Aalto University
Media Factory

Digital_Fabrication_Studio.00
Introduction to the course

Massimo Menichinelli
massimo.menichinelli@aalto.fi
@openp2pdesign
http://www.slideshare.net/openp2pdesign

CC BY NC SA

Aalto University
Media Factory

About Massimo...

1. MSc in Industrial Design, Politecnico di Milano (Milan,Italy)
2. Doctoral Candidate at Media Lab Helsinki (Department of Media)
3. FabAcademy guru! (FabBootCamp 2012 @ FabLab Barcelona)
4. FabAcademy guru! (FabAcademy2012 @ FabLab Amsterdam)
5. Many years of workshops & lectures (Italy, Spain, Finland, Germany, South Korea, Singapore, Mexico, Colombia,...)
6. Experience in Industrial Design, Service Design, Interior Design, Web Design...
7. Worked at the development of 3+ FabLabs (Aalto FabLab, Muse FabLab, OpenDot...)

* **Linkedin:** http://fi.linkedin.com/in/massimomenichinelli
* **My website:** http://www.openp2pdesign.org
* **Twitter:** https://twitter.com/openp2pdesign

25438 Digital Fabrication Studio

Slides, dates, news:
https://noppa.aalto.fi/noppa/kurssi/25438/esite

Meeting Room:
https://connect.funet.fi/dfs-classroom/

Questions:
massimo.menichinelli@aalto.fi

25438 Digital Fabrication Studio #01

22nd April 2014 9:00 - 12:00: **Digital Fabrication and FabLabs**: the current ecosystem and its possibilities.
22nd April 2014 13:00 - 16:00: **Media, business, platforms**: their role in the digital fabrication ecosystem

23rd April 2014 9:00 - 10:30: **Information** management for a digitally fabricated project.
23rd April 2014 13:00 - 16:00: **Version control systems: Git+GitHub**

24th April 2014 9:00 – 12:00: **Intellectual property and Open Design** for a digitally fabricated project.

24th April 2014 13:00 - 16:00: **Version control systems: Git+GitHub**

25438 Digital Fabrication Studio #02

25th April 2014 9:00 - 12:00: **Laser cutting**: technology, processes and design techniques.
Homework: Design and fabricate a laser cut box or interlocking object.

28th April 2014 9:00 - 12:00: **3D Scanning:** technology, processes and design techniques.
Homework: Develop and refine a 3D scan of yourself.

29th April 2014 9:00 - 12:00: **CNC Milling:** technology, processes and design techniques.
Homework: Mill your previous 3D scan.

25438 Digital Fabrication Studio #03

30th April 2014 9:00 - 12:00: **Molding and casting**: possibilities, processes and design techniques.
Homework: Create a mold and a final object out of it.

02nd May 2014 9:00 - 12:00: **3D Printing**: technology, processes and design techniques.
Homework: Design or modify a small object and print it in 3D.

25438 Digital Fabrication Studio #04

5th May 2014: **Project development:** concept

6th May 2014: **Project development:** concept

7th May 2014 9:00 - 12:00: **Project revision:** Concept

8th May 2014 9:00 - 12:00: **Project development:** project + prototype

9th May 2014 9:00 - 12:00: **Project development:** project + prototype

= I will follow your project online + remote presentation for revision

25438 Digital Fabrication Studio #05

12th May 2014 9:00 - 12:00: **Project revision**: project + prototype

13th May 2014: **Project development:** prototyping

14th May 2014: **Project development:** Final version

15th May 2014: **Project development:** Final version

16th May 2014: **Final project development + presentation**

= I will follow your project online + remote presentation for revision

Recommended bibliography

* Gershenfeld, N. (2000). *When Things Start to Think*. Holt Paperbacks.
* Gershenfeld, N. (2005). *FAB: The Coming Revolution on Your Desktop--From Personal Computers to Personal Fabrication*. Basic Books.

* Hudson, J. (2011). *Process 2nd Edition: 50 Product Designs from Concept to Manufacture (2nd ed.)*. Laurence King Publishers.

