

48727 Inquiry into Computational Design

The subject of this course is the emergence of computation as a pivotal concept in contemporary architecture and other design fields. It explores design theories and practices responding to the so-called “computer revolution,” cybernetics, artificial intelligence, and the linked transformations on our conceptions of design, creativity, nature, body, and place. The course looks at computation beyond particular technologies and tools to develop a critical understanding of a rapidly expanding landscape of hybrid practices, theories, and methods linked to computational modes of creative and scholarly practice. The semester is divided into two-week thematic modules, often with faculty guests covering topics derived from their own research, including readings and a team-based project expanding on the topic introduced. Topics include paradigms such as shape grammars, tangible interaction, machine learning, rule-based systems, responsive environments, and architectural robotics, among others. In conjunction with these, the class includes materials aimed at developing an awareness of the role technologies play in enforcing biases and inequities, and at engaging with questions of race, gender, and class as they play out in computational design contexts or are enacted via computational design systems. The course also introduces the rudiments of academic research, in particular the elements and structure of an effective research paper. Participants practice reading and responding to both foundational and recent literature related to the topics introduced in class.