**Workshop DIGILENT**

**Jeudi 10 Mars 2016**

**Teaching Digital Design with Student-Owned**

**FPGALab Platforms**

**Presenter: Prof.dr. Mircea Dabacan**

**Event organizers: CNFM and DigilentInc**

**Objective:** The objective of this workshop is to demonstrate ways in which student-owned lab approach

can be used not only to teach many of the fundamental of digital circuits, but also to challenge, engage,

and excite students with engineering design problems. Students own their personal FPGA lab boards to

solve open ended problems with unlimited access. Through demonstrations performed during the

workshop, participants will leave with instructional materials that will enable them to easily incorporate

these activities into their own courses.

**Description:** FPGA circuits provide a good solution for teaching and understanding digital systems.

Programmability allows for a wide spectrum of applications, from image processing to motion controls

and high speed networking. All levels of proficiency can be covered from entry level hobbyists and

undergraduates to master and doctoral studies and professional research.Digilent FPGA board portfolio

serves the needs for both application and proficiency ranges.

In this workshop we will demonstrate how students can learn about digital circuits through hands-on,

project-based, open-ended exercises. A key component to enhancing the learning experience is the use of

student-owned equipment where the students are freed from the constraints associated with traditional

laboratory environments. We will discuss how low-cost, student-owned hardware along with free

programming software can be used to teach digital design in an attractive yet challenging way,

demonstrating the high abstraction level of theory with spectacular and fun projects.

Basys3 board from Digilent and the free WebPack version of Vivado from Xilinx expose students to the

newest technologies both in HW (the Artix 7 FPGA family from Xilinx) and software. The examples will

use VHDL language and will demonstrate RTL design flow, IP core usage, simulation and HW

debugging. **Attendees also have chance to debug the circuit through Digilent Analog Discovery 2, portable all-in-one instrument.**

Participants need to have basic knowledge about VHDL and digital design. They will leave the workshop

with instructional materials so that participants can easily adopt this innovative technique in their own

courses.

The workshop will be held in English.

**Workshop Presenter:** Dr.MirceaDabacan is Professor at Technical University of Cluj-Napoca, Applied

Electronics Department. Mr. Dabacan works in data acquisition systems, digital design and embedded

systems, and was formerly a visiting professor at Washington State University, Pullman, USA. He also

manages the Romanian branch of DigilentInc USA.

**Workshop DIGILENT**

**Jeudi 10 Mars 2016**

**Formulaire d’inscription**

Ce formulaire d’inscription doit être rempli et renvoyé par courriel ou par fax *(04 67 14 96 85)*

à: **Chantal BLANC (**[**fpga@cnfm.fr**](mailto:fpga@cnfm.fr)**)**

Titre/Nom : …………………………………………… Prénom : ……………….…………

Statut (Enseignant/Chercheur/Doctorant) : ……………………………………………….

Université/Entreprise: ………………………………………………………………………...

Adresse : …….……………………………………………………………………..……………

………………..………………..………………..………………..……………………………....

Ville : ………………………………………….. Code Postal : ……………………………..

Tel : ………………………Fax : ………………………… Email : …………………………..

Signature :