

# Tentative Syllabus

## CSCE 763: Digital Image Processing (Spring 2024)

Class Meeting: MW 2:20 PM – 3:35 PM in 300Main B111

Class Homepage: <http://www.cse.sc.edu/~tongy/csce763/csce763.html>

Course Instructor: Dr. Yan Tong

Email: [tongy@cse.sc.edu](mailto:tongy@cse.sc.edu)

Storey Innovation Center 2273

777-0801 (office)

Office Hours: by appointment

### Academic Bulleting Description:

Concepts and techniques for digital image processing; emphasis on low-level processes that analyze discrete images at the pixel level.

### Prerequisites:

A good background in calculus, linear algebra, statistics, signal processing, programming in C++, Python, and/or MATLAB

### Course Textbook:

*Digital Image Processing*, Rafael C. Gonzalez and Richard E. Woods, 4<sup>th</sup> Edition, Pearson

**Course Reference Materials:** Latest reports/papers in image processing.

All course materials comply with copyright/fair use policies.

### Course Content:

This is a graduate-level course in computer science. It deals with the theories and applications of image processing in terms of acquisition, representation, storage, transmission, and understanding. Topics to be covered include: image acquisition and digital image representation, image enhancement, image restoration, color image processing, multiresolution image processing, image compression, image segmentation, morphological image processing, object recognition, and special topics on the applications of digital image processing. This course is particularly useful for those students who are interested in computer vision, vision-based pattern recognition, and robotics.

### **Grading System:**

All grades will be posted on [Blackboard Ultra](#). You are strongly encouraged to check your scores in Blackboard regularly. A final letter grade will be assigned based on:

A (90-100%), B+ (86-89%), B (80-85%), C+ (76-79%), C (70-75%), D+ (66-69%), D (60-65%), and F (0-59%)

### **Grading policy**

The final course grade will be based upon your performance in all aspects of the course. These include:

- |                                |      |
|--------------------------------|------|
| • Homework assignments         | 20 % |
| • Midterm exam                 | 15 % |
| • Paper reading & presentation | 15 % |
| • Final project & presentation | 25 % |
| • Final exam                   | 20%  |
| • Quizzes                      | 5 %  |

### **Course Communication:**

The lecture notes and homework assignments will be posted on the [Blackboard Ultra](#) and [course website](#), and solutions to the assignments, quizzes, and exams will be posted on the [Blackboard Ultra](#). Announcements of this course will be posted in [Blackboard Ultra](#) and [course website](#) whenever necessary.

I will be communicating with you regarding grades and assignments. If you need to get in touch with me, the best method is via email ([tongy@cse.sc.edu](mailto:tongy@cse.sc.edu)). Generally, I will reply to emails within 24 hours and will provide feedback on assignments within one week. You may also post questions pertaining to the course on the Blackboard Discussion Board. These questions will be answered within 24 hours. If you are having trouble with this course or its material, you should contact me via email to discuss the issues. If there is any other information I think is important, I will send it to your email address you have in Blackboard. It is your responsibility to ensure that your email account works properly to receive email.

### **Course Assignments:**

All course deadlines are listed in Eastern Time Zone. A due date will accompany each assignment. The due time of the homework will be at the beginning of the class. Homework assignment may have different weight when it is counted into your final grade. Homework assignments should be submitted through [Blackboard Ultra](#).

### **Late Submission Policy:**

All students are required to complete and submit assignments to [Blackboard Ultra](#) on time.

Make-up quizzes/ midterm-exam/ final exam are not allowed except excusable absences ([Graduate Academic Regulations < University of South Carolina \(sc.edu\)](#)) with appropriate documentation and advanced notice. Please refer to **Attendance Policy** below for details.

**Except exams, presentations, quizzes, and final project**, late submissions of assignments will be accepted ONLY if BOTH of the following requirements are met:

- You must contact me in advance of the required assignment to make arrangement for its completion.
- You must complete the assignments within the week following its due date.

However, late submissions will be subject to the following penalty except excusable absences: 10% will be deducted from your grade for the first day late, and an additional 5% will be deducted on each subsequent day.

