Department of Electrical and Computer Engineering

COURSE OUTLINE

ELEC 300 – Linear Circuits: II

Term - SPRING 2015 (201501)

Instructor

Dr. Jens Bornemann
Phone: 250-721-8666
E-mail:

Office Hours

Days:	Mondays, Thursdays
Time:	15:00 – 16:00
Location:	ELW 309

Lectures

A-Section(s):	A01 / CRN 21041
	A02 / CRN 21042
Days:	Mondays & Thursdays
Time:	10:00-11:20 AM
Location:	ECS 125

Labs **Location: ELW B324**

B-Section(s):	Days:	Time(s):
B01	Monday	12:00-15:00
B03	Tuesday	13:30-16:30
B05	Tuesday	16:30-19:30
B07	Wednesday	13:30-16:30
B09	Thursday	12:00-15:00
B11	Monday	15:00-18:00

Labs begin week of 26 Jan 2015 (c.f. schedule below)

Required Text

Title:	Fundamentals of Electric Circuits
Author:	C.K. Alexander and M.N.O. Sadiku
Publisher:	McGraw Hill
Year:	2007, 2009 or 2013 (5th ed.)

Optional Text

Title:	Electric Circuits
Author:	J.W Nilsson and S.A. Riedel
Publisher:	Pearson
Year:	2015 (10th ed.)

Assessment:

Assignments	10 %
Labs	20 %
Mid-term	20 %
Final	50 %

Date: 19 Feb 2015

Note:

1. Failure to complete all laboratory requirements will result in a grade of N being awarded for the course.
2. Students failing the mid-term test (less than 10 out of 20) will be evaluated by a scheme, which adds the percentage of the mid-term test to that of the final exam. This procedure will also be generally adopted for assignments and the midterm test, if it results in a higher percentage for the student.
3. Students earning less than 45% (less than 22.5 out of 50) in the final exam will fail the course.

Due Dates for Assignments: TBA

Couse Website: TBA

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+	9	90 – 100	
A	8	85 – 89	
A-	7	80 – 84	
B+	6	77 – 79	
B	5	73 – 76	
B-	4	70 – 72	
C+	3	65 – 69	
C	2	60 – 64	
D	1	50 – 59	
Failing Grades	**Grade Point Value**	**Percentage for Instructor Use Only**	**Description**
E	0	0 - 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.

**Assignment of E grade will be at the discretion of the Course Instructor.*

The rules for supplemental examinations are found on page 80 of the current 2014/15 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

   To introduce students to more advanced concepts pertaining to network analysis in the time and frequency domain, including the treatment of active circuits.

2. Learning Outcomes

   At the end of the course, students will be able to …
   - demonstrate functionality of circuits containing operational amplifiers
   - assess the performance of circuits that have time dependent responses
   - use Laplace transforms to find the response of linear circuits to time varying inputs
   - solve for zero input and forced response as a function of time using node or mesh analysis
   - design circuits which have specified transfer functions and meet other specified constraints
   - evaluate the frequency response of linear circuits and make straight line Bode gain and phase plots
   - design a cascade of first and second order active or passive filter circuits to achieve a desired transfer function
   - analyze circuits containing coupled inductors and ideal transformers
   - evaluate sinusoidal steady state response of linear circuits using phasors
   - evaluate two port parameters of linear circuits and find the response of two ports to external inputs

3. Syllabus

	Appr. No of Classes
Basic Circuit Laws (review)	2
Operational Amplifiers	2
Transfer Functions	1
Bode Plots	4
Serial and Parallel Resonance	1
Filters	2
Laplace Transforms for Circuits	4
Coupled inductors and transformers.	2
Two-Port Networks	4
Sub Total	22
Midterm Test	1
Review	2
Total	24

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 eceasst@uvic.ca 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/assets/docs/professional-behaviour.pdf 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.

Spring 2015 TERM 22 Dec 2014

Two-Week Block Lab Schedule

Morning Schedule
a 8:30 - 11:30
b 11:30 - 14:30

Afternoon Schedule
m 12:00 - 15:00
n 12:30 - 15:30
p 13:00 - 16:00
q 13:30 - 16:30
r 14:00 - 17:00
s 14:30 - 17:30
t 15:00 - 18:00
u 15:30 - 18:30
v 16:00 - 19:00
w 16:30 - 19:30
x 17:00 - 20:00
y 17:30 - 20:30
z 18:30 - 21:30

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Week 1 (Odd Week) starts Jan 26 to 30, 2015	CENG 450 B01 *s*		CENG 460 B01 *u*		
	ELEC 300 B01 *m*	ELEC 300 B03 *q*	ELEC 300 B07 *q*	ELEC 300 B09 *m*	
	ELEC 300 B11 *t*	ELEC 300 B05 *w*			
	ELEC 320 B01 *t*			ELEC 320 B03 *m*	
				ELEC 320 B05 *t*	
					ELEC 330 B11 *s*
	ELEC 340 B01 *m*	ELEC 340 B03 *q*	ELEC 340 B05 *w*		
			ELEC 360 B01 *u*		ELEC 360 B03 *s*
		ELEC 459 B01 *s*			
		ENGR 120 B03 *b*	ENGR 120 B06 *n*		ENGR 120 B11 *n*
	ENGR 120 B01 *s*	ENGR 120 B04 *s*	ENGR 120 B07 *s*	ENGR 120 B09 *s*	ENGR 120 B12 *s*
	ENGR 120 B02 *w*	ENGR 120 B05 *w*	ENGR 120 B08 *w*	ENGR 120 B10 *w*	ENGR 120 B13 *w*
	ENGR 120 B14 *z*	ENGR 120 B15 *z*			

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Week 2 (Even Week) starts Feb 2 to 6, 2015			CENG 460 B02 *u*		CENG 460 B04 *s*
	ELEC 320 B02 *t*			ELEC 320 B04 *m*	
				ELEC 320 B06 *t*	
	ELEC 330 B02 *m*	ELEC 330 B04 *q*	ELEC 330 B08 *q*	ELEC 330 B10 *m*	
	ELEC 330 B12 *t*	ELEC 330 B06 *w*			
	ELEC 340 B02 *m*	ELEC 340 B04 *q*			ELEC 340 B08 *r*
			ELEC 360 B02 *u*		

Notes: Shaded sections are held on both odd and even weeks
ENGR 120 labs are 2 hours in duration & start the 2nd week of classes

SPRING 2015 TERM
Alternating Lab Weeks Schedule

	M	T	W	R	F	
	5-Jan **First day of classes**	6-Jan	7-Jan	8-Jan	9-Jan	
	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan	
	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	
WEEK 1	26-Jan	27-Jan	28-Jan **FIRST WEEK OF LABS**	29-Jan	30-Jan	1
WEEK 2	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	2
(Feb 9 - 13)	9-Feb HOLIDAY	10-Feb **(Reading Break)**	11-Feb **NO LABS**	12-Feb **THIS WEEK**	13-Feb	3
WEEK 1	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	4
WEEK 2	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	5
WEEK 1	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	6
WEEK 2	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	7
WEEK 1	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	8
WEEK 2	23-Mar	24-Mar	25-Mar **LAST WEEK OF LABS**	26-Mar	27-Mar	9
	30-Mar	31-Mar	1-Apr	2-Apr **Last day of classes**	3-Apr HOLIDAY	10
	6-Apr HOLIDAY	7-Apr	8-Apr	9-Apr	10-Apr	

Note: Week 1 = odd weeks, Week 2 = even weeks