
Taubman College of Architecture and Urban Planning
Architecture 551: Advanced Architectural Graphics
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Course Overview:

Information Design for Architects

Design is a communication art. Communication requires schematic organization in its own right, particularly in visual disciplines, and especially in an age of information technology. This is true at the most mundane levels of professional qualification, where potential employers tell us that effective communication is the one skill most lacking in university graduates. It is true in the critical practices we tend to admire most, where architects design information to help shift the issues. And it is true for the loftiest questions of cultural evolution, such as changes in literacy itself. Meanwhile, information design is needed at the heart of this school's culture—studio reviews—where simply explaining most work, even among insiders, consumes amounts of time that are astonishing by the norms of university life.

This course will introduce you to first principles of visual explanation. It assumes that you have some background in philosophies of representation, practices of geometric modeling, and conventions of architectural drawing. Here the focus is on narrative structure. We will compose simple narratives from images, drawings, and diagrams. With the standard teachings of Edward Tufte as our guide, we will strive to make graphics more intelligible. Where possible, we will work toward the use of rendered three dimensional models as raw material. This year the course will focus more on time-based media and less on maps. Some participants will master some three-dimensional animation; all will learn some basic interactivity.

A series of weekly and then biweekly exercises will establish a rhythm of practice for the course. Lectures, presentations, and tech sessions will surround this rhythm of work. The last three exercises together will constitute a final project for the course, in which the modeling and interpretation of an eminent work of architecture will be the theme.

Schedule of Topics

<i>1 (1/6)</i>	Introduction
<i>concepts:</i>	Course overview
<i>technique:</i>	Using your network account
<i>exercise 1:</i>	Networked images
<i>2 (1/13)</i>	Identities
<i>concepts:</i>	Graphic design fundamentals
<i>technique:</i>	Refresher in Photoshop
<i>exercise 2:</i>	Visual identity
<i>3 (1/20)</i>	Quantities
<i>concepts:</i>	Visual display of numerical information
<i>technique:</i>	Illustrator/Freehand
<i>exercise 3:</i>	Charts, graphs, and tables
<i>4 (1/27)</i>	Distributions
<i>concepts:</i>	Spatial data systems
<i>technique:</i>	Thematic maps
<i>exercise4:</i>	Thematic map
<i>4 (1/27)</i>	Navigation
<i>concepts:</i>	Hypermedia interfaces
<i>technique:</i>	Image maps in Dreamweaver
<i>exercise5:</i>	Image map
<i>5 (2/3)</i>	Embedding
<i>concepts:</i>	Hypermedia interfaces
<i>technique:</i>	Rollovers in Dreamweaver
<i>exercise 5:</i>	Hyper map
<i>7 (2/17)</i>	Review
<i>presentation:</i>	Review of exercises 1-6

Schedule of Topics (continued)

- 8 (3/2) **Three dimensions**
concept: Shifting literacies
technique: Revisiting three dimensions
 extra: Essential techniques in 3D
exercise 7: Form
- 9 (3/9) **Assemblies**
concept: Hierarchies and references
technique: Strategic use of 3D modeling
 Exercise 7 continues
- 10 (3/16) **Light**
concept: Revisiting rendering; escaping literal pictures
technique: Lighting in 3DS
exercise 8: Illumination
- 11 (3/24) **Atmosphere**
concept: Strategies in rendering
technique: Global illumination in 3DS
 Exercise 8 continues
- 12 (3/30) **Narrative**
concept: Overview of nonlinear narrative
technique: Assembling a project for the web
exercise 9: Analytic decomposition
- 13 (4/6) **Motion**
concept: Concepts in 2D and 3D dimensional animation
technique: Basic 2D animation
 extra: Kinematics and 3D animation
 Exercise 9 continues
- 13 (4/13) **Interactivity**
concept: Exploring further in information design
technique: Multimedia integration
 extra: Production pointers.
- 4/20 **Final presentation**

Exercises

The first part of the course is built around weekly exercises with furnished topics and data. These will be quite self-contained, and should not take too much time.

1. **Networked images:** This will get you online. We will build a shared mosaic of images that evolve in response to one another on a daily frequency.
2. **Visual identity:** A straightforward poster project to recall basics of graphic design, such as iconography, type, color, and composition.
3. **Numerical graphics:** In a classic Tufte-inspired exercise on resonance of form and content we will redesign some found charts and graphs.
4. **Thematic map:** Without time to delve into geographic information systems (GIS) themselves, this is a quick look at the selective and intentional nature of maps.
5. **Navigation:** A quick look at simple web graphics, with emphasis on clickable image maps.
6. **Embedding:** The use of rollovers and annotation in web graphics.

The second part of the course is built around a cumulative set of exercises at narrating form. Time investment will vary more in this stage of the course, according to the skills and ambitions of participants.

7. **Form:** As a basis for remaining exercises, we need to collaborate on a few geometric models, with particular attention to assembly hierarchy.
8. **Illumination:** *This is about lighting, literally, but also about emphasis and interpretation, in the more ancient sense of the word "illumination."*
9. **Motion:** *Time based analysis in 2D or 3D animation (participants will have a choice). Not a flythrough; the focus here is on taking apart an assembly.*

Content will be explanations of historical architectural form. Teams will build and share 3D models for use in final projects, which will have both individual and group components.. What is the relationship between elements such as pictures, plans, diagrams, and maps? How do you use a 3D model as a base, rather than a finished product, in spatial explanations?

Course grades will be based on entirely on work done in these exercises. Exercises in the latter half of the semester (7-9) will count equally in total, or twice as much each, as much as those in the first half. Criteria will include form, content, clarity, and development.

Resources

TEXTS

Our textbooks are the standard works of Edward Tufte, self-published through his Graphics Press, which are recommended in the following priority.

Envisioning Information (1990)

The Visual Display of Quantitative Information (2nd edition 2001)

Visual Explanations (1997)

Suggested further readings on architectural graphics, visual literacy and information design will be posted online as necessary.

NETWORK

- > This course will make frequent use of your public html directory in your university network account. This service is a part of your basic computing package and support is available through campus computing.
- > Text files of assignments, technical supplements, and this syllabus will be posted on Course Tools.
- > Announcements will be made (by anyone who needs to do so; not only the instructor) by e-mail to the group informationdesign@umich.edu

SOFTWARE

Participants are expected to be proficient at 3-dimensional modeling and 2-dimensional image processing prior to entering the course. Although some attention will be devoted to refreshing those skills, our main emphasis will be on illustration, rendering, and interactivity. Through a short technical demonstration each week, the course will provide exposure to Photoshop, Freehand, Dreamweaver, Flash, and 3D Studio Max. Participants are naturally welcome to work in equivalent media on the basis of availability and experience. The course does not emphasize training in software operations as an end in itself.