**ONE-TIME waiver of late submission penalty:** except exams, presentations, quizzes, and final project, you are granted for a ONE-TIME waiver of late submission penalty - you will not be penalized if you submit your assignment in three days after due date. Please notify me in advance when you use this waiver.

#### **Attendance Policy:**

Success in this course is dependent on your active participation throughout the course. Class attendance is required as claimed in University policy. If you are absent, you are responsible for learning material covered in class. If you have an excused absence ([Graduate Academic Regulations < University of South Carolina \(sc.edu\)](#)), you will be permitted to make up coursework or complete an equivalent assignment agreed upon with me.

To arrange excuses for absences that can be anticipated at the start of the term, you should:

- Submit a written request (email is acceptable) stating the dates of the anticipated absence no later than the end of the second week of the course.
- Explain the reason for absence. Documentations are required. Please consult the policy ([Graduate Academic Regulations < University of South Carolina \(sc.edu\)](#)) for additional information.
- Include any request for make-up work.

To arrange excuses for absences that cannot be anticipated at the start of the term, (e.g. legal proceedings or illness), you should, at the first opportunity, submit in a written request stating:

- The date of absence
- The reason for absence. Documentations are required. Please [consult the policy](#) for additional information.

Any request for make-up work as soon as reasonably possible after you become aware of the need to be absent.

#### **Academic Integrity:**

You are expected to practice the highest possible standards of academic integrity. Any deviation from this expectation will result in a minimum academic penalty of your failing the assignment and will result in additional disciplinary measures. Violations of the University's Honor Code include, but are not limited to improper citation of sources, using another student's work, and any other form of

academic misrepresentation. Violations of the University's Honor Code will be reported to the Office of Student Conduct and Academic Integrity. Below are some websites for you to visit to learn more about University policies:

[Carolinian Creed \(<http://www.sc.edu/creed>\)](http://www.sc.edu/creed)

[Academic Responsibility \(<http://www.sc.edu/policies/staf625.pdf>\)](http://www.sc.edu/policies/staf625.pdf)

[Office of Student Conduct and Academic Integrity](https://www.sc.edu/about/offices_and_divisions/student_conduct_and_academic_integrity/index.php)

([https://www.sc.edu/about/offices\\_and\\_divisions/student\\_conduct\\_and\\_academic\\_integrity/index.php](https://www.sc.edu/about/offices_and_divisions/student_conduct_and_academic_integrity/index.php))

[Information Security Policy and Standards](https://sc.edu/about/offices_and_divisions/division_of_information_technology/security/policy/universitypolicy/)

([https://sc.edu/about/offices\\_and\\_divisions/division\\_of\\_information\\_technology/security/policy/universitypolicy/](https://sc.edu/about/offices_and_divisions/division_of_information_technology/security/policy/universitypolicy/))

[Graduate Academic Regulations < University of South Carolina \(sc.edu\)](#)

**Disability Services:**

[Student Disability Resource Center \(SDRC\) \(\[https://www.sc.edu/about/offices\\\_and\\\_divisions/student\\\_disability\\\_resource\\\_center/\]\(https://www.sc.edu/about/offices\_and\_divisions/student\_disability\_resource\_center/\)\)](https://www.sc.edu/about/offices_and_divisions/student_disability_resource_center/) empowers students to manage challenges and limitations imposed by disabilities. Students with disabilities are encouraged to contact me to discuss the logistics of any accommodations needed to fulfill course requirements (within the first week of the semester). In order to receive reasonable accommodations from me, you must be registered with the Student Disability Resource Center (1705 College Street, Close-Hipp, Suite 102, Columbia, SC 29208, 803-777-6142). Any student with a documented disability should contact the SDRC to make arrangements for appropriate accommodations.

**Health and Safety:**

Students are expected to comply with all university health and safety guidelines including those about COVID-19. For current COVID-19 guidelines, visit [https://sc.edu/safety/coronavirus/safety\\_guidelines](https://sc.edu/safety/coronavirus/safety_guidelines).