

Emergent Futures: Leveraging AI in the Design of Urban Environments

How do we expand the imaginative powers of the human species? The goal is to make humans more imaginative. – David Holz, Midjourney founder

ARCH 571 | **AI Studio**

Design: Detail and
Architectonics | 6 CH

Illinois School of
Architecture | Fall 2024

I Section E3 | M/W
1:00PM to 5:50PM

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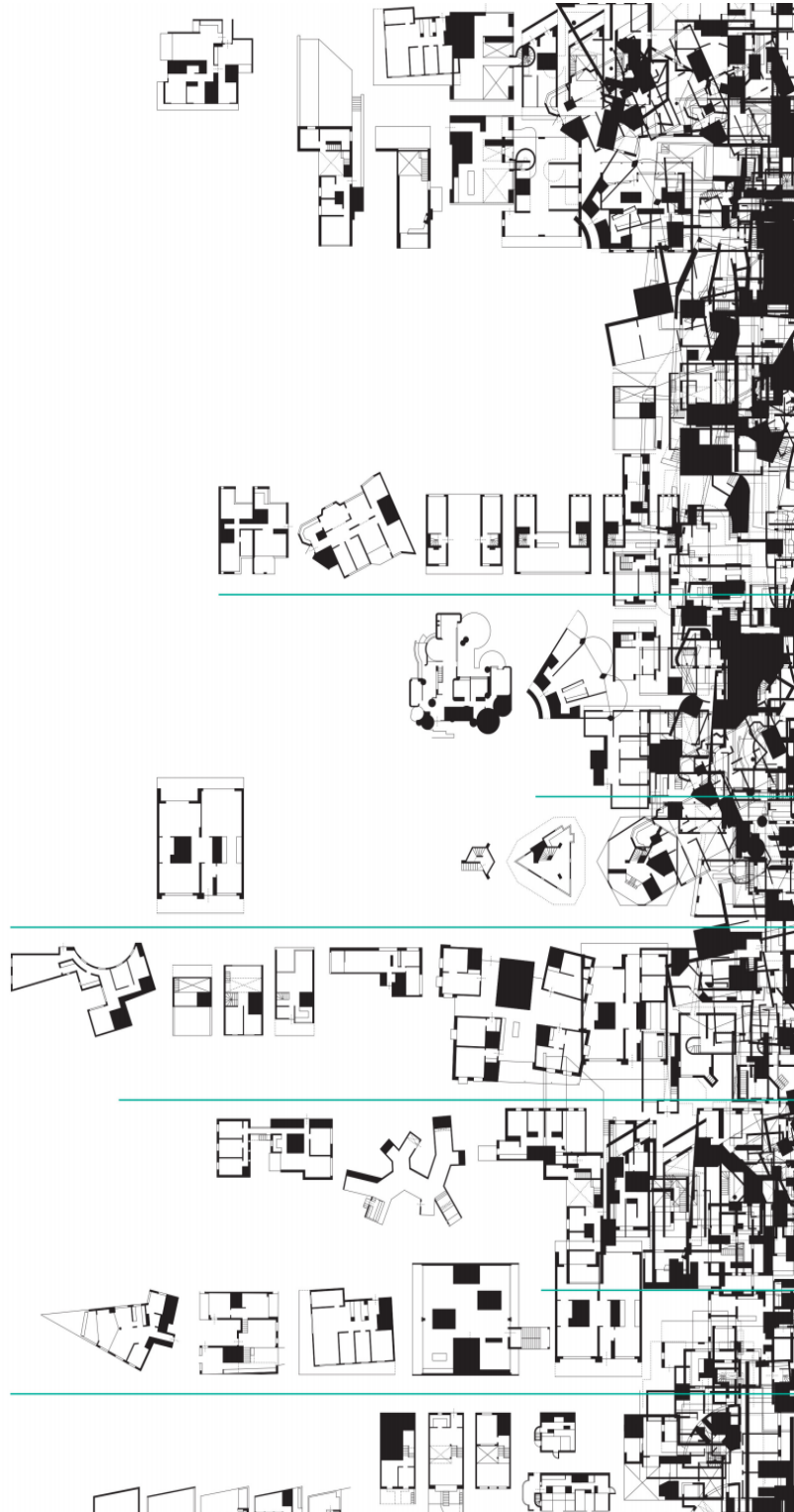
Class Days/Time: M/W
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In this new ARCH 571 Graduate Studio course, Master of Architecture students gain firsthand experience with advanced generative AI technologies, empowering them to design urban environments that are smarter and more sustainable.

This groundbreaking Master's studio will explore and expand the ways AI can transform how we design and integrate affordable housing in an urban setting. AI will be used throughout the semester not only to help students explore innovative design solutions but develop their architectural and critical thinking skills while transforming their understanding of AI.

Together throughout the semester we will undertake Generative Design Exploration, AI-Assisted Urban Planning, AI in Building Performance Analysis, the Critique and Review of AI Tools, Ethical Implications of AI and leverage AI to explore Future Scenarios.

Schools of architecture are now starting to integrate AI into graduate design studios to explore new possibilities in design, analysis, and planning. Over 10000 Illinois School of Architecture alumni shape the built environment around the world. Soon, each student in this studio will be among the very few who will be able to do so with the help of AI.

Using LLMs and image generators students will design a mixed-use urban development to design, analyze and optimize land use, traffic flow, and pedestrian movement. The main objective will be to utilize AI to integrate data from various sources (e.g., traffic patterns, demographic data, etc.) to create an efficient and responsive urban plan.

In this studio, AI will provide students with the means to face today's intractable challenges; ways to automate time-consuming and repetitive tasks; simpler ways to address complex operations; and the exploration and discovery of alternative design processes that lead to more informed – and ultimately imaginative – design proposals and solutions. Successful proposals will aim to illustrate AI's potential to enact change.

While visualization remains an important part of the design process, this studio aims to leverage AI to augment & amplify what the architect will be expected to do in the future, and explore how AI could evolve the design process, speculating on the future role of the augmented architect and potential for AI in architecture.

To this end, this studio will ask and seek to answer important questions:

- What new capabilities could AI enable?
- How can designers embrace new modes of design?
- What is it that makes us valuable as architects?
- What do technologies vs. design professionals do best?
- How can AI augment and amplify what we do?
- How might we leverage AI to reduce our industry's challenges (time, cost, carbon, safety, etc.)?
- How can we use AI to expand the value of what we do in studio?