

Course Syllabus

Term: Spring 2007

Course Title: Introduction to Digital Image Processing

Instructor:

Dr. Ming-Sui Lee

Department of Computer Science and Information Engineering

CSIE Building, Room #520

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Lecture: 9:10 a.m.~ 12:10 p.m. Thursday

Website: www.csie.ntu.edu.tw/~dip/

Instructor Office Hours:

10:00 a.m. ~ 12:00 p.m., Wednesday or by appointment

(For homework-related problems, please go directly to the TA.)

Teaching Assistant:

陳映睿 CSIE Building, Room 306

E-mail: dip@csie.ntu.edu.tw

Textbook:

William K. Pratt: Digital Image Processing, 3rd Edition, John Wiley & Sons Inc., 2001.

Reference Books:

1. D. E. Dudgeon and R. M. Mersereau: Multidimensional Digital Signal Processing, Prentice Hall, 1984.
2. Anil K. Jain: Fundamentals of Digital Image Processing, Prentice Hall, 1989.
3. J. S. Lim: Two-Dimensional Signal and Image Processing, Prentice Hall, 1990.
4. Rafael C. Gonzalez and Richard E. Woods: Digital Image Processing, Addison-Wesley, 1992
5. Ronald N. Bracewell: Two-Dimensional Imaging, Prentice Hall, 1995.
6. Kenneth R. Castleman: Digital Image Processing, Prentice Hall, 1996.

Homework:

There will be 4 projects. All require computer programming. No late homework will be accepted.

Grading Policy:

1. Homework: 40%
2. Quiz: 15%
3. Midterm Exam: 20%
4. Final Exam: 25%

Tentative Schedule:

- I. Introduction and Digital Image Fundamentals
- II. Image Enhancement in Spatial Domain.

- III. Edge Detection.
- IV Geometrical Modification.
- V Morphological Processing.
- VI Digital Halftoning and Inverse Halftoning.
- VII Texture Analysis.
- VIII Document Processing.
- IX Image Sampling and Transforms.
- X Image Enhancement in Frequency Domain.
- XI Color Image Processing.
- XII Image Compression