

Grit, Parametric Places 2018

Course Number, Time and Location: ARCH 4/523

Fall 2018: T + TH, 12:00- 1:50pm, LA 279

Instructor: Philip Speranza, speranza@uoregon.edu

Remote sensing, data visualization and design shape the way we create healthy environments for people. We often desire idyllic natural conditions. This embraces a modern notion of an idealized reality.

This course will explore how to *design* around the problems and challenges of developable sites including sound, light and air pollution from cars, trains and people, that often indicate the most vibrant, dynamic and socially interactive phenomena of society - the gritty.

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 **atmospheric** data?

The methods taught in this class will investigate the measurement of small-scale and time-based geospatial understandings using Rhino Grasshopper and Arduino microprocessor based remote sensing prototypes. Students will analyze and design for phenomena that vary within the space of a problematic site. 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 plugin Ladybug, often situated at nearby airports weather stations miles away.

Contextual spatial analysis of atmospheric conditions including water, air, heat/light, wind, sound, humidity and other natural and social phenomena will be measured across and within the scales of a city, a neighborhood and a space such as a street, square or private parcel.

Urban ecological knowledge will be based in urban theory from Barcelona Urban ecology including new three-by-three block pedestrianized areas called *Superilles*, or super islands, 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* and elsewhere. Comparative locations of data acquisition within Eugene will include the Hult Plaza, Spencer Butte, Skinner Butte.

Students will test the application of this data acquisition for design.

*Basic knowledge of Rhino Grasshopper is required. Readings, media exercises and urban design data acquisition methods will occur in lecture, workshop and tutorial formats. <https://blogs.uoregon.edu/523f17/> <http://www.lcabcn2017uo.wordpress.com>. **You should email the instructor with a description of your introductory Rhino Grasshopper knowledge via professional or academic work in order to register.