

# CSCE 4240 Digital Image Processing

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Office         NTDP F277  
Office Hours   3:30PM-4:30PM on Monday and Wednesday

## Description

Digital image processing involves changing the nature of an image in order to improve its pictorial information for human interpretation or render it for autonomous machine perception. The subject is cross-disciplinary and has many applications including medical diagnosis, surveillance, remote sensing, space exploration, practical solutions of digital image/video perception, etc.

## Outcomes

1. Demonstrate understanding of the basic concepts of image acquisition, sampling, and quantization.
2. Demonstrate understanding of the color spaces and color transformation.
3. Demonstrate understanding of spatial and frequency filtering techniques.
4. Demonstrate understanding of the fundamental image enhancement algorithms such as histogram modification and edge detection.
5. Develop writing and presentation skills to communicate digital image processing related topics.

## Textbook

Digital Image Processing  
Rafael C. Gonzalez, Richard E. Woods, and Steven L. Eddins,  
Prentice Hall, 2003, ISBN 9870131687288

## Grading

Assignments     500 points  
Projects         200 points  
Exams            300 points

- Assignments
- There will be five assignments. Each assignment has 100 points.
  - All assignments must be completed individually. Discussions with peer students are acceptable. However, copy-paste or submitting a similar program/report is prohibited. If such a case is identified, the students involved will be given a zero grade to the assignment or an F grade to the course.
  - A late submission is not accepted except that the student is in one of the following cases. In case of sickness, a severe accident, or any foreseeable delay that prevents the student from completing or turning in the work, discussion with the instructor is required for the consideration of accepting the late submission. A written note, e.g., from the doctor that provide treatment, that states the case is mandatory to receive any credits for the late submission.
- Project
- A project is assigned to each group of students and the total points for a project is 200.
  - Each team must turn in a package of source code, a one-page description of the program, and project presentation slides.
  - The project presentation is part of the project and takes 50 points out of the 200 for the project.
- Exam
- There are two exams, each of which takes 150 points.

## Absenteeism Policy

Attendance is required of all students. Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, in the first week of the class. For other reasons, students must provide substantial documented evidence for skipping classes.

## Collaboration and Cheating

Discussion among students is allowed. But you **must not** share source code or any kind of implementation. All work that you turn in must be completely done by yourself for the individual assignments or the group for the team project/assignment.

Cheating will not be tolerated. Students guilty of cheating on a test or an assignment can result in a mark of zero for the test or assignment or an F grade for the course. Allowing others to copy work is also considered and treated as cheating. For further details and clarifications regarding collaboration and cheating, view the university Student Rights and Responsibilities (<https://deanofstudents.unt.edu/conduct>) web page.

## Course Evaluation

At the end of the semester you will be asked to participate in two evaluations of the course and the instructor. In addition to the department exit survey, UNT offers The Student Evaluation of Teaching Effectiveness (SETE). This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work continually to improve my teaching. Your participation is appreciated.

## ADA

UNT complies with all federal and state laws and regulations regarding discrimination including the Americans with Disability Act of 1990 (ADA). If you have a disability, it is your responsibility to obtain verifying information from the Office of Disability Accommodation (ODA) and to inform me of your need for an accommodation. Requests for accommodation must be given to me no later than the first week of classes for students registered with the ODA as of the beginning of the current semester. If you register with the ODA after the first week of classes, your accommodation requests will be considered after this deadline.