NIDays

ENGINEER NEXT

What is Multisim Live?

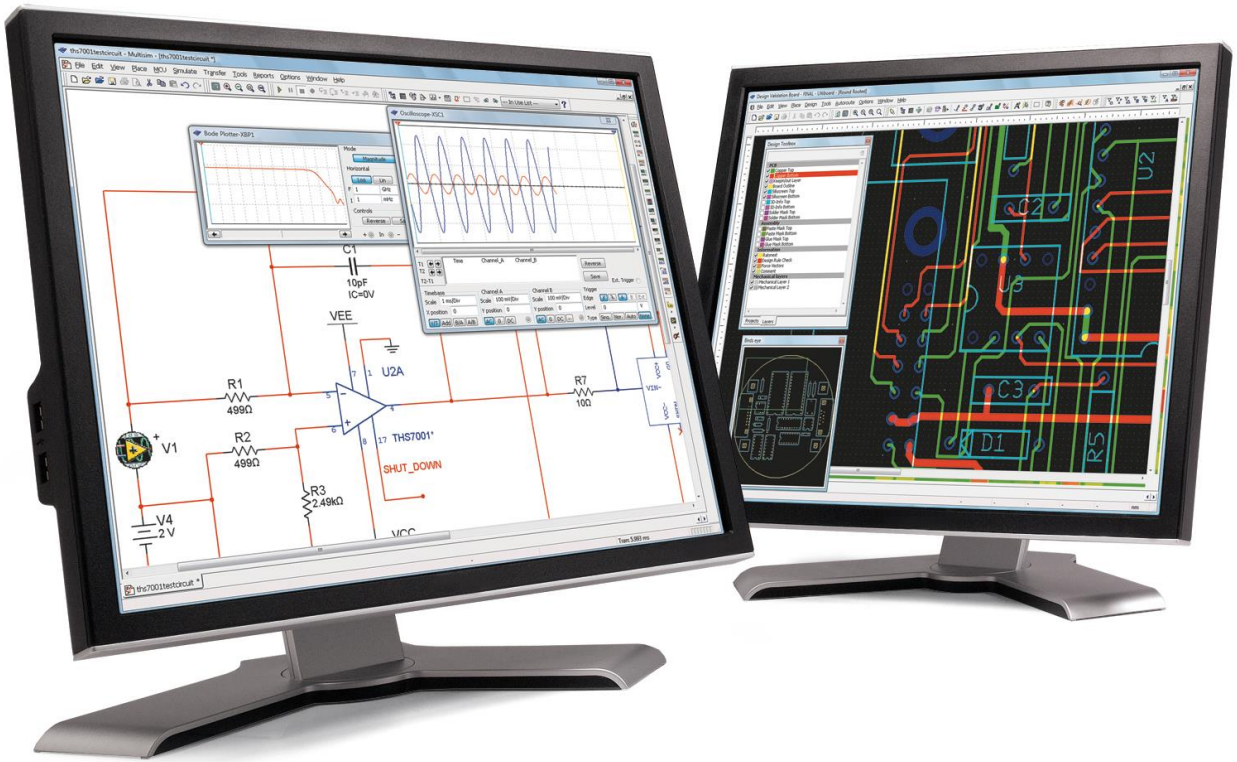
Maha Moatemri

Academic Account Manager

NI Switzerland

NI CIRCUIT DESIGN SUITE

- Multisim
- Ultiboard



NATIONAL INSTRUMENTS

Solution for Teaching Analog, Digital, and Power Electronics

Built for educators, to enable to most effectively teach analog, digital, and power electronics

Easy transition from theory to practical engineering with full hardware integration

