



Aalto University  
Media Factory

# Digital\_Fabrication\_Studio.00

## Introduction to the course

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<http://www.slideshare.net/openp2pdesign>



10.09.2012

# About Massimo...

1. MSc in Industrial Design, Politecnico di Milano (Milan, Italy)
2. Doctoral Candidate at Media Lab, School of Art, Design and Architecture (Helsinki, Finland)
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, ...)
6. Experience in Industrial Design, Service Design, Interior Design, Web Design (more coming soon)

\* **Linkedin:** <http://fi.linkedin.com/in/massimomenichinelli>

\* **My website:** <http://www.openp2pdesign.org>

\* **Twitter:** <https://twitter.com/openp2pdesign>

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# 25438 Digital Fabrication Studio #01

**10th Sep 2012 9:00 - 12:00:** **Digital Fabrication and FabLabs:** the current ecosystem and its possibilities.

**10th Sep 2012 12:00 - 16:00:** **Media, business, platforms:** their role in the digital fabrication ecosystem

**11th Sep 2012 9:00 - 12:00:** **Information** management for a digitally fabricated project.

**11th Sep 2012 12:00 - 16:00:** **Version control systems practice:** versioning a personal profile.

**12th Sep 2012 9:00 - 12:00:** **Intellectual property, Open Design, Metadesign** for a digitally fabricated project.

**12th Sep 2012 9:00 - 12:00:** **Version control systems practice:** project management.

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# 25438 Digital Fabrication Studio #02

**13th Sept – 08th Oct:**

Work remotely on Github: development of one or more ideas for the final project, improvement of personal knowledge and skills (for example: 3D modeling...)

I will follow your work and help you!  
Please also **help each other!**



# 25438 Digital Fabrication Studio #03

**9th Oct 2012 9:00 - 12:00: Laser cutting:** technology, processes and design techniques.

**Homework:** Design and fabricate a laser cut box or interlocking object.

**10th Oct 2012 9:00 - 12:00: 3D Scanning:** technology, processes and design techniques.

**Homework:** Develop and refine a 3D scan of yourself.

**11th Oct 2012 9:00 - 12:00: CNC Milling:** technology, processes and design techniques.

**Homework:** Mill your previous 3D scan.

**12th Oct 2012 9:00 - 12:00: Molding and casting:** possibilities, processes and design techniques.

**Homework:** Create a mold and a final object out of it.

**16th Oct 2012 9:00 - 12:00: 3D Printing:** technology, processes and design techniques.

**Homework:** Design or modify a small object and print it in 3D.

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# 25438 Digital Fabrication Studio #03

**17th Oct 2012 9:00 - 12:00:** Project development: ideas & business models.

**Homework:** Final project development.

**18th Oct 2012 9:00 - 12:00:** Project development: prototyping

**Homework:** Final project development.

**19th Oct 2012 9:00 - 12:00:** Project development: Final version

**Homework:** Final project development.

**23rd Oct 2012 9:00 - 12:00:** Project development: Final version

**Homework:** Final project development.

**24th Oct 2012 9:00 - 12:00:** Final presentation

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# 25438 Digital Fabrication Studio #04

**25th Sept – 28th Oct:**

You have time for finalizing the documentation or the project. I will check the repository on October 29th.



# 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

The screenshot shows the GitHub web interface for the organization 'DigitalFabricationStudio'. At the top, the GitHub logo is on the left, followed by a search bar and navigation links: 'Explore', 'Gist', 'Blog', and 'Help'. The user 'openp2pdesign' is logged in, with icons for repository, settings, and notifications. Below the header, the organization name 'DigitalFabricationStudio' is displayed with a dropdown arrow. To the right is a 'News Feed' link. A tabbed interface shows 'News Feed' as the active tab, with other tabs for 'Pull Requests', 'Issues', and 'Teams'. The main content area lists five recent pushes to the 'DigitalFabricationStudio/Slides' repository, each with a commit hash and a description of the changes. On the right sidebar, the 'Repositories (1)' section shows a search bar and a list of repositories, with 'DigitalFabricationStudio/Slides' being the only one listed.

github Search... Explore Gist Blog Help openp2pdesign

DigitalFabricationStudio News Feed

News Feed Pull Requests Issues Teams

openp2pdesign pushed to master at DigitalFabricationStudio/Slides 18 hours ago  
1557f72 Removing the Git notes

openp2pdesign pushed to master at DigitalFabricationStudio/Slides 20 hours ago  
0ae8eb3 Updating the intro slides

openp2pdesign pushed to master at DigitalFabricationStudio/Slides 3 days ago  
46522a7 Separating CNC Milling from Molding and Casting

openp2pdesign pushed to master at DigitalFabricationStudio/Slides 3 days ago  
64402ae Starting to work on the Introduction slides

openp2pdesign pushed to master at DigitalFabricationStudio/Slides 3 days ago  
eedc2f Creating a structure for the course v.0.2

Repositories (1) New Repository

Find a repository...

All Repositories Public Private Sources Forks

DigitalFabricationStudio/Slides

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

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

# Assignment 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 and manufacturing the object.
- \* A business model for making the design and manufacturing of the object financially sustainable.



# 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...)
  - \* **explore**: a 100% original project is not required (does it exist?), learn from others and just don't reinvent the wheel
  - \* 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!
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# 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.
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# Licensing your work

- \* We are going to use **GitHub for Open Source projects**, so everything will be accessible to everybody.
  - \* 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.
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# Thank you!!

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