

**ELE 491 Special Problems: GUI Based Image Processing Algorithms  
Summer Session I, 2007**

MW6:00 - 9:45PM Kelley Hall Rm. 204/205

Instructor: John DiCecco Email: [dicecco@ele.uri.edu](mailto:dicecco@ele.uri.edu) Phone: 401 874-5870 Cell: 401 219-1021  
Office Hours: MW 4-6 and by appointment just about anytime

**Text:** *Practical Algorithms for Image Analysis: Descriptions, Examples, and Code*  
Seul, O’Gorman and Sammon (\$48.54 from Amazon - New)

Any C++ book for function and syntax reference  
Tutorial - [www.wxwidgets.org](http://www.wxwidgets.org)

**Grading**

Programming Exercises 10%      2 Exams 30%      Final Exam 35%      Project 25%

**Week 1**

Monday

Introduction

- Image processing
- wxWidgets Program

Wednesday

Grayscale

- Noise reductions
- Edges-Filters

**Week 2**

Monday Filters

Linear/Nonlinear

- Lowpass, Highpass, Median, ...
- Programming filters

Wednesday

- 1-D and 2-D filtering Ch. 5,7
- Programming assignment 1 Handout
- Exam 1

**Week 3**

Monday - Frequency Analysis

- 2-D Fourier Transforms (Matlab)

- Aliasing

- Windowing

Wednesday – Restoration

- Techniques for eliminating noise
- Geometric transformations

**Week 4**

Monday

- Sizing windows
- wxImage class
- Project assignment/topics

Wednesday -

- Statistics
- Exam 2

**Week 5**

Monday

- Matlab and wxWidgets
- Input
- Mouse/user interface

Wednesday

- Presentations
- Final Exam