ELEC 483/583 – Digital Video Processing
Spring 2016 (201601)

(see also: http://www.ece.uvic.ca/~panagath/ELEC483/ELEC483.html)

Instructor:

Dr. Pan Agathoklis
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Lectures:

A-Section(s): AO1/CRN 21171, AO2/CRN 21172
ELEC 583/CRN 21196
Days: Mondays and Thursdays
Time: 11:30 am – 12:50 p.m.
Location: CLE D126

Office Hours:

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

Extra Lectures:
Tuesday, **January 12**, 2:30-4:00pm in ELL162

There will be no lecture on **February 1.**

Required Text:

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

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

Assessment:

Assignments: 5%
Project: 15%   Due on the day of final exam
Mid-term   25%   Date: Thursday, February 4, 2016
Final   55%

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

Assignment of E grade and supplemental examination for this course will be at the discretion of the Course Instructor. The rules for supplemental examinations can be found in the current Undergraduate Calendar.

http://web.uvic.ca/calendar/FACS/UnIn/UARe/Grad.html

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 Chair of the Department by email or the Chair's Secretary to set up an appointment.

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

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

Standards of Professional Behaviour
You are advised to read the Faculty of Engineering document Standards for Professional Behaviour, which contains important information regarding conduct in courses, labs, and in the general use of facilities.

https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Undergraduate Calendar for the UVic policy on academic integrity.

http://web.uvic.ca/calendar/FACS/UnIn/UARe/PoAcI.html

Course Lecture Notes

Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.