Department of Electrical and Computer Engineering

COURSE OUTLINE

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ELEC 483/583 – Digital Video Processing
Spring 2015 (201501)

(see also: http://www.ece.uvic.ca/~panagath/ELEC483/ELEC483.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 21112, AO2/CRN 21113
ELEC 583/CRN 21132
Days: Mondays and Thursdays
Time: 11:00 am – 12:50 p.m.
Location: DSB C126

Extra Lectures:

Wednesday, **January 7**, 4:00-5:20 pm in ELL 162
Wednesday, **January 14**, 4:00-5:20 pm in ELL 162
There will be no lectures on **February 19 and 26.**

Required Text:

Title: Video Processing and Communications
Author: Y. Wang, J. Osterman and Y-Q. Zhang
Publisher: Prentice-Hall
Year: 2002

Assessment:

Assignments:	5%	
Project:	15%	Due on the day of final exam
Mid-term	25%	Date: Monday, February23, 2015
Final	55%	

Due dates for assignments: see http://www.ece.uvic.ca/~panagath/ELEC483/ELEC483.html

Course Description

Syllabus **ELEC 483/583**: Representation of digital video. Image formation models. Spatio-temporal sampling and sampling structure conversion. Two and three-dimensional motion estimation techniques. Optical flow, block-based and pel-recursive methods for motion estimation. Image and video compression methods and standards. Interframe compression and model-based methods for video compression. Digital video systems and applications. (Prerequisite: 310)

Learning Outcomes

1 Apply multidimensional Fourier and z Transforms to analyse video signals
2 Interpret the multidimensional sampling theorem using lattices
3 Interpret video sampling and sampling rate conversion
4 Illustrate the video standards conversion
5 Use Motion Estimation and Motion Compensation for video frame prediction
6 Demonstrate the foundations of hybrid video coding
7 Illustrate the principles of video coding standards

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.