

# Syllabus - CX ???? Parallel Computing Programming and Applications

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## Instructor information

Lectures: TR 6:30-7:45 pm  
Location: TBD

Instructor: [Qi Tang](#)  
E-mail: qtang@gatech.edu  
Office Hours: Mondays 2-3 pm in CODA (TBD)

TA: TBD

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## Course Description

This undergraduate-level course covers the practical and theoretical aspects of parallel computing and their applications. This is a course aiming to accelerate your code.

## Prerequisites

- Proficiency in C/C++ programming
- CS 1332, 1372, 2110 or CX 4010
- Some basic knowledge in Linux

## Topics

- Computer architecture and networks
- Parallel algorithms
- Performance modeling
- Distributed memory (MPI) programming
- Multithreaded (OpenMP) programming
- GPU (CUDA) programming
- Parallel scientific applications

## Grading

The weights for the course grade are as follows.

Category	%
Mini-Projects (about 6 during the semester)	80%
Semester-end written assignment (due during exam week)	10%
Class participation	10%

The final course grade will be assigned based on the following scale.

Grade	%
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%

## Textbooks

- The Science of Computing, Victor Eijkhout
- Parallel Programming in Science and Engineering, Victor Eijkhout
- CUDA by Example: An Introduction to General-Purpose GPU Programming, Jason Sanders and Edward Kandrot

## Pre-course Assignments

For almost every course meeting, there will be an associated pre-course assignment that you should complete before attending. The pre-course assignments will serve as the basis for in-class discussion and so it is important that you complete them.

## Course Meetings

Course meetings are meant to be highly interactive and you are expected to attend if possible. You must be able to bring a laptop computer to class and are expected to complete short programming assignments in class.

## Course Management

We will use Canvas to deliver course materials, announcements, and manage the discussion board. All course materials will be hosted on Canvas.

## Course policies, expectations & guidelines

### Plagiarism & Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For more information on the Honor Code, please visit the [OSI](#) website.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, which will investigate the incident and identify the appropriate penalty for violations.

### Accommodations for Individuals with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404) 894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible, to make an

appointment to discuss your special needs and to obtain an accommodations letter. Please also email me as soon as possible in order to set up a time to discuss your learning needs.