

**New Course for Spring 2010**

**CPE 790: ST: Hardware Accelerated SoPC and GPU Computing**

3 hours credit

The focus of this course is to introduce and research emerging techniques and programming paradigms that can be used to accelerate the processing speed of scientific and other high performance applications using System on a Programmable Chip, SoPC, and Graphics Processing Units, GPUs, platforms. SoPC's are hardware elements that contain a combination of instruction set processors and reconfigurable hardware elements such as FPGAs. GPUs represent low-cost highly parallel video processing hardware that can be programmed using the CUDA software architecture. The course will survey the current state of research and industrial activity within these two main areas and will give student's hands-on experience implementing design applications on the SoPC/GPU facilities at UAH and/or the Alabama Supercomputer Authority.

**Prerequisites:** A first course in Parallel Programming such as CPE 412/512, and a second course in digital logic such as CPE 422/522 Advanced Logic Design or permission from instructor.

**Instructor:** B. Earl Wells, Professor, Electrical and Computer Engineering

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