

# ENG3050 Reconfigurable Computing Systems

School of Engineering , University of Guelph  
Winter 2013

- *Handout (PDF).*
- *1st Meeting (PPT).*
- *1st Meeting (PDF).*

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## Instructor:

Prof. Shawki Areibi

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## Class times:

Mondays 1:30 - 2:30 (ROZH 107)

Wednesdays 1:30 - 2:30 (ROZH 107)

Fridays 1:30 - 2:30 (ROZH 107)

## ● Course Description:

The course explores the design aspects involved in the realization of digital systems on programmable logic devices. The course will introduce students to Hardware Descriptive Languages, Field Programmable Gate Arrays, Reconfigurable Co-Processors and state-of-the-art CAD tools to design digital systems

## ● Course Objective:

1. Understand the basic concept of Reconfigurable Computing both from a hardware and software perspective.
2. Teach students about digital hardware, its specification, design and implementation.
3. Familiarize the students with both low level hardware descriptive languages (HDL) and high level languages such as System-C and Handel-C
4. To familiarize the students with state of the art tools for designing circuits such as Synopsys, Xilinx, Mentor Graphics, e.t.c

## ● Reference:

1. "Introduction to Reconfigurable Computing: Architectures and Applications", by C. Bobda, Springer, 2008.
2. "Reconfigurable Computing: Accelerating Computations with FPGAs", by M. Gokhale, Springer, 2006.
3. "FPGA-Based System Design", by Wayne Wolf, Prentice Hall, 2004.
4. "The Design Warrior's Guide to FPGAs, Devices, Tools and Flows", by Clive Maxfield, Elsevier, 2004, ISBN 0-7506-7604-3.
5. "Computer Organization and Design", by D. Patterson and J. Hennessy, Morgan Kaufmann, 2005, ISBN 1-55860-604-1
6. "VHDL" 3rd Edition, by Douglas Perry, McGraw Hill, 1998.
7. "The Designer's Guide to VHDL", by Peter Ashenden, Morgan Kaufmann, 2002, ISBN 1-55860-674-2.

## ● Evaluation:

Labs:	5 Labs	25%
Assignments:	Two to Three Assignments	25%
Paper Review:	General Topic	10%
Final Exam:	Closed Book	40%

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