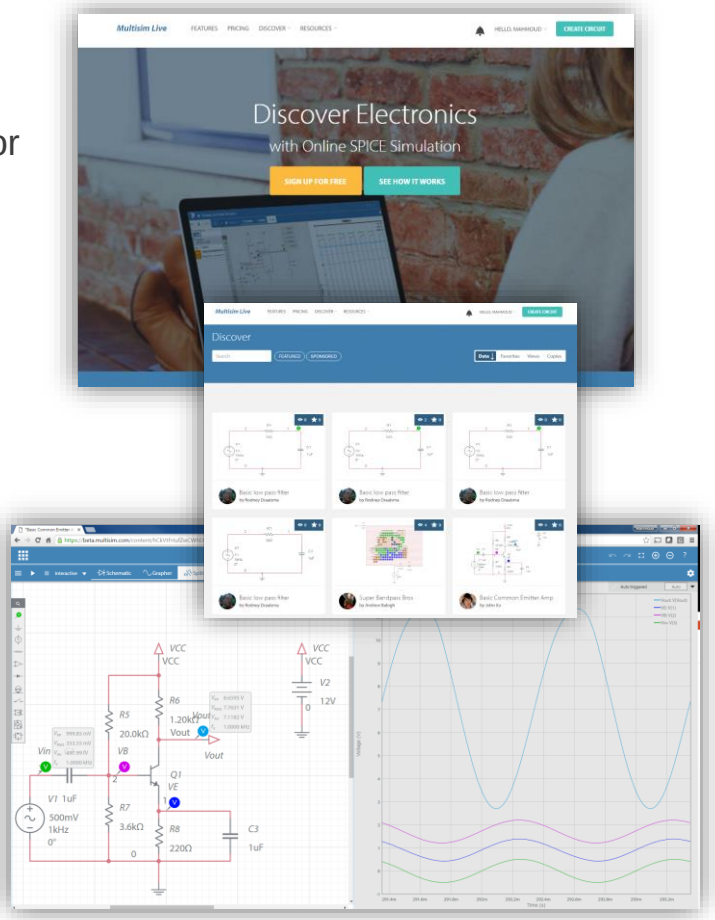
Full integration with Ultiboard professional PCB layout environment

MultisimLive™

Online, mobile-friendly and touch-optimized extension of Multisim

What is Multisim Live?

- Browser-based circuit simulation built on the same SPICE simulator in Multisim
- Modern-looking multi-platform that has been optimized to work on touch screens and smart phones
- New interactive functionality allows users to modify component values while simulation is running
- Online repository of thousands of circuits to simulate and modify.
- Save your circuits online to share with peers or create a group and post circuits to that group
- Two editions of Multisim Live: free and premium
  - Premium is part of the ASL



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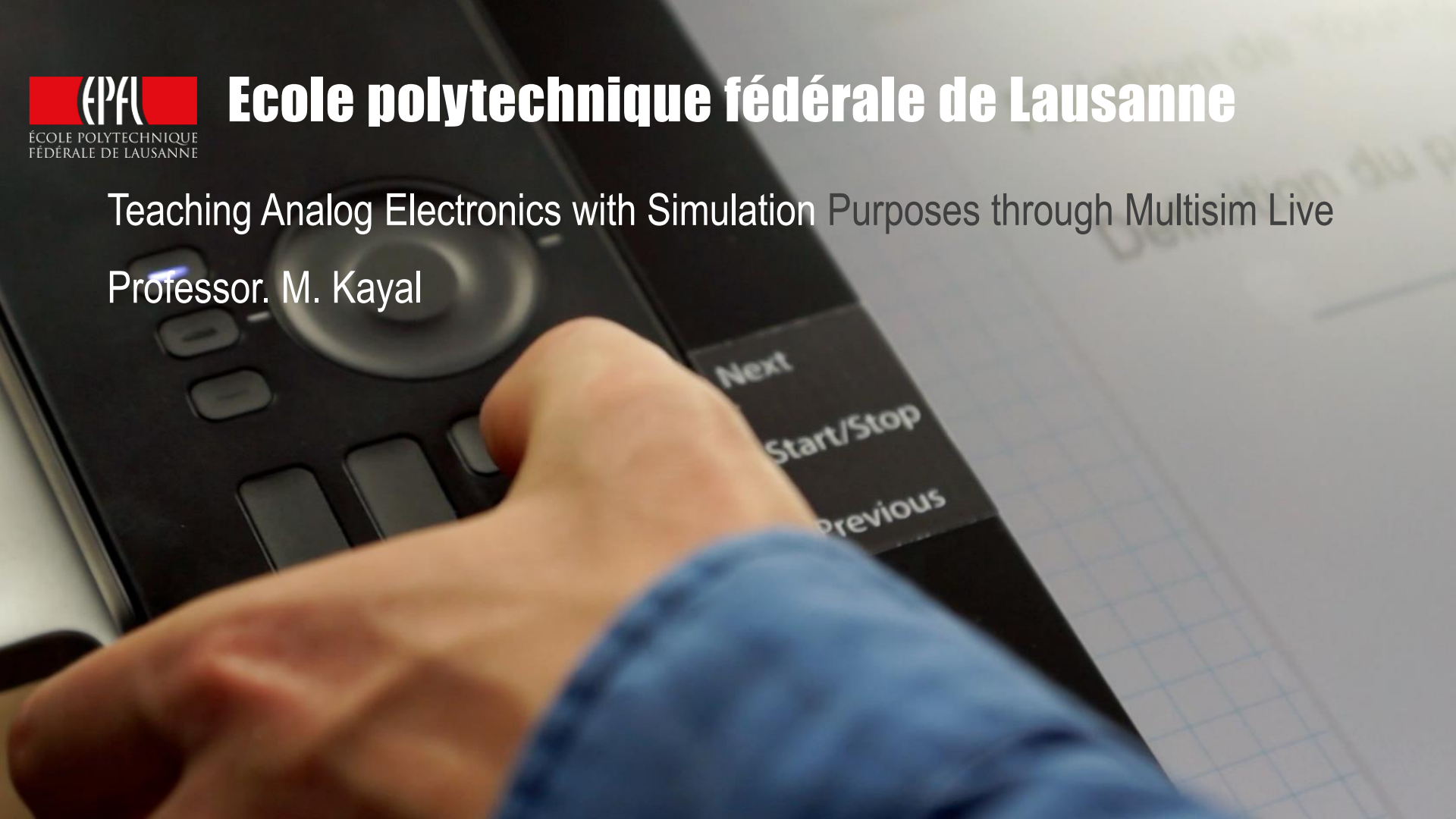

