SHAPE GRAMMARS

Shape grammars is a powerful formal system for the generative description of designs. Their unique difference with all other generative systems is that they perform entirely visual computations rather than symbolic (scripting) computations. Shape grammars are intended to form a basis for purely visual computation and in this sense they belong in the heart of design education and practice – both in precedent analysis and in a studio setting.

The course discusses the foundations of shape grammar formalism, provides a constructive understanding of the formalism through hands-on workshops and offers a generous overview of the history and logic of several of its applications in design research. The course will focus on two parallel trajectories: a) the systematic exposition of basic rule schemas and the ways they are ordered and combined in sums and products to produce a compositional taxonomy of design; and b) the formal generation of specific languages of design including Palladian villas, F.L.Wright prairie homes, Terragni’s apartments, Siza’s housing projects, Mughul gardens, Japanese Tea houses, Hepplewhite chairs, Mies’ courthouses, Portman hotels, Zumthor’s baths, and so forth.

Students are expected to attend the lectures, participate in the discussions, read the weekly readings and do two design studies and one final project. The grade for this course is divided in the following sections: attendance / participation: 10%; two studies: 25% each; and final project: 40%.

The course is open to all students with an interest in formal (spatial / mathematical) analysis and composition in design.