia Institute of Technology

Center for Spatial Information Science and Department of Urban Engineering, the University of Tokyo



Instructor Information

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Course Information

Course Numbers and Registration

There are two course numbers for this Summer Capstone workshop:

1. CP 6962, 5 credits for all students, including two sections CRNs 57272 and 57273. Students need to register for both sections.

2. CP 6960, 1 optional credit for students who are required to complete their 6-credit capstone or studio. The section is CRN 57274.

Course Format and Structure

The Summer 2026 International Smart City Workshop is structured in three stages:

3. Stage 1 – Problem Formulation (May 9–30, 2026): Weekly in-person meetings at Eco Urban Lab (hybrid format)
4. Stage 2 – International Smart City Workshop in Tokyo, Japan (June 7–21, 2026): OIE international field trip
5. Stage 3 – Post-Workshop Research and Writings (July 1–31, 2026): Final report due July 31, 2026

Course Description

The Capstone Studio – International Smart City Workshop in Tokyo is a required capstone studio for the MSUA program offered in the summer semester. The summer capstone studio aims to give students real-world experience as they work alongside clients to execute an urban analytics-focused urban design project internationally. It is also an optional research-driven studio for MSUD, MCRP, MS and Ph.D. programs at the School of City and Regional Planning, School of Architecture, and other schools at Georgia Tech.

The Summer Capstone Studio explores methods of urban design and modeling for urban problems in the face of climate change, urban transition, and impacts of technologies on future city development. Many Asian cities with high-density urban living are facing these challenges and are experimenting with new models of smart city development to reduce urban carbon emissions to net zero before 2050.

The workshop will:

6. Explore future city development to meet U.N. Sustainable Development Goals (SDG);
7. Offer experiential learning opportunities for students through building interdisciplinary teamwork in urban analytics and planning, architecture, urban design, and systems engineering;
8. Create high-impact design research to incorporate data analytics, digital twins, and urban systems design for models of future city development.

Urban systems design offers an approach to designing new forms of sustainable, resilient, and socially responsible communities, in which creative urban design integrates data analytics, systems thinking, and digital technologies (Yang and Yamagata, 2020). The 2026 International Smart City Workshop explores new models of designing sustainable urban communities in the context of high-density urban environments.

The 2026 Summer Tokyo workshop investigates Nihonbashi, Chuo Ward of Tokyo, as an experimental test bed for future city development. The Summer workshop focuses on building energy, urban mobility, and urban design for carbon neutrality and climate resilience.

Course Learning Outcomes

The International Smart City Workshop invites students from MSUA, MSUD, MS Architecture, MArch, MCRP, MS Engineering, and Ph.D. programs who are interested in smart cities design and modeling. Students who successfully complete this workshop will be able to demonstrate familiarity with methods, techniques, and applications from at least one of the three focus areas:

- Data-driven analytics and visualization for urban problems, including data visualization, 2D to 3D modeling using tools in GIS or Rhino–BIM, with a focus on ecological urban performance modeling and assessment. Topic areas include urban energy, urban climate, urban mobility, and urban resilience.
- Decision-making models for urban and architecture design, from conceptual urban design to digital twin as city information systems for complex design decisions.
- Co-design and interdisciplinary teamwork, from team-building and co-design to communication with stakeholders for implementation strategies.

Course Schedule

Stage 1 – Problem Formulation: May 9–30, 2026

Weekly in-person meetings at the Eco Urban Lab (hybrid meeting format). Students will develop problem formulations, data visualizations, and research designs for the Tokyo urban site.

Stage 2 – International Workshop in Tokyo: June 7–21, 2026

Students will participate in an intensive on-site workshop in Tokyo, Japan. Local accommodation during the two-week workshop will be provided at the Kashiwa-no-ha campus, sponsored by the University of Tokyo. Students are responsible for their own travel costs including airfare, ground transportation, and meals.

