CAP4401 – Image Processing (Spring 2017)

The purpose of this course is to give a practical introduction to a range of fundamental image processing algorithms. Prerequisite for this class include data structures background and experience in C/C++ programming.

- Image manipulation and smoothing
- Histogram modification and thresholding
- Color image processing
- Image filters
- Edge detection
- Morphological filters
- Feature extraction
- Boundary and region representation.
- Hough Transform
- Applications

The recommended text the book by W. Burger and M. Burge "Principals of Digital Image Processing" (volumes: Fundamental Techniques and Core Algorithms), Springer, 2009. We will use it as well as handouts and class notes.

- Time: 2:00-3:15 pm, Mon/Wed, Room: ISA 3050
- Instructor: Dmitry B. Goldgof , office: ENB326, phone: 974-4055, email: goldgof@mail.usf.edu, office hours: Monday 11:30-1:00pm, Wednesday 12:30-2:00pm or by appointment
- TA: Chih-Yun Pai, office: ENB329, email: chihyun@mail.usf.edu, office hours: Monday and Wednesday 3:30-5:30pm (tentative)

GRADING:

- Computer Assignments 40%
- Quiz 1 25%
- Quiz 2 25%
- Labs and Consolidated Lab report 10%
- Grading is A, B, C, D and F, i.e. there is no +/- grading
- Grading scale: A: 90 - 100 points, B: 80 - 89, C: 70 - 79, D: 60 - 60, F: 60 or fewer points
- Penalty for ANY unethical activity is a FF. The definition of unethical activities include, but is not limited to, copying or sharing information on tasks meant to be completed individually as well as copying code, text and images from articles, books or web sources without proper citation. Unless specified otherwise, all tasks in this course are to be complete individually.

ATTENDANCE:

Class attendance is required although not checked. Students are responsible for all information communicated during class. This information will not necessary be duplicated in the web pages or in the text.

MISSED TESTS, QUIZZES, AND ASSIGNMENTS:

A test (or quiz) missed due to illness (or work) will be made up when proper documentation is provided in writing in timely manner (as soon as known). Programming and other assignments must be submitted by the due date. Late assignments will be penalized up to 30% per day. Students who anticipate being absent from class due to religious observance should inform the instructor by the second class meeting.

RELEVANT DATES:

Quiz 1: On or about February 27 - exact date will be announced in OASIS.
Quiz 2: On or about April 5 - exact date will be announced in OASIS.
Other due dates will be announced on the course web page.