



Digital Making Seminar Spring 2016



When : Mondays 2:00 -5:00 pm
Where: Illinois MakerLab , BIF 3030
With : about.me/vishalsachdev
Why : Learn, Make and Share with
tools for Digital Making
#3Dprinting #3DModeling
#arduinios #laser cutters
#lilypad #iot #design

Course Overview & Schedule

The next industrial revolution is upon us. The recent development of desktop 3D printing, desktop CNC machines and programmable cheap/open hardware is part of a broader trend towards the democratization of low cost and small-scale production tools that enable individuals to increasingly make the things they consume (Behar 2012), as well as become entrepreneurs. This trend, which has been dubbed the “Maker Movement” is gaining increasing attention among both scholars and practitioners. For example, Malone and Lipson (2007) argue that, “The ability to directly fabricate functional custom objects could transform the way we design, make, deliver, and consume products” (p. 245). More succinctly, *Wired* has declared this movement, “The Next Industrial Revolution” (Anderson 2010).

This seminar course will help you get trained on many of these tools and technologies. At a general level, you will convert Bits(digital) to Atoms(physical) and back. We will explore 3D scanning, modeling and printing to rapidly prototype products with additive manufacturing. We will experiment with desktop Lasers and CNC machines to understanding the power of subtractive manufacturing on your desktop. We will code on open hardware /micro-controllers such as arduinos and smaller form factors for e-textiles, to explore the concept of the internet of things. We will also have guest lectures in entrepreneurship, design thinking, digital making and some stories from passionate makers from the community and beyond.

January 25	Introductions and Overview of “Making” / Alum Presentations
February 1	Additive Manufacturing/Rapid Prototyping/Design Thinking
February 8	Design thinking Workshop
February 15	3D PRINTING 101 + Basic 3D Modeling with TinkerCad
February 22	3D MODELING with Fusion 360 - Basics
February 29	Arduino/Lasers/Vinyl/Digital Embroidery
March 7	Arduino/Lasers/Vinyl/Digital Embroidery
March 14	Arduino/Lasers/Vinyl/Digital Embroidery
	Project Proposals Due
March 21	SPRING BREAK
March 28	# Maker Stories - Guest Speakers
	Project finalized
April 4	3d Scanning - Basic + Advanced
April 11	3D MODELING - Fusion 360 - Advanced
April 18	Assemble a 3D Printer !!
April 25	Project work - Design/Prototype/Build
May 2	Final Portfolio Presentation

Assessment

LEARN	MAKE	SHARE
Learn the various techniques, collaborate and curate existing resources for digital making.	Make products during and after the workshops and document your learning.	Share your learning and creations with the world, using digital tools to engage with, contribute to and learn from such communities of learning.
33%	33%	33%

Learn: You will learn each week and will “Make things” in those sessions, or on your own following the session. You will be asked to collaborate, curate and perhaps create some new content that helped you learn, and can help others learn.

Make: Making is a focus, so for each technique you learn, you will use that knowledge and create something new, sometimes different from what you made in the session itself. There will be a project or you can participate in [CU Make 2016](#).

Share: Share your work/learning on twitter and on the [Digital Making blog](#) . You will also share your creations with the class, in sessions where possible. You might be asked to prepare an instructable style submission.

About Me: <http://about.me/vishalsachdev> : I am the Director of the MakerLab, and a faculty member in IS/IT in the college of business. I like tinkering with digital tools, and passionate about digitalmaking. Join me in this journey of exploring your passions in making : digitally.

References:

Anderson, Chris (2010), “Atoms are the New Bits,” *Wired*, 18 (February), 58-67 & 105-106.

Behar, Yves (2012), “Design for All,” *Wired*, (October), 134-135.

Malone, Evan and Hod Lipson (2007), “Fab@Home: The Personal Desktop Fabricator Kit,” *Rapid Prototyping Journal*, 13 (4), 245-255.