Streets and plazas are where we meet. We recreate there, do commerce, live, protest, celebrate and do other uses. Human health has been impacted by pollution of air, sound, light, and water, energy, social interaction, housing equity, inclusive design and now Covid19.

Meanwhile urban computing has fed off the revolution of almost all data now being geolocational. Remote sensing, data visualization and design can shape the way we take back streets.

This course will be set in Barcelona’s new Superilles (catalan for ‘Super-island’). Informed by sabbatical research in Barcelona, Copenhagen and New York, this media course will explore contemporary urban design theory, parametric analysis, visualization methods and street and plaza design for people. In the case of Barcelona should design be adaptive and participatory? Strategic and well built? How centric is tourism post-Covid? How does this model adapt to lower density? Commuter neighborhoods? Cost? 

* excellent Vox articles by Seattle based writer David Roberts about Superilles: 

How does our understanding of the environment today interact with data? How do we design with data? At what scale of space and time do we include phenomen data?

The methods taught in this class will investigate the measurement of small-scale and time-based geospatial understandings using Rhino Grasshopper, mobile and or remote sensing prototypes. Students will analyze and design for phenomena that vary within Barcelona’s existing Poblenou, San Antoni and future superilles equitably dispersed non-central districts. Following methods by world leading urban design Gehl Design, students will look to mine big data and social data following in-person pilot test in their own public spaces. Environmental micro-climatic differences will be studied simultaneously across human scaled urban and non-urban spaces. This data will be compared to baseline conditions via EPW weather database files using Grasshopper plugins Ladybug and Diva, often situated at airport weather stations miles away. Students will apply this data acquisition for design.

Urban ecological knowledge will be gained from possible Zoom communication with Superilles founders Barcelona, Agency of Urban Ecology, Barcelona Office of Resiliency and others. A brief history of Barcelona urban ecology will be studied from Cerda’s 1864 plan, ecologist Ramon Margalef, current Barcelona smart city planning and new deployments of the Superilles model primarily designed as refuges of healthy living within urban problems of congestion and air pollution. Research about this topic has recently been published by the instructor in the Journal of Urbanism, air pollution, about time in AD and elsewhere.

*Previous experience with Rhino or other modeling platforms will allow students to do Grasshopper programming more quickly, online tutorials and personal feedback will provide an on-ramp for less experienced students. Readings, media exercises, data acquisition and design will be done. https://blogs.uoregon.edu/523f17/ http://www.lcabcn2017uo.wordpress.com, Marziah Zad’s ARCH 4/584 Sensory Playscapes studio could be paired to apply these methods.
Gracia, proto-Superilla

Poblenou, first Eixample Superilla

San Antoni, Superilla

Horta Superilla

Barcelona streets

Copenhagen streets

New York
Methodological Guide for Accreditation Systems Audit and Certification of Quality and Sustainability in the Urban Environment (Rueda et al 2012)

A1. Land Use
A2. Public Space and Livability
A3. Mobility and Services
A4. Urban Complexity
A5. Green Spaces and Biodiversity
A6. Urban Metabolism

**A7. Social Cohesion**

A8. Management and Policy
findings as programming suggestions:
more commerce - new housing types - accessible seating - accessible water + toilets - broadband and access to internet -

public house
The design methods taught in this class investigate the measurement of human-scaled and time-based geospatial understandings using Rhino Grasshopper and Arduino microprocessor based sensor prototypes. Micro-climatic differences are studied simultaneously across small urban and non-urban spaces. This data is baseline alongside certified stations downtown and online EPW datasets via distant airports weather stations using Grasshopper plugin Ladybug. Students choose and test their own sensors. One class sensor platform was combined to include temperature, humidity, barometric pressure, PM air quality, sound and rain. Data is then simultaneously measured using 4-8 sensor platofrms located across the: 1) city, 2) neighborhood and 3) human-scaled Kesey Plaza.
Design of cities is changing. New urban design methods including the use of mobile phones, Grasshopper / GIS and low-cost Arduino microprocessors are changing the way architects understand cities. This ten-week summer urban design program in the Catalan city of Barcelona, Spain offers students insight into the measurement and design of urban relationships. In-situ work allows the integration of both existing and newly acquired datasets using architectural scaled software Rhino Grasshopper, associated plugins and custom scripts. Local expert disciplines include planning, urban ecology, architecture, robotic engineering, transit and landscape architecture. Cultural and natural comparison is provided via travel to the Granada and Berlin. In Barcelona students live, work and research in the pedestrian neighborhood of Poblenou. Students participate from the University of Oregon, New Jersey Institute of Technology and Reed College.