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Winter 2010

### CEG 725: Computer Vision II

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# CEG-725 Computer Vision II

**Term:** Winter 2010    **CRN:** 21483

**Lecture:** 4:10- 5:25 PM, M, W

**Room:** 009 Millett

**Instructor:** A. Goshtasby

**Office:** 495 Joshi

**Phone:** 937-775-5170

**Email:** [agoshtas@wright.edu](mailto:agoshtas@wright.edu)

**Office Hours:** 2:00 - 4:00PM, M, W, or by appointment.

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**No. Units:** 4

**Prerequisites:** CEG-724

**Textbook:**

*Multi View Geometry in Computer Vision, Second Edition*

Hartley & Zisserman

Cambridge University Press, 2003

**Additional Reading:** To be handed out in class.

**Purpose of Course:**

This course is a continuation of CEG-724 Computer Vision I. The primary focus will be on vision processes for 3-D scene recovery.

**Contents:**

1. Introduction (ch1)
2. Projective geometry and 2-D transformations (ch2)
3. Estimating 2-D transformation parameters (ch4)
4. Camera models (ch6)
5. Camera calibration (ch7)
6. Epipolar geometry and and stereo vision (ch9)
7. 3-D reconstruction from two views (ch10)
8. Stereo camera calibration (ch11)
9. Shape from shading (handout)
10. Shape from texture (handout)
11. Shape from line drawing (handout)

**Learning Goals:**

In this course we will learn computer algorithms that interpret images. Some of the algorithms will be practiced through computer implementation.

**Projects and Exams:**

There will be three projects, three quizzes and a presentation. A typical programming assignment will require about 20 hours of study and programming. Each student will be assigned a paper to read and present to the class.

**Grading Policy:**

Projects will worth 45%, quizzes will worth 45%, and presentation will worth 10% of the overall grade. Grades will be assigned as follows. A: [91..100], B: [81..90], C: [71..80], D: [61..70], F: [0..60].

**Calendar:**

Project 1	Handed out: 1/18 Due: 2/1
Project 2	Handed out: 2/3 Due: 2/17
Project 3	Handed out: 2/22 Due: 3/8
Quizzes	On: 1/20, 2/8, 3/3
Presentations	During last week of classes