Department of Electrical and Computer Engineering

COURSE OUTLINE

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ELEC 460 – Control Theory and Systems II
Spring 2015 (201501)

(see also: http://www.ece.uvic.ca/~panagath/ELEC460/ELEC460.html)

Instructor:

Dr. Pan Agathoklis
Phone: 721-8618
E-mail: pan@ece.uvic.ca

Office Hours:

Days: Wednesdays
Time: 10:00 a.m. – 12:00 noon
Location: EOW 423

Lectures:

A-Section(s): AO1/CRN 21109, AO2/CRN 21110#
Days: Mondays and Thursdays
Time: 8:30 – 9:50 a.m.
Location: COR A125

Extra Lectures:

Wednesday, **January 7**, 2:30-3:50 pm in ECS 108
Wednesday, **January 14**, 2:30-3:50 pm in ECS 108
There will be no lectures on **February 23 and 26**.

Required Text:

Title: Discrete Time Control Systems
Author: K. Ogata
Publisher: Prentice-Hall
Year: 1995

Assessment:

Assignments: 5%
Mid-term 35% Date: Thursday, February 19, 2015
Final 60%

For graduate students see http://www.ece.uvic.ca/~panagath/ELEC460/ELEC460.html#Assessment

Due dates for assignments: see http://www.ece.uvic.ca/~panagath/ELEC460/ELEC460.html

Course Description

Syllabus ELEC 460: Sampling in Control Systems. The z-transform and response between sampling instants. Analysis of sampled data systems and stability testing. State-space analysis and design of continuous and discrete systems. Controllability, observability and zero input stability analysis. Pole placement techniques. (Prerequisite: 360)

Learning Outcomes

1 Apply z-Transform to solve difference
2 Discuss description of discrete systems using transfer functions and state-space description
3 Analyse stability, transient and steady state system response
4 Demonstrate the digital implementation of lead and lag compensators
5 Analyse controllability and observability for systems in state space description
6 Design linear state feedback controllers using pole-placement
7 Apply state observers for state estimation of linear systems in state-space description

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	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.

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.