Ecole polytechnique fédérale de Lausanne

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Teaching Analog Electronics with Simulation Purposes through Multisim Live

Professor. M. Kayal

Introduction

- The Massive Open Online Courses (MOOCs) at EPFL.
- MOOCs EPFL Vision.
- Analog electronics education challenges.
- Course structure and Multisim Live.
- Demonstration.

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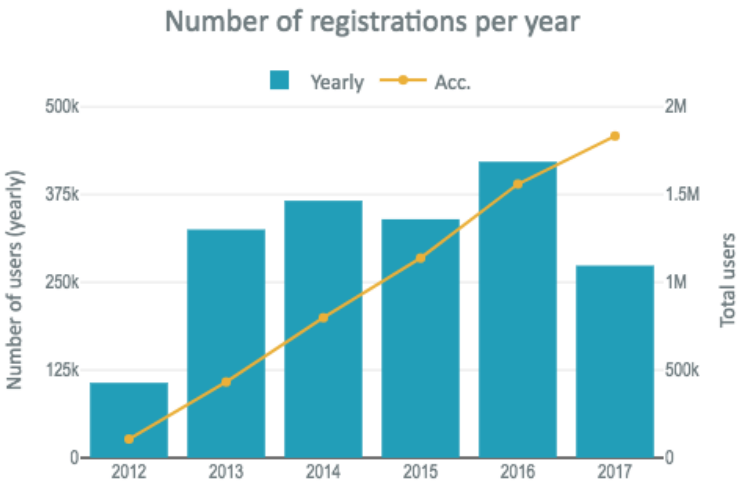
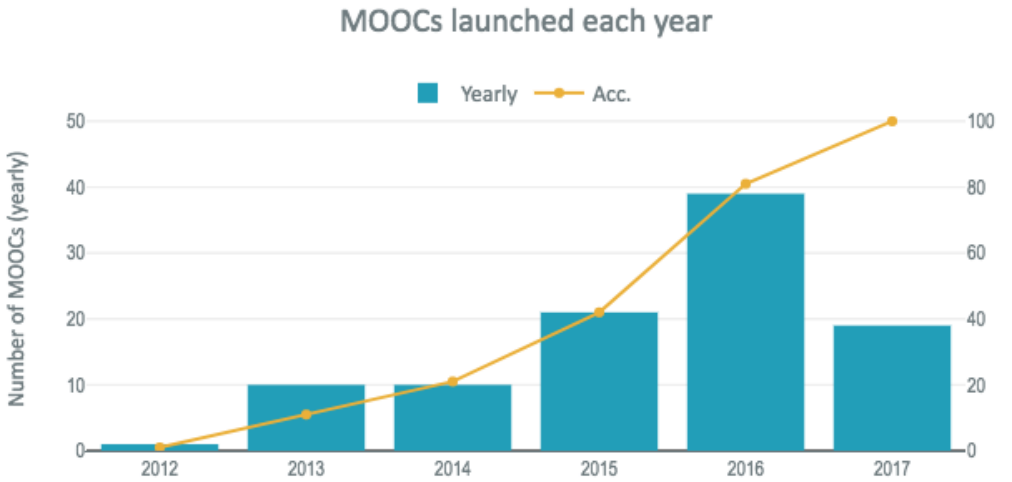
Catalogue
75 Courses (> 27 coming)
http://moocs.epfl.ch