Kashiwa-no-ha Smart City Campus: [Kashiwa-no-ha Smart City website](#)

Anticipated timeline:

- 6/6 – Departure from Atlanta
- 6/7 – Arrival in Tokyo; Check in at Kashiwa-no-ha campus guest house ([View campus map](#))
- 6/8–6/12 – Workshop Session I, University of Tokyo – Kashiwa-no-ha campus
 - 1) Kick-off and stakeholder meeting
 - 2) Lecture series: Methodology of urban computing, urban analytics, and urban energy modeling
 - 3) Research design and modeling workshop
 - 4) Field trips and site survey to Tokyo central city and Bancho
- 6/13–6/14 – Independent field trip in Tokyo and surroundings
- 6/15–6/19 – Workshop Session II, University of Tokyo – Kashiwa-no-ha campus
 - 1) Design iteration
 - 2) Project integration: Urban analytics, digital twin, and urban systems design
 - 3) Project reviews

- 6/19 – Final presentation and stakeholders’ meeting at Zero Club, Otemachi (TBA) ([Zero Club website](#))
- 6/20 – Independent field trip in Tokyo and surroundings
- 6/21 – Check out at Kashiwa-no-ha campus; departure from Tokyo, return to Atlanta

Stage 3 – Post-Workshop Research: July 1–31, 2026

Students will complete post-workshop research writings and analysis based on their Tokyo fieldwork. The final report is due on July 31, 2026.

Additional information:

[Georgia Tech Students and the Smart City of Tokyo \(Esri Newsroom\)](#)

[Previous publication from the Summer Tokyo Workshop \(SAGE Journals\)](#)

Grading Policy

Final grades will be determined as follows:

9. 10% – Stage 1: Problem formulation, data visualization, and conceptual design
10. 60% – Stage 2: International Smart City Workshop participation and deliverables
11. 30% – Stage 3: Final report writings

References

1. Eco Urban Lab, 2020, Digital Urban Design Toolbox, Eco Urban Lab, Georgia Institute of Technology.
2. Fischer, Olivia J. Pinon et al., 2022, Digital Twin: Reference Model, Realizations, and Recommendations, Insight, Volume 25, Issue 1, March 2022, Pages 50–55.
3. Koolhaas, Rem, Obirst H U, 2012, Project Japan: Metabolism Talks, Taschen.
4. Maki, Fumihiko et al., 2018, City with a Hidden Past, Kajima Institute Publishing Co., Tokyo, Japan.
5. Rueda, Salvador et al., 2015, Ecological Urbanism Certification: Urbanism Certification with Sustainability Criteria, Barcelona Urban Ecology Agency.
6. Steinitz, C., 2014, Chapter 2 – Which Way of Designing? in Geodesign: Integrating Design and Geospatial Science in Europe, Scholten H, Lee D and Dias E eds., Springer.
7. Yang, Perry P J, 2014, Chapter 3 – Energy Resilient Urban Planning, in Geodesign: Integrating Design and Geospatial Science in Europe, Scholten H, Lee D and Dias E eds., Springer.
8. Yang, Perry P J, Yamagata, Yoshiki, 2020, Chapter 1, in Urban Systems Design: Creating Sustainable Smart Cities in the Internet of Things Era, Yamagata and Yang eds., Elsevier.

Institutional and Administrative Policies

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit the

[Georgia Tech Academic Honor Code](#). Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, which will investigate the incident and can impose academic sanctions.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (ODS) at (404) 894-2563 or visit them at Smithgall Student Services Building, Suite 2-230. Once you have your accommodation letter, please meet privately with the instructor to discuss the accommodations that have been requested. For more information, visit

[Georgia Tech Office of Disability Services](#).

Student-Faculty Expectations

Georgia Tech expects a quality experience for both students and faculty. Students can expect that the instructor will be professional, prepared, and provide feedback in a timely manner. The instructor expects students to be prepared, to participate in class activities, and to uphold the standards of the Georgia Tech community. Communication between students and instructor should be professional, respectful, and timely. For the full statement on student-faculty expectations, see the

[Student-Faculty Expectations Agreement](#).

Generative AI Use Policy

Students may use generative AI tools (such as ChatGPT, Copilot, or similar) only for tasks explicitly approved by the instructor. Undisclosed use of AI-generated content submitted as your own work may be treated as an academic integrity violation. When AI tools are approved for use, students must document their use clearly in submitted work. The goal of this course is to develop your own analytical and design capabilities; AI tools may support, but should not replace, your own reasoning and judgment.

Institute Approved Absences

Georgia Tech recognizes certain types of excused absences, including absences for Institute-approved activities, military service, and serious illness. Students who anticipate missing class for Institute-approved activities should notify the instructor at least one week in advance and provide documentation. Students are responsible for any material missed during an absence. See the

[Georgia Tech Academic Regulations on Attendance](#) for full details.