SPEG013: Design and Make Cool Gadgets

Singapore Polytechnic
FablabSP/School of EEE

Module Objective

- Introduce students to core 21st century digital fabrication tools & technologies

- Spark an interest in **S**cience, **T**echnology, **E**ngineering, **A**rts, **M**athematics through making and tinkering using digital fabrication tools
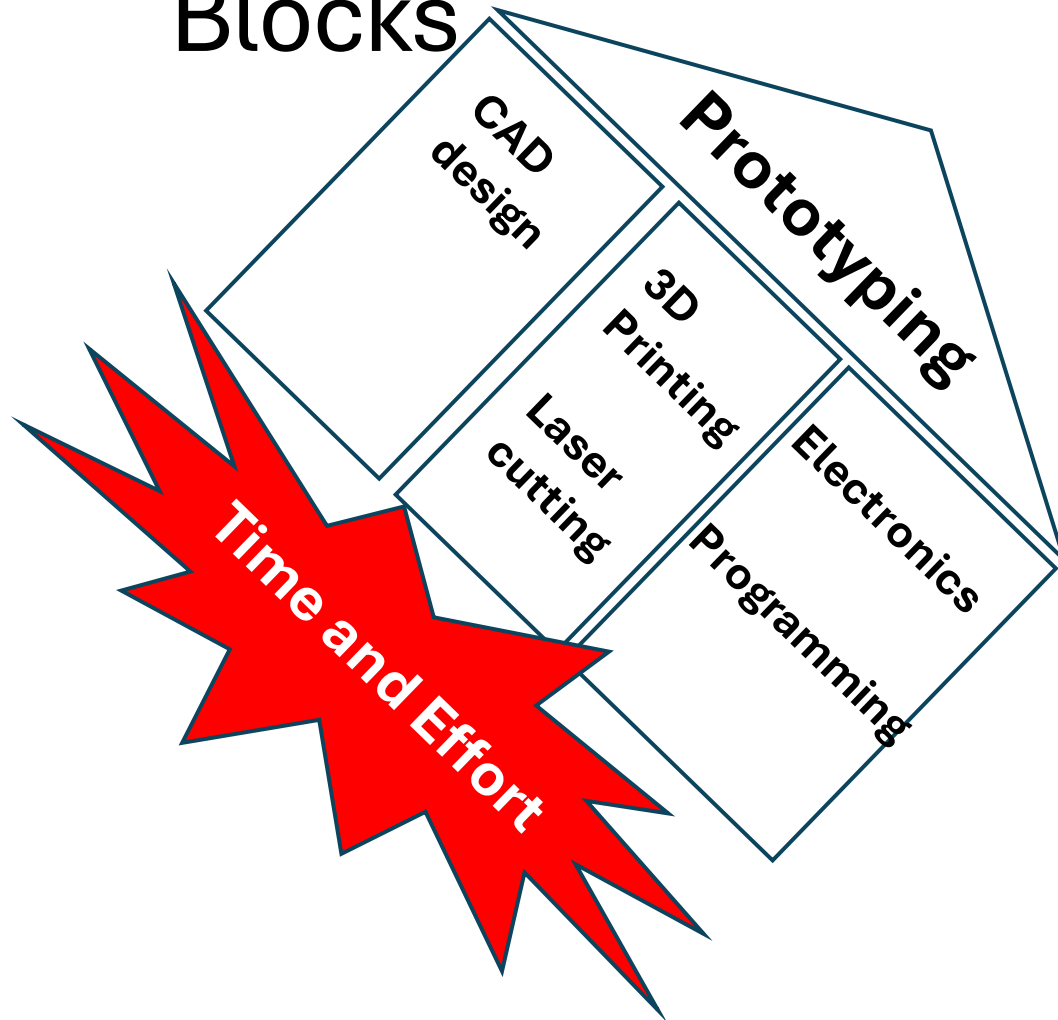
- Design & make cool gadgets

Learning Outcomes

- Acquire digital fabrication skills
- Develop diagnostics and troubleshooting skills
- Immerse in prototyping process
- **MAKE** things
- Have **FUN**

Assessments

- Presentation (on prototypes made)
  - Final project 3-4 per group, comprising
  - Electronics exercise
  - Arduino/DigiSpark exercise
  - 3D printing
  - Laser cutting
- Quiz at the end of lesson (individual)

Digital Fabrication: Building Blocks

Cool Gadgets

Prototyping

CAD design

3D Printing

Laser cutting

Electronics

Programming

Time and Effort

GET EXCITED AND MAKE THINGS

Poster source: matthew margain

Schedule

- Day1 AM: CAD, 3D printing + mission brief
  Day1 PM: Design & modelling for laser cutting

- Day2 AM: Electronics & Embedded Programming
  Day2 PM: Monitoring & Control of environment

- Day3 AM: Mini Project
  Day3 PM: Presentation + Quiz

Q&A

References

1. How Does Silicon Valley teach its children with a fablab [Forbes]
   http://www.forbes.com/sites/victorhwang/2013/08/07/how-does-silicon-valley-teach-its-children-with-a-fablab/
2. Makers Workshop: first sessions [Tinkering School, San Francisco]
   http://sf.tinkeringschool.com/blog/2013/12/29/makers-workshop-first-sessions