

EECE 494 Sp. Tp. COMPUTER BUS AND SoC INTERFACING – SPRING 2013
ELECTRICAL AND COMPUTER ENGINEERING, HOWARD UNIVERSITY
MONDAYS 2:10 – 5:00PM

- Catalog Data: EECE494 Special Topic: Computer Buses and SoC Interfacing. This Lab-based 3-credit hour course is intended to students with fundamental understanding of computer buses and sensor ports available in SoC or Intel's Atom embedded systems (DE2i-150 kit) and thus with reasonable level of practice and confidence in interfacing the Kit with external devices. Optionally, an Intel microcontroller, Arduino-compatible Galileo would be additionally introduced.
- Instructor: Dr. Charles Kim, LKD #3014 202-806-4821 CKIM@HOWARD.EDU
- Course Technical Assistant: Mr. Tolulope Kupoluyi Tolulopekupoluyi@gmail.com
- References: (1) "Computer Buses" (ISBN-10 0849308259) by Buchanan. CRC Press (2000) --- This book covers the fundamentals of the computer buses; (2) Introduction to PCI Express- Hardware and Software Developer's Guide (ISBN-10: 0970284691) by Wilen et al. Intel Press (2003) --- This book will cover PCI and PCI Express in depth; (3) "Break Away with Intel Atom Processors: A Guide to Architecture Migration" + "Workbook" by Lori Matassa and Max Momeika. Intel Press (2011) --- This will become a main source for covering Intel Atom embedded systems and SoC, DE2i-150 kit.
- Pre-Requisite: EECE416 – Microcomputer or Instructor's approval
- Course Schedule
 - Jan-Feb: DE2i-150 Kit Set-Up + Progress Reports/Presentation
 - Mar: Initial Project of Interfacing with DE2i-150 + Assignments
 - Apr: Final Project
 - May: Final Project Presentation + Report
- First 4-Week Schedule
 - WK1 M Jan 13 : (1) Form a 2-person team and (2) pick up a DE2i-150 Kit from Mr. Kupoluyi
 - WK2 M Jan 20 (- F 1/24): (1) Read manuals on the Kit and explore it, (2) how to connect the Kit to a laptop/PC, and (3) Investigate what to install to the Kit
 - WK3 M Jan 27: (1) Completion of the initial set-up of the Kit so that coding can start.
 - WK4 M Feb 3: (1) First Demonstration of the Kit with LED blinking
- Grading Policy
 - Progress Reports 20%
 - Progress Presentations 20%
 - Assignments 20%
 - Final Project 30%
 - Attendance 10%
- **IMPORTANT NOTE:** Those who registered this course without the pre-requisite must see the instructor to determine if the pre-requisite may be exempt.