UVic Department of Electrical and Computer Engineering

COURSE OUTLINE
ELEC 330 – Electronic Devices: I
Spring 2015

Instructor:

Dr. H.L. Kwok
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Office Hours:

Days: T and F
Time: 14:30-15:00
Location: EOW425

Lectures:

A-Section(s): A01/A02 CRN 21065/6
Days: TWF
Time: 1130-1220
Location: ELL167
Reading Break: Feb.9-13
Last day of class: April 2

Labs: **Location: ELW**

B-Section(s) Days Time

Details available in webpage

Required Text:

Title: Electronic Devices conventional current version, 9th Ed.
Author: T.L. Floyd
Publisher: Prentice Hall 2012
Year: 2012

Optional Text:

Course Pack for ELEC330
Author: Adam Zielinski
Available at University Bookstore

Lab Manual: Available in the course website

Assessment:

Assignments:	10%	
Labs	15%	
Mid-term	30%	Date: Feb.25 (Wed)
Final	45%	

Note: Failure to complete all laboratory requirements will result in a grade of N being awarded for the course.

Due dates for assignments:

To be decided (normally 1 week after the assignments are given)

The final grade obtained from the above marking scheme will be based on the following percentage-to-grade point conversion:

Passing Grades	Grade Point Value	Percentage for Instructor Use Only	
A+ A A-	9 8 7	90 – 100 85 – 89 80 – 84	
B+ B B-	6 5 4	77 – 79 73 – 76 70 – 72	
C+ C	3 2	65 – 69 60 – 64	
D	1	50 – 59	
Failing Grades	**Grade Point Value**	**Percentage for Instructor Use Only**	**Description**
E	0	35 - 49	Fail, conditional supplemental exam. (For undergraduate courses only)
F	0	0 – 49	Fail, no supplemental.
N	0	0 – 49	Did not write examination, Lab or otherwise complete course requirements by the end of term or session; no supplemental exam.

The rules for supplemental examinations are found on page 80 of the current 2013/14 Undergraduate Calendar.

Term in which E Grade Was Obtained	Application Deadline for Supplemental Exam	Supplemental Exam Date
First term of Winter Session (Sept – Dec)	February 28 in the following term	First week of following May
Second term of Winter Session (Jan – Apr)	June 30 in the following term	First week of following September
Summer Session (May – Aug)	October 31 in the following term	First week of following January

Deferred exams will normally be written at the start of the student's next academic term; i.e., approximately 4 months following the deferral of the exam.

Course Description

1. Course Objectives

This course deals with the principle of operation and design issues related to modern electronic circuits. The advancement of electronic circuits has been primarily due to the invention of new devices and techniques and it is desirable for practicing engineers to have an updated perspective and understanding on state-of-the-art electronic circuits and future trends.

2. Learning Outcomes

LO-1: Study the properties and operation of active devices

SLO-1.1: Students learn of the properties of nonlinear junction devices such as the junction diodes and the transistors

LO-2: Study the generation of simple waveforms

SLO-2.1: Students learn how nonlinear device properties are utilized and exploited in circuit design especially for integrated circuits

SLO-2.2: Student learn how meaningful waveforms can be generated in circuits and their functionalities in the context of circuit design

LO-3: Study signal amplification and transistor circuits

SLO-3.1: Students learn how signal amplification can be facilitated including performance optimization with respect to gain, input and output impedance matching and bandwidth issues

SLO-3.2: Students learn various forms of biasing in amplifier circuits

LO-4: Study the multi-stage circuits and their design

SLO-4.1: Students learn how multi-stage circuits are coupled and related interface design compromises

LO-4: Study device models and simulations

SLO-4.1: Students learn device modeling and circuit simulations

LO-5: Study logic gates and simple sequential circuits

SLO-5.1: Students learn logic gates, switching and sequential circuits and their functionality

3. Syllabus

Topics:

Nonlinear devices; modeling and application of diodes; rectifiers, voltage regulators; waveform shaping circuits (chapter 2)

Biasing of bipolar and field-effect transistors (Chapters 5 and 8)

Small-signal amplifiers and multistage amplifiers (Chapters 6 and 9)

Nonlinear applications of transistors including: digital circuits such as inverters, (logic) gates and flip-flops (Chapters 4 and 9)

Circuit design; simulations; implementation; and testing (Lab manual)

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 ECE Chair by email or the ECE Chair's secretary to set up an appointment.

Accommodation of Religious Observance
See http://web.uvic.ca/calendar2013/GI/GUPo.html

Policy on Inclusivity and Diversity
See http://web.uvic.ca/calendar2013/GI/GUPo.html

Standards of Professional Behaviour

You are advised to read the Faculty of Engineering document Standards for Professional Behaviour at http://www.uvic.ca/engineering/current/faculty/index.php#section0-13 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

http://web.uvic.ca/calendar2013/FACS/UnIn/UARe/PoAcI.html for the UVic policy on academic integrity.

Plagiarism detection software may be used to aid the instructor and/or TA's in the review and grading of some or all of the work you submit.