University of Victoria Engineering

Faculty of Engineering

COURSE OUTLINE

SENG 440 – Embedded Systems

SUMMER 2015 (201505)

Instructor

Dr. Mihai SIMA
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Office Hours

Days: Monday
Time: 13:00 – 15:00
Location: EOW-313

Teaching Assistant

Cheng LEI
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Course Objectives

- Expose the students to the embedded systems domain
- Introduce design metrics for embedded systems
- Make the students understand how to approach the design of embedded systems
- Show the students where to look for information and how to interpret it

Learning Outcomes

- Ability to choose an appropriate embedded processor for a specific application
- Ability to write optimized embedded software
- Ability to implement embedded applications in fixed-point arithmetic
- Ability to perform hardware-software co-design

Syllabus

Characteristics and design of embedded systems. Quality and performance metrics. Hardware, software, firmware. Processors for embedded systems. Software optimization techniques for embedded processors. Fixed-point arithmetic. Hardware optimization techniques. Standard peripherals for embedded systems. Memory. Interfacing. Formal models and specification languages for capturing system behavior. System partitioning and hardware/software co-design. Techniques for specification, exploration, and refinement.

A-Section(s): A01 / CRN 30734
A02 / CRN 30735
Days: Monday, Thursday
Time: 8:30 – 10:00
Location: ECS-104

Required Text		**Optional Text**	
Title:	Course Notes (available online)	Title:	-
Author:	Mihai SIMA	Author:	-
Publisher:	UVic	Publisher:	-
Year:	2015	Year:	-

Assessment:

Project:	50%	Due Dates: Thursday, July 30, 2015
Mid-term	20%	Date: Monday, June 15, 2015 or Thursday, June 18th, 2015 (TBD)
Final Exam	30%	

Notes:

Failure to complete all project requirements will result in a grade of N being awarded for the course.
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 Undergraduate Calendar.

Assignment of E grade and supplemental examination for this course will be at the discretion of the Course Instructor. The rules for supplemental examinations can be found in the current Undergraduate Calendar.

http://web.uvic.ca/calendar/FACS/UnIn/UARe/Grad.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/calendar/GI/GUPo.html

Policy on Inclusivity and Diversity
http://web.uvic.ca/calendar/GI/GUPo.html

Standards of Professional Behaviour

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

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

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

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.