MOOC Registrations and number of courses





1’815’471 Registrations
97‘510 Passed

77 Courses Online
35 Courses In Preparation

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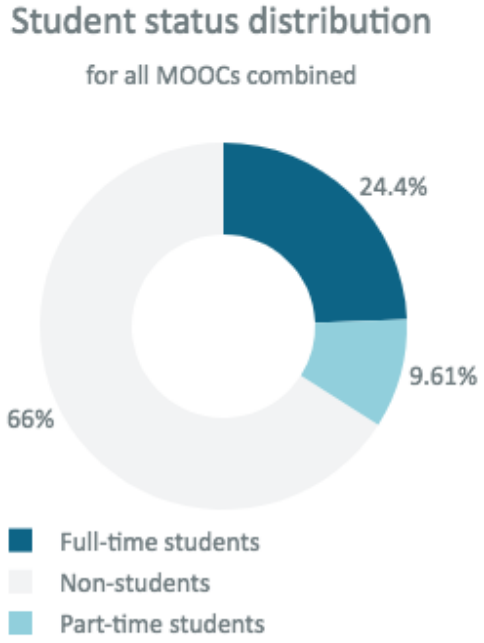
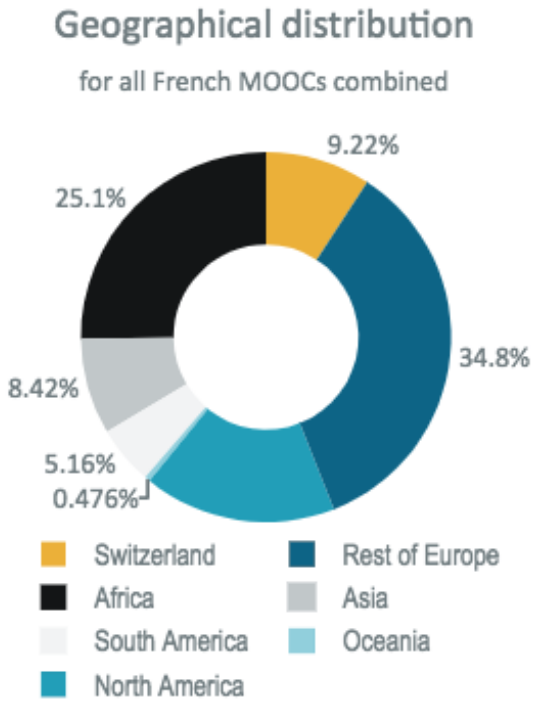
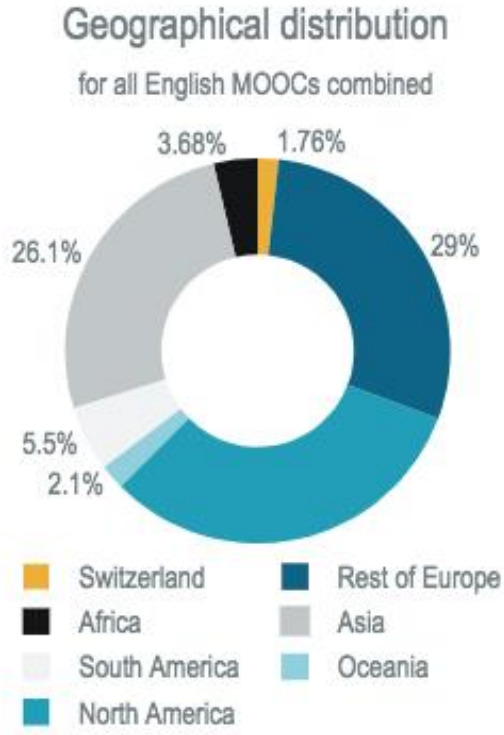
EPFL Online Education Alumni [97’510 participants passed a MOOC]

