

UNIVERSITY OF DELAWARE
DEPARTMENT OF COMPUTER AND INFORMATION SCIENCES
CISC 4/689: COMPUTER VISION, Spring 2006

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Description: This is an introductory course on principles of computer vision. It covers basic topics of computer vision, and introduce some fundamental approaches for computer vision research. It entails topics on the analysis of images and video in order to recognize, reconstruct, model, and otherwise infer static and dynamic properties of objects in the three-dimensional world. It studies the geometry of image formation; basic concepts in image processing such as smoothing, edge and feature detection, color, and texture; segmentation; shape representation including deformable templates; stereo vision; motion estimation and tracking; techniques for 3-D reconstruction; image registration methods.

Class Text:

Forsyth and Ponce, **Computer Vision: A Modern Approach**, Prentice-Hall, 2003.

Additional Reading:

Emmanuele Trucco, Alessandro Verri, "Introductory techniques for 3-D Computer Vision", Prentice Hall, 1998.

Mubarak Shah, "Fundamentals of Computer Vision" (on-line)

Required Background:

This course is intended for senior level undergraduate (CISC489) students/ graduate (CISC689) students with extensive programming skills, good mathematical background (linear-algebra) and a serious interest in image analysis.

Grading:

- For CISC 489 students:

Midterm-1 : 20%

Midterm-2 : 20%

Programming assignment-1: 15%

Programming assignment-1: 15%

Final Exam : 30%

- For CISC 689 students:

Midterm-1 : 20%

Midterm-2 : 20%

Programming assignment-1: 7.5%

Programming assignment-1: 7.5%

Final Project: 15%

Final Exam : 30%