CS 4499/5599 Topics in Applied Image Processing  
Fall 2013, 3 Credits

Textbooks:

Prerequisite: Permission of Instructor.

Lectures: Tue/Thu 8:00am – 9:15am, LIBR 36/CHE 313

Catalog Description: Select topics in applied image processing. This experimental course explores the applications of MATLAB Image Processing Toolbox and Compute Unified Device Architecture (CUDA) programming model on image processing. The course takes a balanced approach between algorithmic development and hands-on experience.

Instructor: Dr. Steve C. Chiu, Associate Professor of Electrical Engineering, email: chiustev@isu.edu
Office and Office Hours: LEL 210, Thursday 1:30pm – 3:00pm, or by appointment.

Grading Policy: Course grades will be based on the following distribution: 1 mid-term exam (20%), 6 assignments (30%), 1 final exam (30%), and 1 term report (20%). Assignments are group-based and require compile and execution demonstrations. The term report is group-based. Both the mid-term and final exams are individual.

Late Policy: If an assignment cannot be submitted by the deadline, you must contact the instructor before the deadline to arrange a for late submission. Otherwise, it will not be accepted. A late submission will entail a penalty of 10% of the maximum points per delayed day. For example, a submission that is 2 days late and would have received 80 points out of 100 will receive 80 – 100 * 10% * 2 = 60 points.

Planned Class Schedule and Topics Covered:
August     Image Processing Basics
September  Spatial Domain Image Processing
October    Frequency Domain Image Processing
November   Image Processing with CUDA/GPU
December   Case Studies
If time permits, topics beyond the ones listed above will also be covered.

Midterm Exam: mid of October
Final Exam: during Finals Week

Course Learning Objectives:

1. Students have knowledge about the fundamentals of image processing.
2. Students have knowledge about the software tools for image processing.
How to do well in this class:

It will be necessary to memorize certain essential principles to practice with them. But memorization alone will not ensure a good grade. You need to understand the concepts that we discuss in this class and be able to apply them. You will not be able to successfully prepare for the exams the night prior to the exam, nor will you be able to complete an assignment the day before it is due.

Come to class, pay attention, ask questions, then review the material after each class, and work hard on the assignments. You will have copies of my class slides so that you can pay close attention during class and not have to worry about taking notes. A couple of days before the exam, go over the materials and summarize them, then spend time on your summary.

If you missed or will miss an exam, you must provide documentation justifying that absence, or you will receive a grade of zero on the exam. In case of illness, you must provide written documentation from your physician. In case of personal problems, you must provide a statement from a responsible independent source justifying your absence. No other flexibility will be provided.

Academic Integrity

Academic integrity is a fundamental expectation of all students in this course. Cheating, plagiarism, and other forms of academic misconduct will not be allowed in this course. Below is a list of commonly seen misconducts. Please note that this is not a complete list. It is your responsibility to be familiar with the student code of conduct, and conduct yourself according to the standards.

- Copy answers from another student's examination sheet, assignment, or project report.
- Copy answers from solutions provided to students who took the course previously.
- Copy answers from other sources or discussions that you did not participate in.
- Make use of notes during a closed book or closed notebook examination.
- Make use of electronic devices not allowed in an examination.
- Allow another student to take an examination in your place.
- Represent the work of another individual as your own.
- Assist another student to violate academic integrity.