Introduction to Operating Systems

CS 8803: Georgia Tech OMSCS Course Information

Contents

Instructors

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Description

Introduction to Operating Systems 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.

Prerequisites

To undertake this course, you should have taken an undergraduate level course on, or be otherwise familiar with, basic hardware and software aspects of computer systems organization. Prior programming experience with C is recommended, as C is required for the practical component of this course. Also, any experience using command line interfaces in Linux will be useful when creating and building projects for this course.

- Course Readiness Survey

Policies

- Students are expected to abide by the Georgia Tech Honor Code and academic policies as specified in the Georgia Tech Catalog
    - Honest and ethical behavior is expected at all times
    - All incidents of suspected dishonesty will be reported to and handled by the Office of Student Affairs
    - You are to complete all assignments yourself, unless the assignment instructions explicitly state otherwise
    - You may discuss the assignments with your classmates, but you may not copy any solution (or part of a solution) from a classmate
- Readings should be completed before the lesson for which they are listed
- All assignment and project policies, due dates, and submission information will be listed on T-Square
- Any changes to these policies and other course announcements will be posted on Piazza, which you are expected to read
- If you have any questions concerning a grade that you received in this course, first contact the teaching assistant who graded it

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Course Links

- How This Course Works
- Course Resources Page

Introduction to Operating Systems

How This Course Works

Contents

Technology Platforms

This course is taught in conjunction with Georgia Tech, and students will have to use three technology platforms when taking this course: Udacity, Piazza, and T-Square.

- **Udacity** - Classroom
  - On Udacity, students will watch online lessons
  - Also on Udacity, students will find this wiki page, a schedule for lessons and assignments, and additional course resources
  - How to Use Udacity
- **Piazza** - Forums and Announcements
  - Piazza serves as the class forum; rather than email, all non-personal class-related communications should take place there
  - Students are encouraged to ask their non-personal questions publicly on Piazza so that the instructor, TA's, and classmates can benefit from discussion; it is important that students check Piazza postings regularly
  - How to Use Piazza
  - Piazza Help Portal
- **T-Square** - Projects and Tests
  - All class projects and tests will be posted on T-Square
  - T-Square is where students will submit all projects and tests
  - How to Use T-Square
  - Getting Your Assignment Grades
  - T-Square Help Portal

Evaluation

Students will be evaluated via projects, a midterm exam, a final exam, and their participation in class.

- Exams
  - Exams will be proctored by ProctorU. Click here for detailed instructions on setting up your ProctorU account and scheduling your exams.
- Projects
  - All projects will be submitted through T-Square
- Class Participation
  - Class participation will be determined by your completion of Udacity quizzes and by your contributions on Piazza
  - Note: For the Udacity quizzes, you **are not** required to get the correct answer on the first try. You should feel free to submit answers even if you are not 100% sure that you are correct. If you do not get the correct answer after several attempts, try watching the solution video, and then come back to the quiz. Only your last submission will be checked, so if you get it right, then change you answer later, you will not get credit for that quiz.
- Grades
  - Detailed grading criteria will be provided for each deliverable

The following chart shows how each graded item counts towards your overall grade for the course.

Graded Item	% of Overall Grade
Midterm Exam	25%
Final Exam	30%
Project 1: Multi-Threaded Webserver	10%
Project 2: Experimental Analysis	10%
Project 3: Inter-Process Communication	10%
Project 4: Remote Procedure Calls	10%
Class Participation	5%

Minimum Technical Requirements

For students taking GT OMS courses, there are the following minimum technical requirements:

- Georgia Tech Computing Guide
  - Georgia Tech's Office of Student Computer Ownership issues the following Minimum Hardware Requirements to incoming undergraduates. You must meet or exceed these guidelines to ensure you have sufficient computing power to complete all course work and assignments.
- Browser and Connection Speed
  - An up-to-date version of Chrome or Firefox is strongly recommended
  - We also support Internet Explorer 9 and the desktop versions of Internet Explorer 10 and above (not the metro versions)

    - 2+ Mbps download speed is recommended
- Operating System: 64-bit OS for compatibility with 64-bit VM's
    - PC: Windows XP or higher with latest updates installed
    - Mac: OS X 10.6 or higher with latest updates installed
    - Linux: Any recent distribution that has the supported browsers installed
- Virtual Machine
    - You will be provided a virtual machine (VM) useful for performing class assignments and projects
    - For the projects, the supplied resources are identical to those used to test your submissions
    - Details for downloading and installing the VM can be found on the Class Resources Page
- Project Submissions
    - Project submissions will require files to be tarred and zipped using only *zip*, *gzip* or *compress* (please do not use rar or other proprietary formats)
- Site Support
    - For Udacity site support and course questions not appropriate for the forums (student-specific) please email Udacity Support