UVic Department of Electrical and Computer Engineering

COURSE OUTLINE

Course No. – Course Title

Summer 2014

Instructor:

Dr. Reuven Gordon
Phone: 250-472-5179
E-mail: rgordon@uvic.ca

Office Hours: by appointment

Days: M-F
Time: 9-5
Location: EOW433 by appointment

Lectures:

A-Section(s): A01 / CRN 30249
Days: MR
Time: 11:30-12:50
Location: COR B108

Tutorial:

Days: W
Time: 16:30-17:20
Location: ECS116

Required Text:

Title: Electronic Properties of Engineering Materials
Author: J. D. Livingston
Publisher: Wiley
Year: 1999 (or reprinted edition)

References:

R. E. Hummel, "Electronic Properties of Materials," Springer, 2011.
http://dx.doi.org/10.1007/978-1-4419-8164-6 (available for free on UVic network)
course website: http://web.uvic.ca/~rgordon/elec220/elec220.html (netlink ID login)

Assessment:

Assignments	8% (4x2%) in dropbox **by 5pm** on 26 May, 12 June, 10 July, 28 July
Tests	52% (4x13%) in class on 5 June, 19 June, 17 July, 31 July
Final	40%

Due dates for assignments:
See above. 0 given for late assignments.

Course Description

1. Course Objectives: To understand the fundamental properties of materials relevant to electronic and photonic devices.
2. Learning Outcomes:

   Knowledge base for engineering: practice of mathematics, natural science material related to electrical and computer engineering devices, fundamental materials engineering

   Problem analysis: formulation and solution of materials based device characteristics

   Design: understanding of how materials influence engineering design (e.g., influence of temperature changes)
3. Syllabus: Electrical theory of metals, semiconductors and insulators, required for the theory, design and implementation of electronic, wireless and photonic devices. Conduction and resistance, AC and optical interaction with conductors, insulators and capacitors, optical properties of insulators, basic quantum mechanics, electrons in metals, electrons in solids (band theory), metals and insulators, semiconductors.

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.

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/calendar2014/GI/GUPo.html

Policy on Inclusivity and Diversity
See http://web.uvic.ca/calendar2014/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/undergrad/index.php#section0-25 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/calendar2014/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.