Computer Vision --- Course Syllabus

Instructor：Prof. Daw-Tung Lin
Category：Elective
Period of Study : One Semester
Credits：3

Teaching Objectives：

This course provides necessary theory and example for students and practitioners who will work in fields where significant information must be extracted automatically from images. Our goals were to provide a basic set of fundamental concepts and algorithms and also discuss some of the exciting evolving application areas.

Course Outline :

1. Vision, the Challenge (Chapter 1)
2. Color Image Processing
3. Thresholding Techniques (Chapter 4)
4. Edge Detection (Chapter 5)
5. Corner and Interest Point Detection (Chapter 6)
6. Texture (Chapter 8)
7. Binary Shape Analysis (Chapter 9)
8. Boundary Pattern Analysis (Chapter 10)
9. Pattern Matching Techniques (Chapter 14)

For your reference:

10. Automated Visual Inspection (Chapter 20)
11. Inspection of Cereal Grains (Chapter 21)
12. Surveillance (Chapter 22)
13. In-Vehicle Vision Systems (Chapter 23)

Textbook :

Computer & Machine Vision, by E.R. Davies, Academic Press, Elsevier, 2012

Handouts:

http://www.csie.npu.edu.tw/~dalton

Course Requirements:
1. Midterm Exam, 20%
2. Final Exam, 20%
3. Three Programming Project and Presenation, 60% (20% each)
4. -1% per absence