University of Victoria Engineering

Faculty of Engineering

COURSE OUTLINE

ELEC569A – Reconfigurable Computing

Term – Fall 2016 (201609)

Instructor

Dr. Mihai Sima
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Office Hours

Days: Tuesday
Time: 12:30pm – 3:20pm
Location: EOW-313

Course Objectives

- Expose students to state-of-the-art FPGA architectures
- Make students understand what the FPGA design challenge is
- Show students where to look for information and how to read it
- Present a literature digest for the FPGA domain

Learning Outcomes

- Ability to write efficient VHDL code for FPGAs
- Ability to choose the appropriate FPGA architecture given a specific application
- Ability to use FPGA design tools

Syllabus

- Field-Programmable Gate Arrays (FPGA) and Reconfigurable Computing paradigm
- FPGA: major architectural classes
- FPGA as a performance accelerator
- Optimizing circuits for a specific FPGA architecture
- Programmable interconnection networks
- Low-energy FPGA's
- CAD tools for mapping onto FPGA's

A-Section(s): A01 / CRN 11296 and A02 / 14072
Days: Tuesdays
Time: 3:30pm – 6:20pm
Location: ELL-061

Required Text

Title: Course notes available online
Author: Mihai Sima
Publisher:
Year: 2016

Optional Text

Title:
Author:
Publisher:
Year:

References:

Title: Architecture and CAD for deep-submicron FPGA's
Author: V. Betz, J. Rose, A. Marquardt
Publisher: Springer
Year: 1999

Title: Design of Interconnection Networks for Programmable Logic
Author: G. Lemieux, D. Lewis
Publisher: Springer
Year: 2003

Title: Low-energy FPGA's: architecture and design
Author: V. George, J. Rabaey
Publisher: Springer
Year: 2001

Title: Research Papers on IEEE Digital Library

Assessment:

Mid-term report	10%	Due date: Nov. 1, 2016
Project report	30%	
Presentation and powerpoint slides	30%	
Final Exam (questions and answers)	30%	

Note: Failure to pass the final exam will result in a failing grade for the course.

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Graduate Calendar.

http://web.uvic.ca/calendar2016-09/grad/academic-regulations/grading.html

Note to Students:

Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair's Secretary to set up an appointment.

Accommodation of Religious Observance
http://web.uvic.ca/calendar2016-09/general/policies.html

Policy on Inclusivity and Diversity
http://web.uvic.ca/calendar2016-09/general/policies.html

Standards of Professional Behaviour

You are advised to read the Faculty of Engineering document Standards for Professional Behaviour, which contains important information regarding conduct in courses, labs, and in the general use of facilities.

http://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Graduate Calendar for the UVic policy on academic integrity.

http://web.uvic.ca/calendar2016-09/undergrad/info/regulations/academic-integrity.html

Course Lecture Notes

Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.