

COE838 – Systems on Chip Design

- **Course Outline**

<http://www.ee.ryerson.ca/undergraduate/dcd/coe838.html>

<http://www.ee.ryerson.ca/~courses/coe838/>

- **Key Knowledge to Be Acquired**

System on Chip (SoC) architectures and SoC IP cores (ARM Cortex, Nios-II and other cores), SoC Modeling and HW/SW Co-specification, Hardware Software Co-synthesis and Architectural Exploration of SoC, Network-on-Chip and on-chip interconnection structures such as AMBA, Avalon, SoC prototyping using Systems on Programmable Chips, multi-core architectures and embedded systems on a chip, case-studies of real-life SoCs and their applications.

- **Key Skills to be Mastered**

SystemC based systems on chip simulation and HW/SW co-specification, CAD tools for system-on-chip prototyping, Quartus-II and SOPC (System on Programmable Chips) builder tools are employed in both laboratories and course projects.

- **Potential Careers**

ASIC designers, embedded system design engineers, computer system engineers, system integration engineers, SoC design engineers, embedded system test engineers, ...

- **Potential Employers**

Advanced Micro Devices, DALSA, Atomic Energy of Canada (AECL), PMC-Sierra, Research-in-Motion, ST Microelectronics, IBM Canada, ...

- **Graduate Studies**

Ryerson, Toronto, Waterloo, UBC, McGill, Calgary, Alberta, etc., have strong graduate programs in SoC design, embedded systems, micro-systems and advance computer architecture.