CENG 355 – Microprocessor-Based Systems

Term – Fall 2016 (201609)

Instructor
Dr. Daler Rakhmatov
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E-mail: daler@ece.uvic.ca

Office Hours
Days: W
Time: 11:30 – 13:00
Location: EOW 327

Course Objectives
- Students will learn about hardware-software interplay and tradeoffs arising in modern embedded systems and associated system integration and interfacing issues.

Learning Outcomes
- Students will develop a general understanding of the operation, design, application, and programming of 32-bit microprocessor-based systems, and will be able to apply studied concepts to any advanced embedded system.

Syllabus (tentative hours)
- Embedded systems (1) – Applications, technologies, trends.
- Embedded software (4) – C programming, operating system concepts.
- Microprocessors (5) – Digital arithmetic, pipelining, multithreading.
- Memory hierarchy (8) – Locality, caching, virtual memory.
- I/O interfacing (10) – Handshaking, interface circuits, interrupts, DMA.
- Internal and external communication (8) – Signaling, protocols, buses.

A-Section(s): A01-02 / CRN 10444-10445
Days: MTh
Time: 10:00 – 11:20
Location: HSD A240

B01/02
M
15:30 – 18:20
TA (TBA)

B03/04
W
13:30 – 16:20
TA (TBA)

B05/06
W
17:00 – 19:50
TA (TBA)

B07
M
18:30 – 21:20
TA (TBA)

Required Text
Title: Computer Organization and Embedded Systems
Author: Hamacher/Vranesic/Zaky/Manjikian
Publisher: McGraw-Hill
Year: 2011 (6th edition)

Optional Text
Title: N/A
Author: 
Publisher: 
Year: 

Assessment:

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Weight</th>
<th>Due Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>5%</td>
<td>TBA</td>
</tr>
<tr>
<td>Labs</td>
<td>30%</td>
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</tr>
<tr>
<td>Mid-term</td>
<td>20%</td>
<td>Date: October 27</td>
</tr>
<tr>
<td>Final</td>
<td>45%</td>
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**Note:** Failure to complete all laboratory requirements 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.

**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/calendar2016-09/undergrad/info/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.

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.

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.