

COURSE OUTLINE

ECE 241 – Digital Design

Term – FALL 2020 (202009)

Instructor

Dr. Amirali Baniyadi
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Office Hours

Days: Only by appointment on Zoom

Link: <https://uvic.zoom.us/j/91068739677?pwd=V3RQT2pWTERLNUIRVXQ5b2ZkcHdudz09>

Course Objectives

To understand fundamental concepts in analyzing and designing combinational and sequential logic circuits. To gain experience with implementation and testing of digital systems.

Learning Outcomes

Understanding Boolean algebra and its applications. Understanding binary and hexadecimal number systems. Understanding the characteristics and behavior of logic gates. Acquiring the capability to analyze and design combinational and sequential logic circuits. Gaining an introductory experience with implementation and testing of digital logic systems with an emphasis on synthesis and analysis of HDL designs using modern EDA tools.

Syllabus

Binary numbers. Boolean algebra and logic gates. Combinational circuits and gate-level minimization. Synchronous sequential logic circuits. Finite state machines. Registers and counters. Implementation technologies.

Lecture

A-Section(s): A01 / CRN 10923

<https://bright.uvic.ca/d2l/home/52785>

Lab

B01	Mon	13:30-16:20	Sina Ghaffari (sinagh92@gmail.com)
B02	Tue	12:30-15:20	Jude Onyia (judeonyia10@gmail.com)
B03	Wed	12:30:15:20	Khaled Helal (khaled.a.helal@ieee.org)
B04	Thu	13:30-16:20	Ramin Sharifi (raminsharifi@uvic.ca)
B05	Thu	16:30-19:20	Pouya Shiri (pouyashiri@gmail.com)

Required Textbook

Title: **Digital Design
With An Introduction to the Verilog HDL,
VHDL and SystemVerilog (6th Edition)**

Author: Mano and Ciletti

Publisher: Pearson

Year: 2018

Online Course Delivery:

As this course will be conducted online during this term, students will need to complete assignments/labs online. The students will require a computer with access to a graphical web browser (such as Chrome, Firefox or Safari ...).

Assessment:

Assignments:	10%	Due Dates:
Labs	30%	
Mid-terms	60%	Date: Midterm 1 (Thursday Oct. 15, 2020 @10:00 am-25%), Midterm 2 (Monday Nov. 16, 2020 @10:00 am-25%) Midterm 3 (Monday Nov. 30, 2020 @10:00 am-10%)

Important: All deadlines and schedules for this course will reference Pacific Daylight Time until November 1, 2020, and then Pacific Standard Time.

Note: Failure to complete all laboratory 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.

<https://www.uvic.ca/calendar/archives/202009/undergrad/index.php#/policy/S1AAgoGuV?bc=true&bcCurrent=14%20-%20Grading&bcGroup=Undergraduate%20Academic%20Regulations&bcItemtype=policies>

There will be no supplemental examination for this course.

https://www.uvic.ca/calendar/archives/202009/undergrad/index.php#/policy/SJ2RxoZ_N?bc=true&bcCurrent=13%20-%20Examinations&bcGroup=Undergraduate%20Academic%20Regulations&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:

- September 22, 2020: Withdrawal with 100% reduction of tuition fees
- October 13, 2020: Withdrawal with 50% reduction of tuition fees
- October 31, 2020: Last day for withdrawal (no fees returned)

Accommodation of Religious Observance:

<https://www.uvic.ca/calendar/archives/202009/undergrad/index.php#/policy/r1q0gofdN?bc=true&bcCurrent=10%20-%20Accommodation%20of%20Religious%20Observance&bcGroup=Undergraduate%20Academic%20Regulations&bcItemtype=policies>

Policy on Inclusivity and Diversity:

Engineering: <https://www.uvic.ca/engineering/about/equity/index.php>

Academic Calendar:

<https://www.uvic.ca/calendar/archives/202009/undergrad/index.php#/policy/HkQ0pzdAN?bc=true&bcCurrent=%20General%20University%20Policies&bcGroup=General%20University%20Policies&bcItemtype=policies>

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/calendar/archives/202009/undergrad/index.php#/policy/Sk_0xsM_V?bc=true&bcCurrent=08%20-%20Policy%20on%20Academic%20Integrity&bcGroup=Undergraduate%20Academic%20Regulations&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. 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

Office of the Ombudsperson:

The [Office of the Ombudsperson](http://www.uvic.ca/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, Website: <https://uvicombudsperson.ca/>