

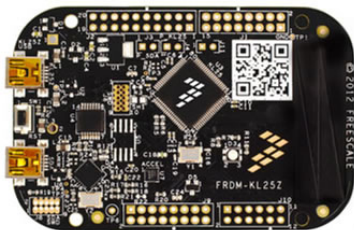


Dear Esteemed Academic Colleague,

At the end of September, the [ARM University Program](#) will run two separate, completely free, **2-hour Hands-On Embedded Tutorials** at Embedded Systems Week (ESWEEK) 2013 at the Montréal Marriott Chateau Champlain Hotel in Montreal, Canada. The objective of these tutorials is simple: “train the trainer”, so you are able to share this knowledge with your students. We have assembled a respected team of academic speakers/trainers to ensure a highly productive hands-on tutorial.

## **Embedded Tutorial #1: Teaching Embedded System Design and Optimization with ARM Cortex-M0+ Microcontrollers**

North



**Speakers:** [Dr. Alexander G. Dean](#), Dept. of ECE, Carolina State University, Raleigh, NC,

[Khaled Benkrid](#), ARM University Program Worldwide Manager, ARM, Inc.

**Summary:** This hands-on tutorial introduces a new set of academic teaching materials and coming textbook for Embedded Systems design courses and labs, with partitions for undergraduate and graduate material. The USD\$13 [Freescale Kinetis Freedom](#) platform is used, based on ARM's smallest, simplest, most power efficient CPU (Cortex-M0+), with freely downloadable ARM/Keil MDK-ARM software tools. The materials focus on programming the microcontroller and peripherals in C, and include advanced topics such as optimizing response time, execution speed, and power efficiency. Participants should come to the session with a laptop downloaded with the free [Keil MDK-ARM evaluation software tools](#) to participate in the hands-on exercises. *All attendees will walk away with their own Freedom board!*

**When:** Monday, September 30<sup>th</sup> from 5:30 to 7:30 PM

**Where:** Montréal Marriott Chateau Champlain Hotel, Montreal, Canada, Room Viger BC



**Equipment Needed:** To participate in the hands-on exercises, attendees will need to bring a Windows laptop with at least 2 hours of battery life with the above-mentioned MDK-ARM software tools evaluation pre-installed.

## **Embedded Tutorial #2: mbed Hands-On**

### **Instructor Workshop**

**Speakers:** [Dr. James Hamblen](#), School of ECE, Georgia Institute of Technology, Atlanta, GA.

[Khaled Benkrid](#), ARM University Program Worldwide Manager, ARM, Inc.

**Summary:** With the falling costs and increasing complexities of processors, microcontrollers are becoming cheaper, more powerful, and more interactive. MCUs are now truly solutions looking for problems, where anyone could conceive a microcontroller application. The problem until now has been turning the idea into a prototype quickly and experimenting with the technology. ARM has changed this with [mbed](#), a rapid prototyping platform designed to simplify getting started with microcontrollers using a web based compiler, optional abstracted libraries for easy peripheral programming, and a very simple drag-and-drop interface. This tutorial includes hands-on exercises using the ARM Cortex-M3-based [NXP LPC1768 mbed module](#), online compiler, and [mbed application board](#), as well as an introduction to the ARM University Program, mbed's relevance to Embedded Systems education, and how to fit this activity into your classes and labs. *All attendees will walk away with their own NXP LPC1768 mbed board!*

**When:** Wednesday, October 2nd from 5:30 to 7:30 PM

**Where:** Montréal Marriott Chateau Champlain Hotel, Montreal, Canada, Room Viger BC

**Equipment Needed:** To participate in the hands-on exercises, attendees will need to bring a laptop with at least 2 hours of battery life pre-installed with a terminal program such as Windows Hyperterminal, [Tera Term](#), or [PuTTY](#).

**\*\*THESE WORKSHOPS ARE FREE OF CHARGE FOR QUALIFIED ACADEMICS\*\***

## **REGISTRATION**

To add these events to your existing ESWeek registration, [CLICK HERE!](#)

If you have not previously completed an ESWeek / ARM University Program Embedded Tutorial registration, [CLICK HERE!](#)

Please contact [Jackie@mpassociates.com](mailto:Jackie@mpassociates.com) with any questions on registration.

## **ELIGIBILITY**

- These workshops are only open to academic faculty members.
- We reserve the right to accept or refuse registrations based on our wish to enable the broadest spectrum of universities to participate.

Thank you for your interest - we look forward to seeing you in Montreal!

Kind Regards,

The ARM University Program Team

**ARM<sup>®</sup>University**  
Worldwide Education Program