Course Description

This course provides a broad overview on concepts and technologies in digital design and fabrication. Topics in digital design include methods for modeling freeform curves, surfaces, and solids, and techniques for algorithmic design of complex three-dimensional shapes. Topics in digital fabrication cover computer methods that transform computer-aided design models into machine instructions, including slicing, support generation, and path planning.

Recent progress in manufacturing processes, e.g. additive manufacturing, has led to disruptive opportunities for technological advances across multiple fields. These processes have also been increasingly democratized amid growing maker movement, where designing, fabricating and selling a manufactured product have become more accessible than ever before.

The new course aims to provide students both cutting-edge knowledge and hands-on project experiences in digital design and fabrication. It will involve Python based computer programming for creative shape design. It will also involve 3D printers and laser cutters in the ME Instructional Lab and Grainger Maker Space.

Prerequisite: Undergraduate senior standing or graduate students
Time: TR 9:30 am to 10:45 am
Room: Mech Engr 1152
Instructor: Prof. Xiaoping Qian
Email: qian@engr.wisc.edu

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