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## **ECE 548 – Cyber-System Security**

Summer 2020 (202005)

### **Instructor**

F. Gebali  
Phone: 250-721-6509

### **Office Hours**

Days: Thursday 2:00-3:00 under Collaborate Session  
E-mail: fayez@uvic.ca

### **Course Lectures**

1. Chats on Thursdays 1:00 pm-1:50 pm on Blackboard Collaborate:  
<https://ca.bbcollab.com/guest/6f5d44b92ddc416899594e72edfc3d02>
2. Lecture slides and voice recordings are available on CourseSpaces

### **Course Objectives**

1. Review hardware security supply chain
2. Analyze hardware trojans
3. Design hardware trojan countermeasures
4. Analyze side-channel attacks
5. Design side-channel attack countermeasures
6. Analyze hardware piracy

### **Learning Outcomes**

Upon completion of this course you will acquire the following skills:

1. Describe and analyze hardware design and fabrication and their interrelations.
2. Develop solutions for hardware security problems.
3. Characterize and assess hardware attacks and hardware trojans.
4. Use appropriate resources to stay abreast of new hardware attacks and tools and techniques.

## Syllabus

Introduction to hardware security

Basics of VLSI design and test

Hardware trojans

Side-channel attacks

Memory security

RFID security

### Optional Text

Title: Hardware Security

Author: S. Bhunia & M. Tehranipoor

Publisher: Morgan Kaufmann

Year: 2019

### Required Text

Title Lecture notes

Author: F. Gebali

N/A

Year: 2020

## Online Course Delivery

As this course will be conducted online during this term, students will need to complete assignments online.

## Assessment

Activity	Grade
Assignments	75%
Project Report	25%
Total	100%

### **Important: All deadlines and schedules for this course will reference Pacific Daylight Time.**

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 & Grad Calendars:

<https://www.uvic.ca/calendar2020-05/grad/index.php#/policy/B13jeiMdE?bc=true&bcCurrent=07%20-%20Grading&bcItemType=policies>

**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.

### Course Withdrawal Deadlines:

- May 16, 2020: Withdrawal with 100% reduction of tuition fees
- June 6, 2020: Withdrawal with 50% reduction of tuition fees

- July 1, 2020: Last day for withdrawal (no fees returned)

**Accommodation of Religious Observance:** <https://www.uvic.ca/calendar2020-05/grad/index.php#/policy/SkmigiMOV?bc=true&bcCurrent=17%20-%20Accommodation%20of%20Religious%20Observance&bcItemType=policies>

**Policy on Inclusivity and Diversity: Engineering:** <https://www.uvic.ca/engineering/about/equity/index.php>

**Academic Calendar:** <https://www.uvic.ca/calendar2020-05/grad/index.php#/policy/HkQ0pzdAN>

**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>

**Academic Integrity** 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://www.uvic.ca/calendar2020-05/grad/index.php#/policy/BJujesM\\_E?bc=true&bcCurrent=02%20-%20Policy%20on%20Academic%20Integrity&bcItemType=policies](https://www.uvic.ca/calendar2020-05/grad/index.php#/policy/BJujesM_E?bc=true&bcCurrent=02%20-%20Policy%20on%20Academic%20Integrity&bcItemType=policies)

**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 an appropriate accommodation. Alternatively, you may want to contact the Centre for Accessible Learning located in the Campus Services Building. <https://www.uvic.ca/services/cal/>. The University of Victoria is committed to promoting, providing, and protecting a positive, 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](http://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](mailto:svpcoordinator@uvic.ca)

Web: [www.uvic.ca/svp](http://www.uvic.ca/svp)

**Office of the Ombudsperson:** The Office of the Ombudsperson is an independent and impartial resource to assist with the fair resolution of student issues. A confidential consultation can help you understand your rights and responsibilities. The Ombudsperson can also clarify information, help navigate procedures, assist with problem-solving, facilitate communication, provide feedback on an appeal, investigate and make recommendations. Phone: 250-721-8357; Email: [ombuddy@uvic.ca](mailto:ombuddy@uvic.ca); Web: <https://uvicombudsperson.ca/>