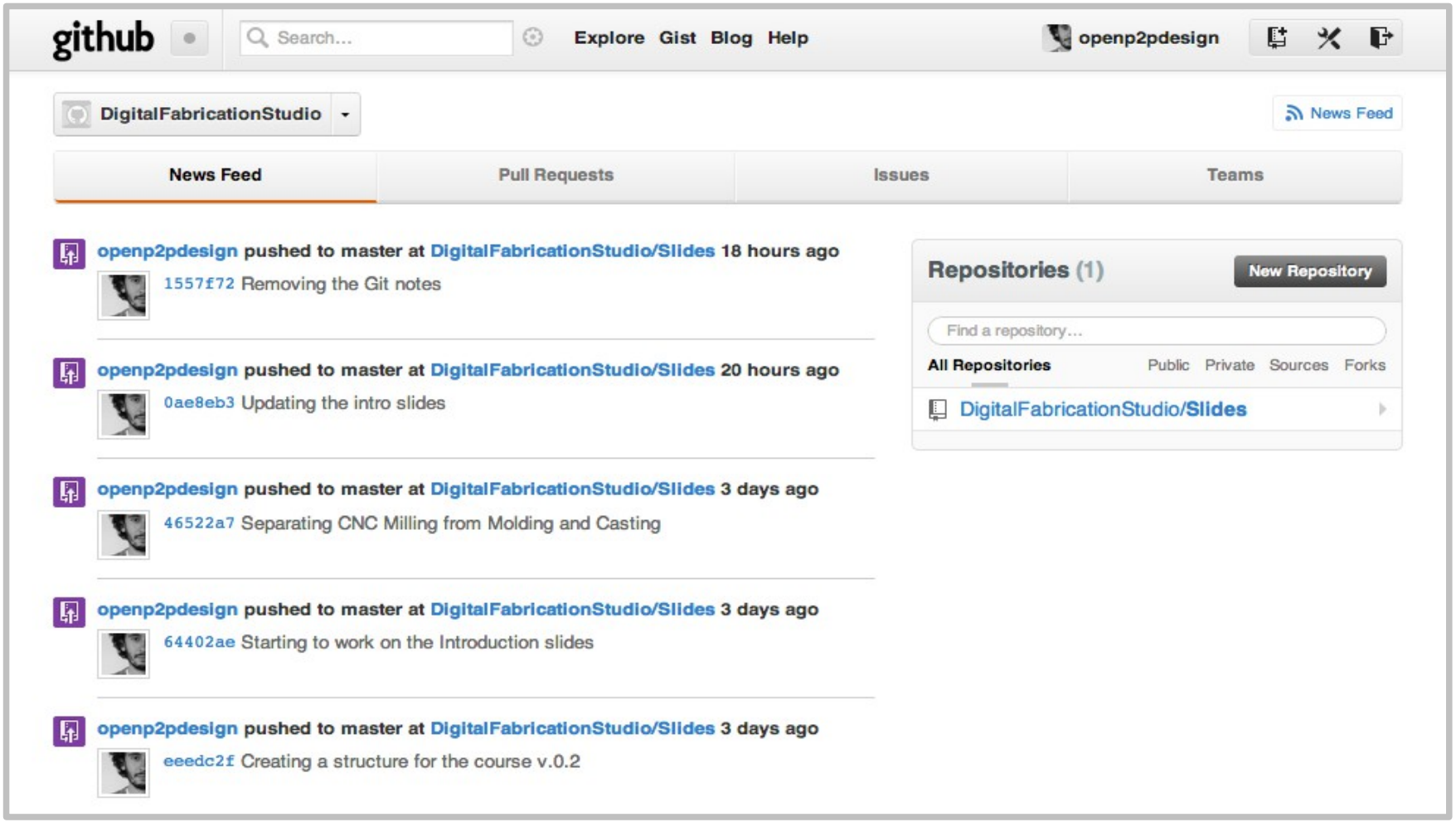
* Sterling, B. (2005). *Shaping Things (1st ed.)*. The MIT Press.

* Thompson, R. (2011). *Prototyping and low-volume production*. London: Thames & Hudson.

* Thwaites, T. (2011). *The Toaster Project: Or a Heroic Attempt to Build a Simple Electric Appliance from Scratch*. Princeton Architectural Press.

* Reas, C., & McWilliams, C. (2010). *Form+Code in Design, Art, and Architecture (1st ed.)*. Princeton Architectural Press

Digital Fabrication Studio @ GitHub



Where you will find the slides, all the material, and where you will work and document your project!

Source: https://github.com/organizations/DigitalFabricationStudio

Assignments for this course

- Small exercises for practicing with the technologies.

+

- A final project for understanding and managing the design process and tools.
- A physical object.
- A digital documentation of the process of designing an manufacturing the object on GitHub / BitBucket
- A final presentation (Pdf.) of your project and its development.

Evaluation of this course

- Your final project (quality, complexity/time needed)
- The quality of the physical object.
- The quality digital documentation of the process of designing and manufacturing the object.
- The quality of the presentation of your final project.
- Your collaboration with everybody in this course (me and you)

Suggestions for this course

* Think about **a simple project**: it doesn't have to save the world, just make you learn digital fabrication and it has to be completed on time
* **fail early, fail often**: we are all prototyping (your projects, this course, this lab...)
* you can **use the lab** even outside of the course hours
* **you decide** how much time to spend for testing and how much time for developing the project; I will help you, don't worry!

Suggestions for this course

* **explore**: a 100% original project is not required (does it exist?), learn from others and just don't reinvent the wheel
* **but be careful with intellectual property**! Only use resources you can work and redistribute freely. Ask for help
* I will evaluate the project but especially if you have learnt the process, the tools and if you have **collaborated** or helped each other!
* **Always document and publish on GitHub**, it is where I will see if you have worked or not. It is mandatory for passing the course!

Licensing your work

* We are going to use **GitHub for Open Source projects**, so everything will be accessible to everybody. If it's an issue, you will use BitBucket.
* So publish / share only what you think anybody else can have access to. **Do not share what you want to keep private / secret** (or if you don't have rights to)
* You can choose **a specific Creative Commons license** for your project and exercises.

Aalto University
Media Factory

Thank you!!

Massimo Menichinelli
Aalto Media Factory
massimo.menichinelli@aalto.fi
@openp2pdesign

CC BY NC SA

Aalto University
Media Factory