

ECE 457 – Digital Image Processing Fall 2009

- Instructor: Dr. Elisa H. Barney Smith
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E-mail: EBarneySmith@boisestate.edu
- Class Meeting Times: MW 10:40-12:00am
ET 314
http://coen.boisestate.edu/EBarneySmith/Image_Proc
- Office Hours: Monday & Wednesday 1:40-2:30
I will also be available in my office at many other times. Stop by if you have questions.
- Prerequisites: ECE 350, COMPSCI 117 or COMPSCI 125, or Perm/Inst
- Text: Rafael C Gonzalez and Richard E Woods, "Digital Image Processing," second edition, © 2002, Prentice Hall, ISBN 0-201-18075-8
-or-
Rafael C Gonzalez and Richard E Woods, "Digital Image Processing," third edition, © 2008, Prentice Hall, ISBN 0-13-168728-8
- Grading:
- | | | | |
|-----------|-----|---|------------------------|
| Homeworks | 50% | A | guaranteed with a 90% |
| Projects | 50% | B | guaranteed with an 80% |
| | | C | guaranteed with a 70% |
| | | D | guaranteed with a 60% |

Homeworks will involve solving problems from the text, or running experiments using pre-written software (either MATLAB or Java) and commenting on the results.

Projects will require the student to write a computer program to implement an algorithm discussed in lecture and to do experiments with that code.

- Learning Objectives: Students taking this course will
- gain an understanding of the principles of computer-based image processing;
 - gain skills in two-dimensional signal analysis and processing; and
 - gain the ability to use modern computer-based algorithms to design or evaluate potential imaging systems.
 - be able to explain various image representations, human visual perception, color space, and standards.
 - be able to write computer programs to perform image filtering, enhancement, restoration, and transform.
 - be able to calculate image geometrical transformation and perform camera modeling.
 - be able to implement algorithms to solve real-world image and video processing problems.

Learning Assessment: Assessment will be through homeworks and projects.