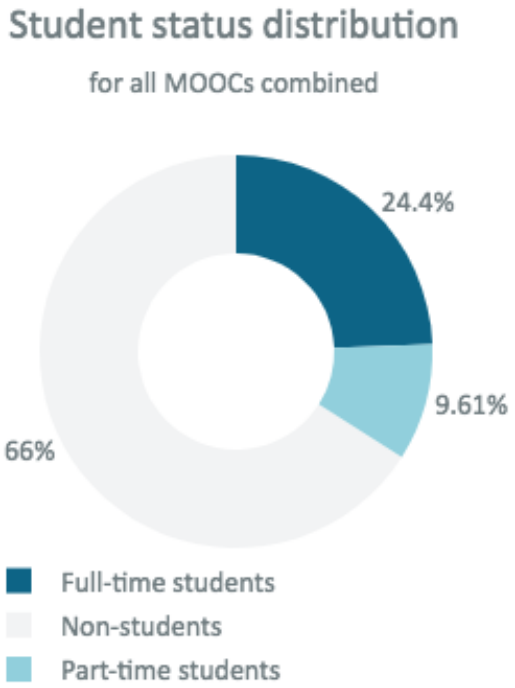
Demographics

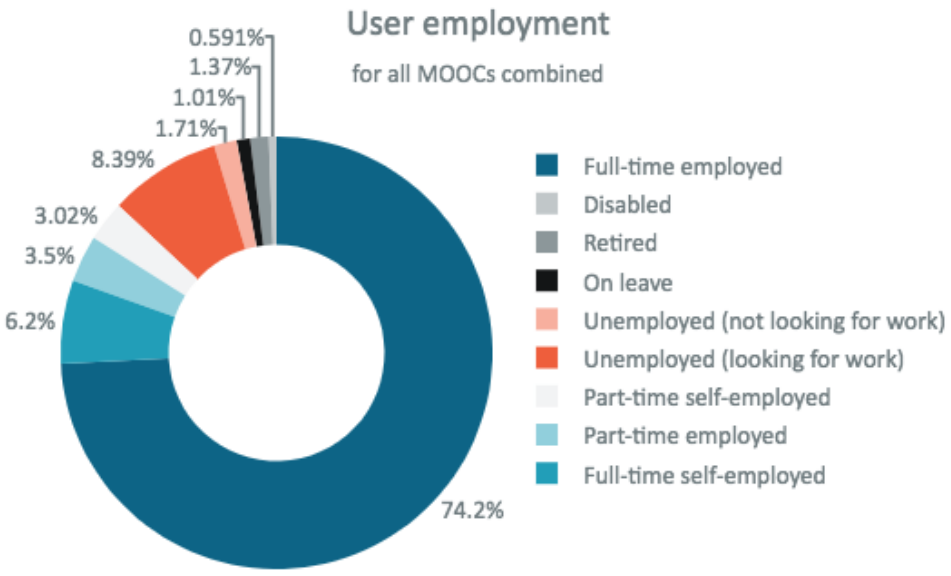






Employment status





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