ARCH 498
DESIGN COMPUTING THEORY
3 Credits
Prerequisite: Computer literacy (Arch 370 or permission)

Instructor
Mark D. Gross

Course Description
The emergence of the digital computer as a mainstream tool in architectural design has already changed architectural practice. As with other technologies that revolutionized the practice of architecture (e.g., perspective projection), information technologies carry hidden implications about the process and products of design. This course examines the theory of design practice from various viewpoints, recognizing the relationship between design theory and computational tools for practice. Topics to be considered include: the study of designing and designers, mathematical and linguistic metaphors and methods, case studies and precedents as a way to design, pattern languages, and other approaches to designing that have been influential and may form the basis of current or future design software. As appropriate for a course on “theory”, participants will be responsible for reading and discussing selected texts. Where possible, specific software prototypes and products will be explored. Each participant will be responsible as well for a term project examining in more detail processes for designing and current or possible computational support. Emphasis will be on original work, rather than replaying previously elaborated themes.

Course Objectives
Participants will become familiar with theories of design process and their implications for computational design tools. Participants will -- through debate, discussion, and argument -- see the relative merits of various theories of designing.

Course Requirements
Attendance and participation in discussions during class.
Written summaries of readings; term paper or project.
Discussions and written responses to readings: 40%
Final paper or project: 60%

Course Evaluation
Discussions and written responses to readings: 40%
Final paper or project: 60%

Required Texts
2001 edition (readings vary with each course edition)
The Design Studio, Donald Schon, RIBA Publications, London 1985 part III
The Atoms of Environmental Structure, Alexander & Poyner
Animate Form, Greg Lynn,

Recommended Readings
See also: The Thinking of Thoughts (Ryle)
Alexander, C.A Pattern Language