

Thesis Course Syllabus

Course Information

Course Prefix and Number: CS6200

Course Name: Graduate Intro to OS

Instructor: Ada Gavrilovska

Course Description

This is a graduate-level introductory course in operating systems. This course teaches the basic operating system abstractions, mechanisms, and their implementations. The core of the course focuses on OS support for concurrency (threads) and synchronization, resource management (CPU, memory, I/O), and distributed services. The practical component of the course teaches multithread programming, inter-process communication, and distributed interactions via RPC.

This course is part of the Online MS in CS degree courses. The online content for the class is available under Canvas -> Modules.

Course Learning Outcomes

1. *Operating systems concepts and mechanisms:* Upon successful completion of this course, students will acquire solid knowledge about core operating systems concepts and their implementation. This includes knowledge about process and thread abstractions, synchronization and concurrency, scheduling, memory management, inter-process communication, file systems and I/O, and core OS support for distributed systems.
2. *Practical experience with implementing systems software functionality:* Upon successful completion of this course, students will learn common techniques to implement core systems software functionality, will be able to design and develop correct systems software services, targeting either single node or distributed environments, and gain practical experience through a series of programming assignments.

Required Course Materials

No textbook is required for this course. The course material includes prerecorded lecture videos, and required reading of research papers (often partial reading only) associated with certain lecture. All research papers, required reading, and recommended reading will be provided as PDFs.

Grading Policy

Assignment Distribution and Grading Scale:

Assignments	Weight
Programming assignments	45%
Mid-Term Exam	25%
Final Exam	25%
Class Participation	5%
Total	100%

Projects:

The course will include three programming assignments. All projects will be independent. The first two projects will be in C, the last one will be in C++.

You will be provided with instructions on how to set up a Linux-based environment for the course. **DO NOT** download the VM linked in the Udacity Course Resources pages. For each project, you will be provided with relevant source code and object files so you can perform all development and debugging tasks locally. You will also be given instructions on how to test your projects against the auto-grading frameworks that will be used by the TAs. To avoid delays in accessing this information, make sure your [github.gatech.edu](https://github.com/gatech) account is properly set up.

Tentative deadlines for the programming assignments will be announced at the start of the semester. We will also suggest intermediate project "milestone" deadlines. These will not require an official submission, but you will be encouraged to follow the suggested schedule, both to avoid overloading yourselves prior to the actual deadline, and to make sure we can help you resolve the easier problems first.

Exams:

The midterm and final exam are worth 25% of the semester grade, each. The time intervals for the midterm and final exam will be announced at the start of the semester. The time interval will correspond to a multi-day time window during which you must complete the exam. The exams will be timed and proctored, and will follow a closed-notes/closed-book/closed-Internet policy.

The exams will be proctored via Honorlock (the introductory lecture mentions ProctorU, which is no longer used in the program). After the first week of the semester, you will receive more information on Honorlock. The exams are not cumulative.

Participation:

Additional 5% of the total grade are earned through Participation. This is based on your participation in the class online forums: mainly Piazza, or in the unofficial Slack channel maintained by the TAs, that many of the students are finding very useful (<https://omscs6200.slack.com/>).

Grading Scale

Your final grade will be assigned as a letter grade according to the following scale:

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

Attendance Policy

This is an online course, part of the GT OMSCS program, and the course does not include scheduled class meetings.

Academic and Research Honesty/Integrity Statement

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. Review the [Student Code of Conduct](#) and the [Academic Honor Code](#), especially [Appendix A: Graduate Addendum to the Academic Honor Code](#).

Students are expected to perform research in an ethical and responsible manner. All Doctoral and Master's Thesis students are required to take the [Responsible Conduct of Research training](#), and it is expected that students abide by the principles taught in that training while performing research for this thesis course.

Allegations of scientific or scholarly misconduct are handled in accordance with the procedures outlined by the [Policy for Responding to Allegations of Scientific or Other Scholarly Misconduct](#).

Collaboration:

Plagiarism: In most cases I expect all code that you submit was written by you. All source code, images and write ups you provide should have been created by you alone.

What is allowed: Meeting with other students to discuss implementations; you should talk about solutions at the pseudo code level. Sharing snippets of code to solve specific (small) problems; in this case the shared code should be no more than ~5 lines. Searching the web

for other solution outlines that you may draw on (but not copy directly); if you are inspired by a solution on the web, you MUST cite that code with comments in your code.

What is not allowed: Copying sections of code longer than 5 lines. Note that merely changing variable names does not suffice. Copying code from the web. Use of ideas from the web that are not cited in your comments/references.

You may review the following note on [Collaboration vs. Plagiarism](#).

Core IMPACTS

Not applicable.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Expectations of Advisors and Advisees

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The [Expectations of Advisors and Advisees](#) articulates some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.