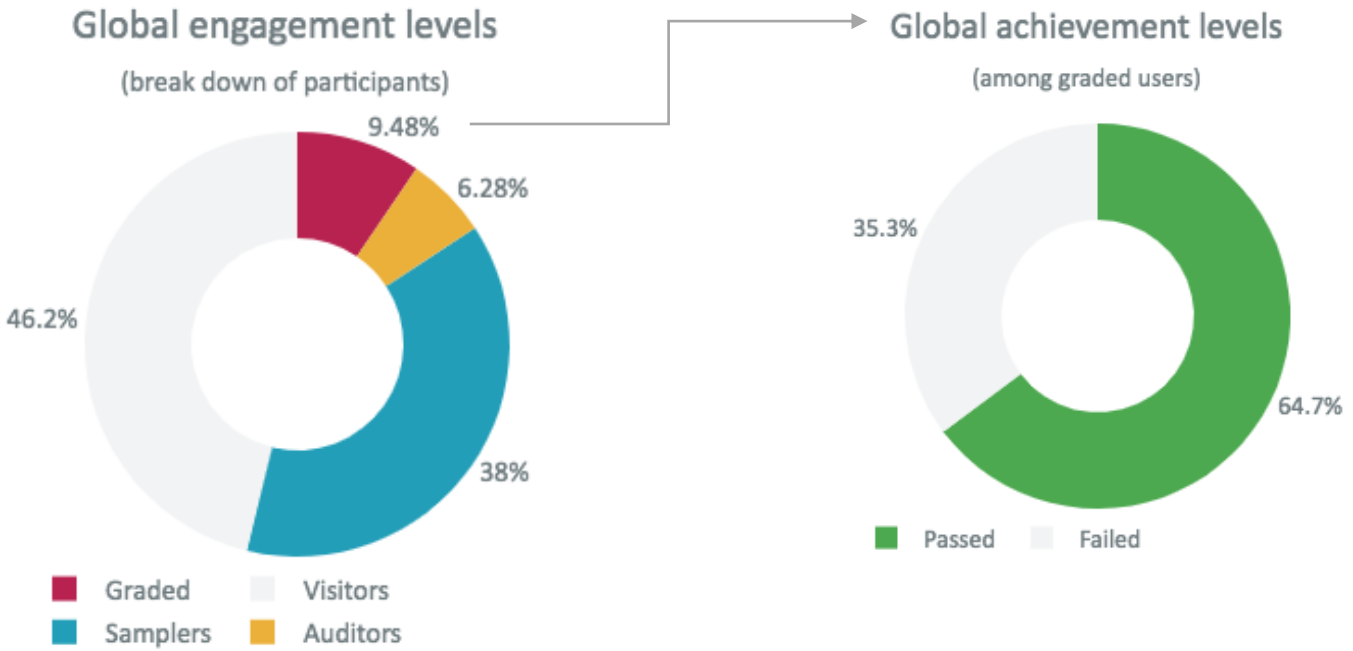
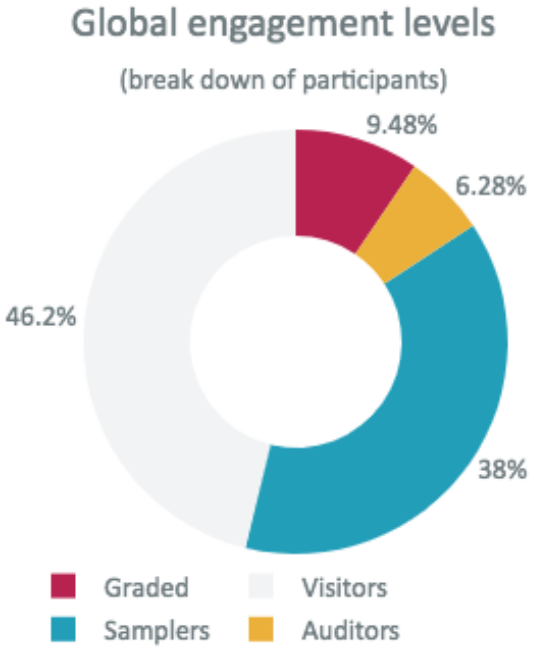
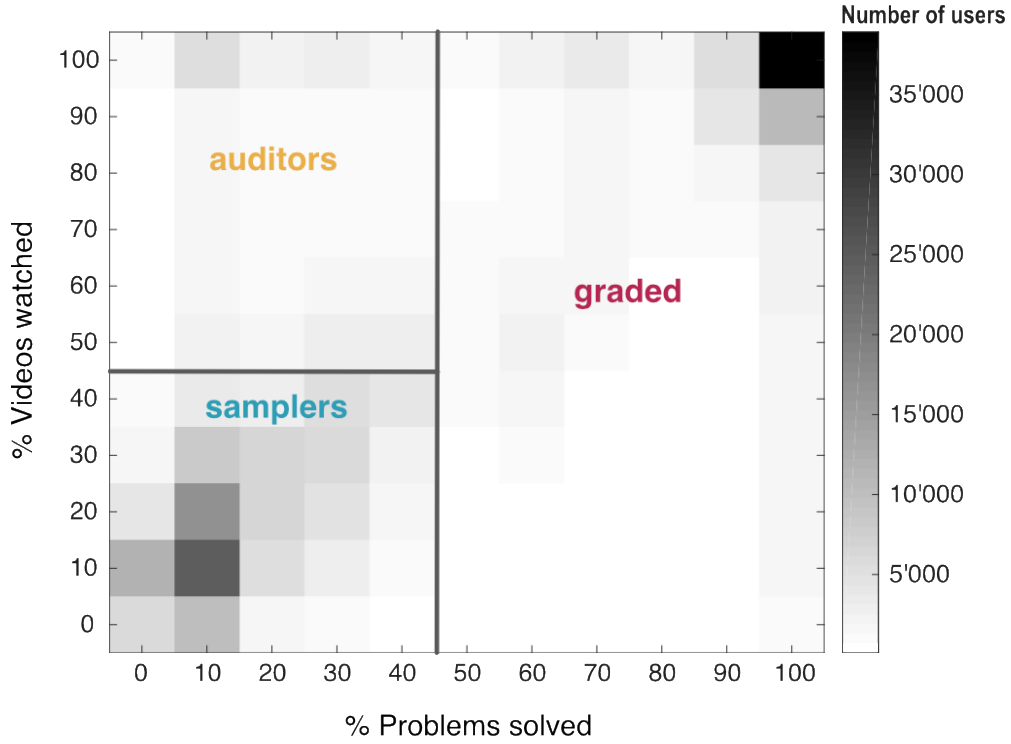
MOOCs : Engagement and Achievement

