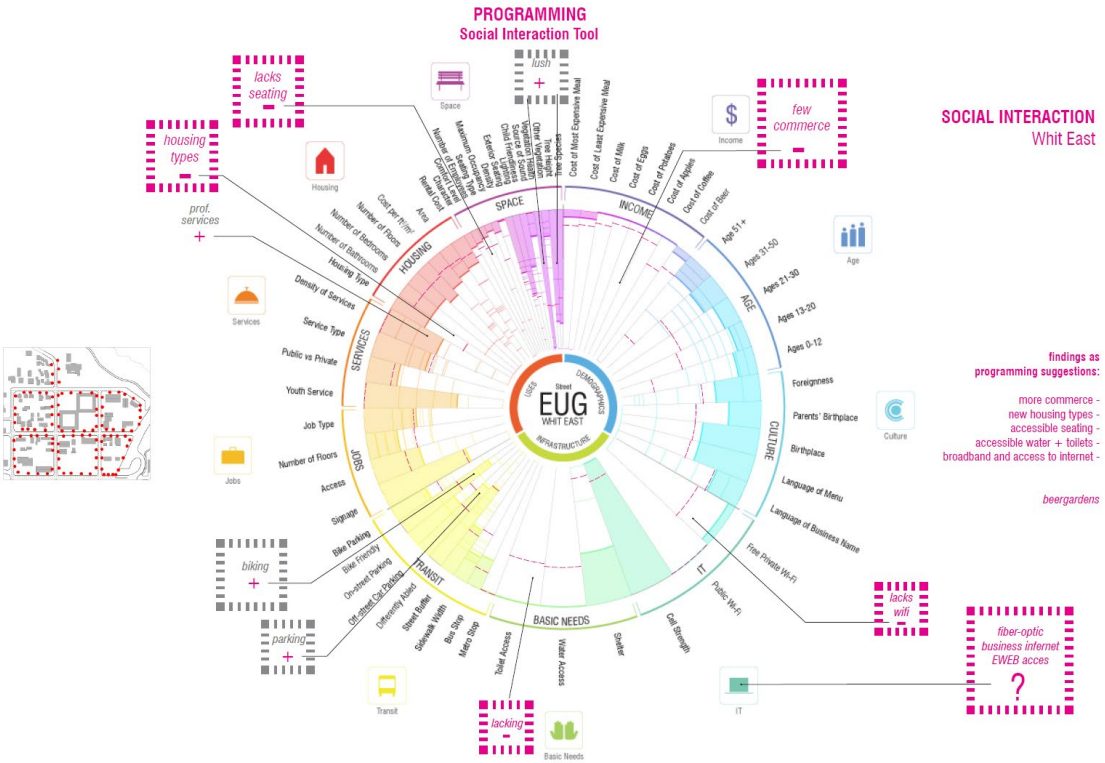
SYLLABUS

MEDIA FOR DESIGN DEVELOPMENT ARCH 423/523
Fine-Grained Urbanism Smart Construction
Instructor Philip Speranza
Instruction in English with Spanish and Catalan terms and content
3.0 Credits
40 Contact Hours
40+ total hours of student engagement in all course activities

Barcelona, Catalunya, Spain

COURSE DESCRIPTION

This is a design and project-based method course to teach students methods to measure urban characteristics and create responsive and informed filtering system for human comfort. Methods are applied to short exercises, a significant design problem-based project and final group activity. Smart and or responsive construction systems with inform performative ground planes, facades, and urban shelter skins as filters.



COURSE OBJECTIVES

The courses teach the following objectives:

- **Fundamental Urban Design Diagramming:** to analyze urban form across the scales of cities, districts, neighborhoods and urban rooms. Short sixty-second timed diagrams are produced on site of base plaza information, ordering system, human occupation in plan and perspective, shading, materials, symbols and recording of non-visual qualities as written words. In-situ diagramming will coordination with data collection methods from the associated urban research course.
- **Mapping Exercises**: to compose plan, material, time and existing environmental forces (digital and analog). Urban phenomena mapping exercises are done in Barcelona and Granada.
- **Geographic Information Systems:** Instructor developed methods using architectural scaled software Rhino Grasshopper to develop geospatial information systems workflows to analyze various types of dataset: existing, new from virtual source and new from in-situ data gathering course. The use of plugins such as Elk and Human will be taught to integrate CSV and Open Street Map file formats to analyze existing and newly acquired datasets. Visualization techniques will be taught using in-program and post-processing methods in Adobe Creative Suite.
- **Urban Analysis and Design Project:** Students will learn to define an urban problem of social interaction, define a project purpose, diagram relationships, create comparative information graphics, collection, formulate and analyze data, and propose urban design interventions using parametric design.

