



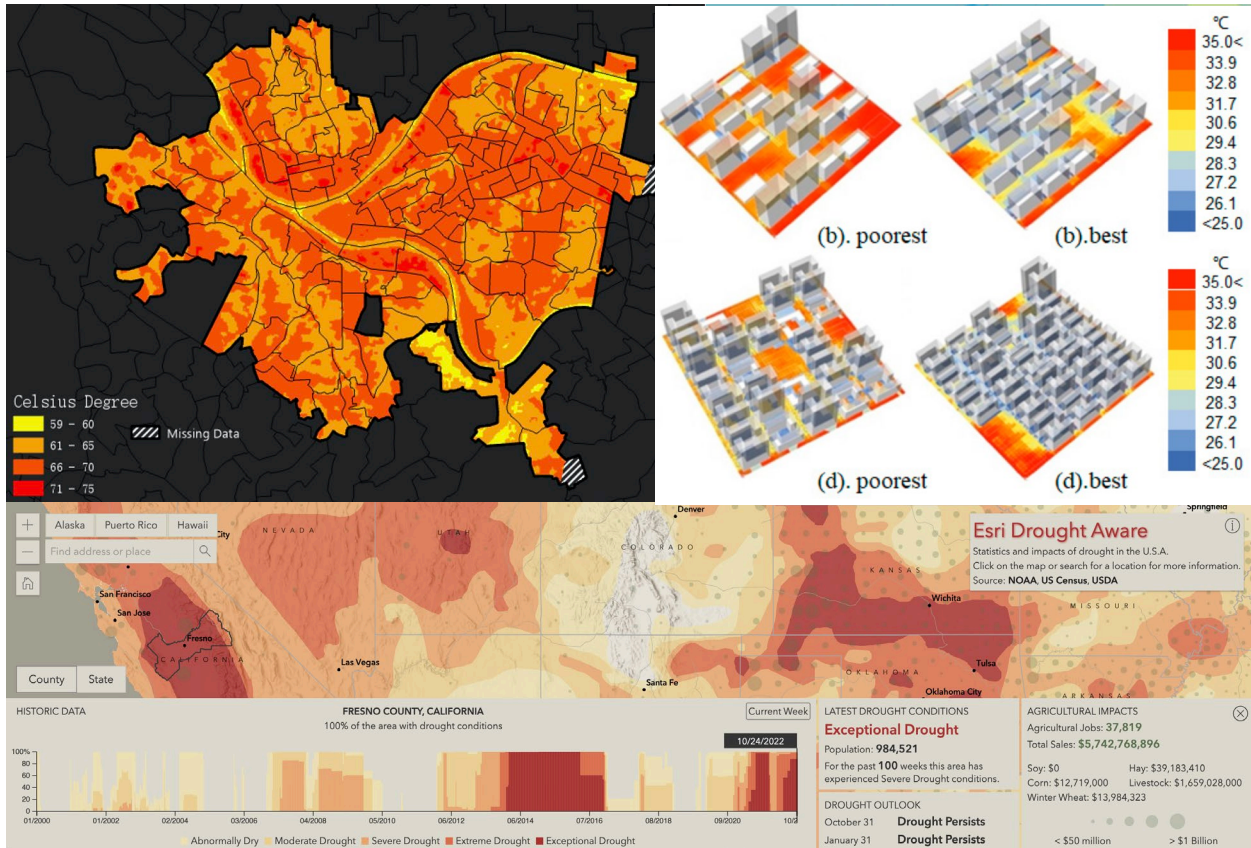
Carnegie Mellon University

School of Architecture

College of Fine Arts, CFA 201

Carnegie Mellon University

Pittsburgh, PA 15213



1) Land Surface Temperature Extraction 2) Outdoor Thermal Comfort Simulation 3) Dashboard Design (ESRI)

## 48-773: Urban Design Media: Climate Responsive Urban Systems Analysis and Storytelling

Units: 9

Instructor: Suzy Li

As urban development takes over natural lands, the climate crisis is a challenge for both urban design and related policy making. This requires not only advanced analysis support through data inferencing to reveal the real-world problems, but also mapping techniques to showcase the story to stakeholders. In this course, students will collect local or global data and apply mapping skills, including using ArcGIS and Illustrator, to map local experience and large-scale urban systems, and use spatial data science to make inferences. Potential advanced ArcGIS skills will be introduced, such as raster imagery analysis, and/or using Python (in ArcGIS Notebook) for machine learning, to identify urban built environment issues, including urban heat island, flooding risks, and social inequity; and provide evidenced-based mapping interface for decision making. In addition, parametric urban design using Ladybug 3D analysis will be introduced for outdoor design optimization. There will be both lectures and labs with hands on exercises to learn from case studies and to prepare students for their final projects on topics of their own interests. Students are required to take the intro ArcGIS course before taking this advanced level media course. Basic mapping skills with ESRI ArcGIS Pro and online Dashboard design skills are required.