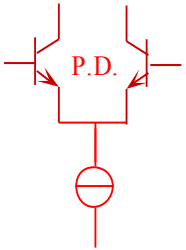
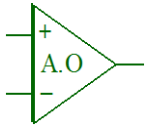
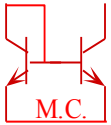
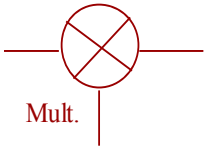
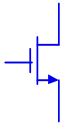
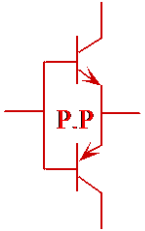
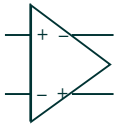


MOOCs : Engagement Levels



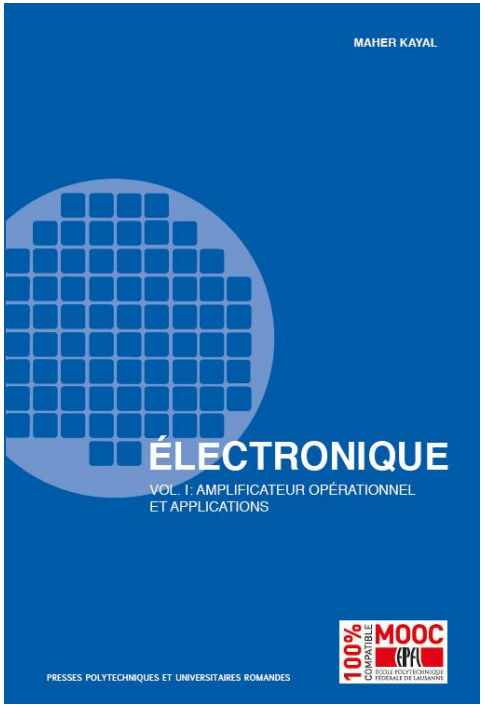


Electronics teaching

Devices	Analog structures	Circuits	Functions	Systems
			Filtering	
			Modulation Demodulation	
			Oscillators	
		Microcontroller		
		.	.	.
		.	.	.
		.	.	.

Course structure for 2nd year of engineering school

- Part one (Electronics I) :
  - Op. Amp applications:
    - Linear functions
    - Non-linear functions
- Part two (Electronics II) :
  - Transistors
  - Analog structures
  - Main analog circuits



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MOOC: Electronics II demonstration

https://courses.edx.org/courses/coursev1:EPFLx+Electroni2X+2017_T1/course/

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Conclusion

- Large audience with MOOCS.
- Possibility of sharing a long teaching experience.
- Web simulator brings a real added value for teaching and can replace “in some condition” the lab experiences.

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