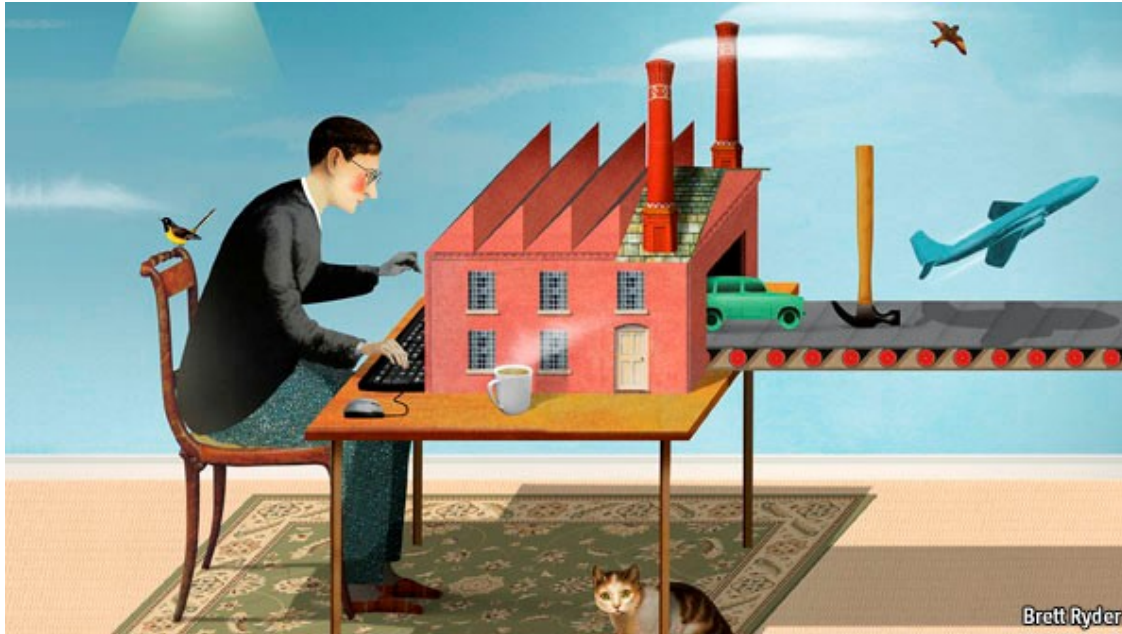


New Course (Fall 2017)

# ME 601 Digital Design & Fabrication



*Future of 3D Printing, The Economist, April 2012*

## Course Description

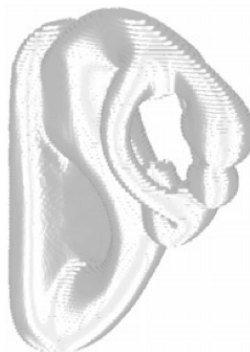
This course provides a broad overview on concepts and technologies in digital design and fabrication. Topics in digital design include methods for modeling freeform curves, surfaces, and solids, and techniques for algorithmic design of complex three-dimensional shapes. Topics in digital fabrication cover 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.

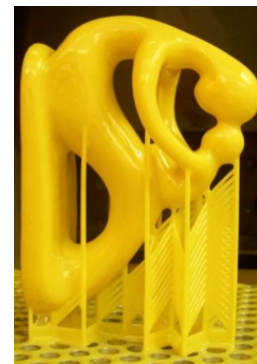
The new course aims to provide students both cutting-edge knowledge and hands-on project experiences in digital design and fabrication. It will involve Python based computer programming for creative shape design. It will also involve 3D printers and laser cutters in the ME Instructional Lab and Grainger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



(a) 3D model



(b) Slices



(c) 3D printed part

**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

**Acknowledgment:** This course is supported in part by a CoE Education Innovation Fund.