INSTRUCTIONAL METHODOLOGY

We will use Rhino Grasshopper, associated plugins and custom scripts as design platforms for the design projects integrated with the urban design course. Emphasis will be placed on design process and methods for data analysis. Coursework will include in-class lectures, demonstrations and workshops; out-of-class assignments; and instructor support for the projects for the urban analysis and design tools.

METHOD OF EVALUATION

Introduction Exercises related to studio project I – 2 weeks (25% grade)
Media related to studio project I – 4 weeks (40% grade)
Media related to studio project II- – 3 weeks (35% grade)

COURSE OUTLINE

Assignments in this course will integrate learning with the projectbased understanding from the associated urban design theory and urban media courses. Work will be done individually, in groups of two to three students and collectively as a class. Media methods will include analog diagramming and surveying techniques on site, multiplatform survey workflow and the use of mobile technology possibly including Arduino programming. Data collection will identify the important differences of mapping 1) urban phenomena and 2) built urban characteristics that support social interaction. Work will be posted to the course blog and or course server.

I. In-situ Recording and Analysis: Barcelona, Catalunya. **15%**
Background, theory and method including Data Collection Protocol, Data Dictionary + Documentation to Excel / CSV. Consideration of device parameters for future enhanced data collection.

- Method based on data gathering data: existing / new, on-site / off-site, virtual / real, politics of data, data coding, data types
- Phenomena vs built urban environment, coding and visual language: Location: Raval, Barcelona
- 108 point, three by three block area data collection, 2 indicators: Poblenou, Barcelona

[Written paragraph, space map + first CSV]

II. Comparative Culture and Project Support: Granada, Spain, **10%**
Students will first test project based techniques in Andalucian culture to understand the contextualization of data in Catalunya. Specific data collection based on specific project purpose and formulation for the course project.

- Data collection of the Albaicin north, Albaicin south, Centro Historico and Edge City neighborhoods.
- Analog and digital data recording. Contextual differences with Barcelona and Catalunya.

[Data Recording Sketches, CSV and written analysis]

III. Urban Analysis and Design Project Support: Poblenou / Eixample, Barcelona, **45%**
Project based support using formulation and evolutionary diagrams from the urban theory and intermediary urban media course. Development of data coding and data dictionary.

- 108 point, three by three block area data collection, various indicators: Poblenou, Barcelona
- 108 point, Superilla area data collection, various indicators: Eixample, Barcelona
- Everyday path of specific persona: Poblenou / Eixample, Barcelona
- Comparative space (ex. Gracia spaces for Superilla)

[Dataset CSV, Maps, Graph and written analysis]

IV. Class Project: Social and Ecological Interaction Tool, Barcelona, **30%**
The class will work together to understand Superillas related to an ongoing research project to be disseminated with the Ajuntament of Barcelona. Each student will use techniques developed in the program to support a comprehensive tool to measure social interaction at the scale of neighborhoods and blocks.

- Data dictionary development
- In-situ data collection technique
- Data processing and cleaning for use with the classes collective CSV dataset and Visualization

[Data Dictionary CSV, Dataset CSV, Map and short written report]

COURSE READINGS (password: Barcelona)

03 Readings, Barcelona Urban Design and Sustainability
Data dimension: accessing urbandata and making it accessible (Carlo Ratti, MIT SENSEable Cities Lab),
Sustainable Urban Expansions: the Legacy of the Cerdà Plan by Salvador Rueda,
Cities from the Bottom Up: 22@ Planning, A System Attached to Change, by Philip Speranza
. *supplemental Barcelona urban design readings*

- Neighborhood garden in the eixample, S. Rueda

- Parametric Places 22@: Smart Urban Analysis Tools and Place Branding Value Sustainable Intelligent Materials conference, Lisbon, 2013 by Philip Speranza
- Cities from the Bottom Up_Speranza_ACSA 2012 by Philip Speranza
- Cities from the Bottom Up_Speranza_ACSA 2012 (presentation)

Bibliography
Please see: https://blogs.uoregon.edu/barcelona2018/readings/ [Password: Barcelona]

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