Course 4.183
Emergent Design Workshop
Units: 3-0-9
Level: H

URL: mit.edu/hyperarchitecture/www
First Class | Monday 12-Feb-01 2-4 PM | Room 3-415

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RA’s: Joseph HO, Edwin LAU

Collaborators:
Professor Shi-Chang WOOH
MIT, Civil & Environmental Engineering

Fred ADICKES
Vice President, Creative Technologies (CTEK)

Prerequisites:
3D digital modeling and/or advanced physical modeling skills.
Programming experience is useful but not required.

The Emergent Design Group (EDG) has been developing interactive, algorithmic and parameter based tools for the past three years with a focus on material form and formative processes in architecture. The workshop will participate in EDG’s Hyperarchitecture research program that is developing a new spatial and tectonic language based on an in-depth understanding of advanced materials. Composite materials, combined with new design and manufacturing processes, thin film photovoltaics and other embedded technologies, are beginning to radically transform architectural possibilities. In the workshop individual and team projects will focus on morphology, detailing, prototyping, and simulating performance using a wide range of media, materials and techniques. Projects may include, for example, detailed design of pultruded tensile structural envelopes; applications of manufacturing processes including weaving and spinning to the design of specific components; investigation of the properties and aesthetic qualities of resin matrix materials; applications of embedded systems and technologies; and experimental applications of parameter-based computation techniques to form generation. The workshop will benefit from collaboration with MIT labs and faculty as well as the support of Creative Technologies (CTEK). Based in California, CTEK utilizes the latest laser scanning, digital measuring and CAD/CAM technology to provide precise dimensional control throughout the design, development and tooling process. Field trips to area prototyping shops, manufacturers and guest lectures will supplement course work. An optional field trip to Los Angeles will be organized during spring break to visit CTEK, the office of Frank Gehry and Associates, and a series of prototyping and manufacturing facilities.