Frequently Asked Questions

This is a list of the common questions we have been asked.

Is this class related to a campus course of The University of Texas at Austin?

Yes, this course corresponds to the Electrical and Computer Engineering course EE319K Introduction to Embedded Systems, which is a required course offered in the freshman year to all ECE students and some BME students.

What does it mean for the display to be optional?

The final project will be a arcade-style game. We expect most students to not buy the optional display, but rather they will connect the microcontroller board to the PC. In this manner, the output of the handheld game will be displayed on a window of the PC. However, for about $10 plus shipping, you can order a small Nokia 5110 LCD display so your handheld game can be operated in a stand-alone fashion.

Is there a textbook associated with this class?

The class is based on the textbook Embedded Systems: Introduction to ARM Cortex-M Microcontrollers ISBN: 978-1477508992 and is available on Amazon. However the purchase of the textbook is not required. The book would be useful as a reference or for further study.

Will this course really take 10 hours per week?

The first option of just listening, reading and playing with interactive animations will take 2 or 3 hours per week. The second option of performing the labs in simulation will take 5 or 6 hours. The third option of building and testing systems on the real microcontroller will require 10 hours per week. Two important factors that will affect your hours per week are your software debugging skills and your ability to get help from others taking the class.

Do I need a Windows PC?

Yes, any system running Windows XP, Vista, Windows 7 or Windows 8 will be ok. Furthermore, with a third party virtualization software like Parallels or VMware Fusion, one can install the Windows operating system on a Mac. You will not be able run the lab software on Linux. You will need to be able to install the Keil uVision integrated development environment, which will require administrative privileges to the PC.

How much does it cost to take this class?

It does not cost anything to take the class. There is an option for a ID-verified certification for $50. However, since this a lab-based class, there is a lab kit you will purchase.

How much does the kit cost?

In the US one can purchase the microcontroller board and parts for about $40 plus shipping. There is also an optional graphics display for an additional $10 plus shipping. The optional graphics display will make the last lab a lot more fun.

Can I take this course without buying the kit?

Yes, there are three approaches to taking this class. You could just listen to the videos, read the assignments, and play with the interactive learning tools. The second option involves installing the Keil uVision integrated development environment on a Windows PC, and performing the lab assignments in simulation mode. the third option, which fully captures the essence of embedded systems, can be done by performing the lab assignments on a real system that you will purchase.

I have never programmed before, can I take this course?

Anyone is allowed register, but we believe to get the maximum benefit you should have prior programming experience at an introductory level. However, this could be your second class involving programming.

Can I contact the Instructors or Teaching Assistants?

Yes, but not directly. The discussion forms are the appropriate venue for questions about the course. Instructors will monitor these forums and try to respond to the most important questions; in many cases responses from other students will be adequate and faster.

I really want to take this course, what is next?

You should purchase the microcontroller and extra electronics before the start of class. We will provide instructions at Worldwide

Can I use another microcontroller, such as Arduino or PIC, to do this course?

If your plan is to watch the videos and not attempt certification, then yes you may do the labs with whatever microcontroller you want. From an educational perspective most microcontrollers are equivalent. On the other hand, if you wish to interact in the lab discussion groups or wish to obtain the certificate, then you must use either the EK-LM4F120XL or the EK-TM4C123GXL board from Texas Instruments. This is because we have developed grading software that will test the function of your labs

running on either the EK-LM4F120XL or the EK-TM4C123GXL board.

I noticed there is a new edition of the book. I have an older edition, should I get the newer version?

First of all, the book is not required. There is very little difference between the May 2013 version of the book and the current version (basically I changed Stellaris to Tiva). It turns out all the code in this class will run on either TM4C123 (Tiva) or LM4F120 (Stellaris). Older versions of the book focus on the LM3S microcontrollers. The LM3S1968 and TM4C123/LM4F120 are fundamentally similar but not identical. The online course will provide up to date reading, the software installation will have up to date example code. Therefore I think the old books will be fine as a reference of interface circuits and fundamental concepts. Therefore I do not recommend buying the newer version if you have an older version.

Which LaunchPad should I buy?

You will need to purchase either the EK-LM4F120XL or the EK-TM4C123GXL board from Texas Instruments and a set of electronic components. The TM4C123 is the newer board, but the LM4F120 is sufficient for all labs in this class. The TM4C123 adds hardware PWM and USB host. Otherwise both boards are the same: 256k ROM, 32k RAM, I/O ports A B C D E F, timers, floating point, 12-bit ADC, serial ports, CAN, and USB device. I suggest you get whichever board is less expensive or easier to buy.