
SENG 440 – Embedded Systems

Term – Summer 2019 (201905)

Instructor

Dr. Mihai SIMA
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Office Hours

Days: Monday
Time: 12:00pm – 3:00pm
Location: EOW-313

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 30759 and A02 / CRN 30760

Days: Monday, Thursday
Time: 8:30 – 9:50
Location: ELL 168

Required Text

Title: Course Notes (available online)
Author: Mihai SIMA
Year: 2019

Assessment:

Project:	45 %	Due Date: Friday, August 2, 2019
Mid-term	20 %	Date: Monday, June 17, 2019
Final Exam	35 %	

Note: Failure to submit the project will result in a grade of N being awarded 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.

<https://web.uvic.ca/calendar2019-05/undergrad/info/regulations/grading.html>

There will be no supplemental examination for this course.

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 Assistant to set up an appointment.

Accommodation of Religious Observance:

<https://web.uvic.ca/calendar2019-05/undergrad/info/regulations/religious-observanc.html>

Policy on Inclusivity and Diversity:

<https://web.uvic.ca/calendar2019-05/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.

<https://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 Undergraduate Calendar for the UVic policy on academic integrity.

<https://web.uvic.ca/calendar2019-05/undergrad/info/regulations/academic-integrity.html>

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 Centre for Accessible Learning 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.

Sexualized Violence Prevention and Response at UVic

UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting www.uvic.ca/svp. If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out:

Where: Sexualized violence resource office in EQHR; Sedgewick C119

Phone: 250.721.8021

Email: svpcoordinator@uvic.ca

Web: www.uvic.ca/svp