# CSC420: Introduction to Image Understanding, 2011F

Professor:	Allan <sub>+</sub> Jepson
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Office:	D.L. Pratt Bldg, Room 283D
Lectures:	Tues. 3pm, Fri. 11:00am, LM 123, starts Sept. 13.
Tutorial:	Thurs. 3pm, LM 123, starts Sept. 15.
Course Homepage:	www.cs.toronto.edu/~jepson/csc420
<b>CDF Bulletin Board:</b>	https://csc.cdf.toronto.edu/bb/YaBB.pl
Prof's Office Hour:	Fri., Noon-1pm, or by appointment.

### **Calendar Description**

Introduction to fundamental concepts in image understanding, the subdiscipline of artificial intelligence dealing with the automation of visual tasks by computer. Exploration of a number of real-world image interpretation problems, as motivation for key low- and intermediate-level vision algorithms. A course project will include the construction of a number of practical vision systems.

**Modification.** There is no course project this term. However, the assignments will be directly relevant to the development of practical vision systems.

#### **Course Texts**

- Richard Szleski's freely available, on-line textbook is a very worthwhile resource. We will assign readings from the Sept 3, 2010 version. The book is available from http://szeliski.org/Book/
- Lecture notes and other required readings will be posted on the course website.

### **Required Background**

A second year course in data structures (e.g., CSC263H), first year calculus (e.g., MAT135Y), and linear algebra (e.g., MAT223H) are required. Students who have not taken CSC320H will be expected to do some extra reading (e.g., on image gradients, and SIFT).

### Grading

The mark weighting is 20% on each of three assignments and 40% on the final exam.

#### Assignments

Assignments involve both theoretical problems and the development of visual algorithms. We will use Matlab for the assignments.

Read about academic honesty and plagiarism on the link provided on the course homepage.

### Late Penalty

Assignments must be submitted electronically on CDF. The lateness policy is:

- 10% per day, or any part thereof, up to five days late.
- 100% after more than five days late.

We will make accommodations for illness and other serious issues. See the course homepage for a link to the required medical certificate.

## **Course Schedule**

A tentative schedule for this term is as follows. Note that there is no lecture Tues., Nov 8 due to the fall break.

Week	Dates	Торіс
#1	Sept 13, 16	Image Projection
#2	Sept 20, 22	Image Projection (cont.), Image Features
#3	Sept 27, 30	Image Features (cont.)
	Tues, Sept 27	Assignment #1 Posted.
#4	Oct 4, 7	Model Fitting
#5	Oct 11, 14	Model Fitting (cont.)
	Tues, Oct. 11	Assignment #1 Due.
#6	Oct 18, 21	Multiview Stereo
	Tues, Oct. 18	Assignment #2 Posted.
#7	Oct 25, 28	Multiview Stereo (cont.)
#8	Nov 1, 4	Motion and Tracking
	Tues, Nov. 1	Assignment #2 Due.
	Wed, Nov 3	Drop Day.
#9	Mon-Tues, Nov. 7,8	Fall Break. No classes.
	Fri, Nov 11	Motion and Tracking (cont.)
#10	Nov 15, 18	Motion and Trackng (cont.), Object Recognition
	Tues, Nov 15	Assignment #3 Posted.
#11	Nov 22, 25	Object Recognition (cont.)
#12	Nov 29, Dec 2	Object Recognition (cont.)
	Tues, Nov 29	Assignment #3 Due.
#13	Tues, Dec 6	Review.

# What's with the "+" in Allan<sub>+</sub>?

- First it says thank you to a wonderful soul who donated their kidney to me (Nov. 2008).
- Second it helps raise awareness of organ donation. It can be the gift of life.
- Third it is a reminder that, due to the anti-rejection drugs I need take, I am immune compromised. Both you and I need to take all reasonable care to avoid contact when sick. I am happy talk to you more about this if you have any questions.