University of Victoria
Engineering

ELEC 569A – Reconfigurable Computing

Term – Fall 2017 (201709)

Instructor		**Office Hours**	
Dr.	Mihai SIMA	Days:	Tuesday
Phone:	(250) 386-8289	Time:	1:30pm – 3:30pm
E-mail:	msima@ece.uvic.ca	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 for 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
- Computer-Aided Design tools for mapping onto FPGA's

A-Section(s): A01 / CRN 11298 and A02 / CRN 11299
Days: Tuesday
Time: 3:30pm – 6:20pm
Location: CLE-A308

Required Text		**Optional Text**	
Title:	Course notes available online	Title:	
Author:	Mihai SIMA	Author:	
Publisher:	-	Publisher:	
Year:	2017	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%	Date: Oct. 31, 2017
Project report	30%	
Presentation and powerpoint/pdf slides	30%	
Final (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/calendar2017-09/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/calendar2017-09/grad/registration/Registration.1.16.html

Policy on Inclusivity and Diversity: http://web.uvic.ca/calendar2017-09/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/calendar2017-09/grad/academic-regulations/academic-integrity.html#

Updated July 6, 2017

Equality: This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation. Alternatively, you may want to contact the Resource Centre for Students with a Disability located in the Campus Services Building.

The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members.

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.