SYLLABUS: OMS CS6250 Computer Networks Summer 2019

Instructor: Maria Konte, Ph.D.
Head TA: Matthew McKinzie

This course focuses on advanced topics in computer networks. The goal of this class is to give students an in-depth understanding of advanced concepts through lectures, readings, discussions and hands-on projects.

SYLLABUS CONTENTS:

Assigned work for the Summer term for CS6250 includes Udacity lectures, research paper readings, five projects, and two tests.

1. Prerequisites in Computer Networks and Python

Background: A prior course in computer networking is not a prerequisite. However, this is an advanced course. Many things that would be covered in an introductory undergraduate course will not be covered in this course beyond a "review" level. Having a prior understanding of basic networking concepts is expected.

Programming skills: We will be completing the project assignments in Python 2.7 (many of the tools we're using like Mininet and Pyretic are language-dependent on Python 2.7). An intermediate level of skill with Python is adequate for the projects in this course. If you have a beginner level of skill, but have programmed something more complex than "Hello World" in Python before, then you should be able to learn what you need to about the language as you go through the course — it may just take you a little more time, and a willingness to search the Python 2.7 library reference and other Internet sources to teach yourself how to do some things.

If you have experience learning new computer languages and feel comfortable teaching yourself a new language from scratch in a short period of time, then you may find extra time

and effort will be enough to be successful (a number of courses are freely available on Udacity for this, including Introduction to Python Programming).

2. Class Schedule

The class schedule is posted on Canvas. It contains the following information (and more):

Lectures & Readings: The lectures and accompanying readings for each week. Students are responsible for watching and reading this material.

Projects: Project start and end dates are provided on the schedule. Note that instructions are provided on Canvas.

Tests: We will be having tests administered through Proctortrack software.

Academic calendar: Major Institute events are documented, but students should check the official academic calendar (found here) for a comprehensive list of dates and deadlines such as registration dates, withdrawal deadline, school holidays, etc.

Schedule changes: Changes to the class schedule/projects/etc. will be announced on Piazza. Please be sure to check Piazza on a daily basis for updates.

3. Class Policies

The course policies can be found on Canvas. Students are responsible for reading and abiding by the class policies throughout the semester.

4. Course Virtual Machine

Download here. (~2.2 GB). The username and password for the system is mininet (lower case). Please double-check that you have a complete download:

MD5Sum: 2400b77aa455c366146e9dbfff8090d7

SHA-1: 352b2b669ba58125eed99f6f2ff4f17fafc140b5

SHA-256: c618bed91750596d220ed3b18a68814e2ffa404fe855e76c49faeb1d8ea36d2c

Projects throughout the course will be released and graded, on this VM. We recommend using VirtualBox to run your VM so that we can provide support for your VM configuration. If you are willing to self-support, then you may use any virtualization system that supports importing .OVA files. We do not recommend building your own virtual machine due to specific software packages required.

5. Textbook

There is no required textbook for this class. The tests will be based on the lectures and readings provided, rather than material outside of these.

As an optional reference resource, we suggest: Computer Networking: A Top-Down Approach by James F. Kurose and Keith W. Ross (either 6th edition or 7th edition).

6. Class Communications

All communications for the class will take place within Piazza (class page here). This includes, but is not limited to the following:

Instructor/TA Announcements: Announcements within Piazza will be used to communicate updates to projects, grades being posted, and other administrative information. Students should be active on the Piazza forums, and are responsible for reading announcements within 24 hours, as the information typically will be time sensitive. While the teaching staff will make every effort to update resources/descriptions on Canvas in the event of a policy or project change, it is ultimately the responsibility of the student to obtain updates on Piazza. This includes all posts, whether they have been pinned by the teaching staff or not.

Posting Student Questions in Piazza: Students are strongly encouraged to post their questions related to the lectures, readings, weekly discussions, test preparation, or projects on Piazza. Due to the large volume of this class, we do not recommend emailing directly the instructor or the TAs.

Private Posts to Piazza: Students are able to post privately to the teaching staff on Piazza. This is appropriate when a student needs to ask a question about a personal matter or request a regrade. Students may also post privately to ask questions about material when the question would violate academic integrity rules if posted publicly. An example of this would be asking a question about their code submission for a project that requires posting the code.

Email announcements through Piazza: Particularly important announcements may occasionally be sent by email. We will use Piazza to do this, so you will receive these announcement emails at whatever email address you have in your Piazza account. This may be your Georgia Tech email address, or some other email address if you prefer. However, whichever you use, you are responsible for checking it daily in case of such announcements.

Piazza code of conduct: Please review the Piazza code of conduct for this class on the policies document, located at Canvas.

Emailing the TAs or Instructor: Students may directly email the head TA (matthewmckinzie@gatech.edu) or instructor (mkonte@gatech.edu) if there is an issue that has not been resolved through communication on Piazza. Due to the large volume of students, direct emails may take longer to be answered. Students are strongly encouraged to post on Piazza first.

7. Office Hours and Chat Sessions

The office hours schedule for Summer 2019 is as follows:

- Tuesdays at 9 PM Eastern Time with Head TA Matthew McKinzie and your course TA team via Bluejeans. These meetings are focused on projects questions and class lectures and readings. The Sunday before Office Hours look for a Piazza post where you can ask questions to be answered on Tuesday night. So, if you are unable to attend TA Office Hours live, please ask your questions in advance and there will be a recording to watch afterwards. By entering questions in advance and viewing the recording afterwards, students may participate in office hours even if they are not able to attend live.
- Chat Sessions. In addition to TA Office Hours, the class TAs will hold 30 min chat sessions, one to five times per week, to help students with project questions. We will be announcing the schedule of these each week, depending on the TAs availability.

8. Minimum Technical Requirements

Georgia Tech's Office of Student Computer Ownership issues the following Minimum Hardware Requirements to incoming undergraduates. We recommend that you meet or exceed these guidelines to ensure you have sufficient computing power to complete all coursework and projects.

9. Technical Support

For any technical questions, problems or concerns with with Udacity, lecture videos, Piazza, Canvas, or other Georgia Tech IT resources please find email contacts below. The instructor/TAs will not be able to assist you with this.

- For Udacity site support and technical issues with the lecture videos please email gtcn-support@udacity.com
- For OIT (Georgia Tech IT dept.) support, including technical support for Canvas, please email support@oit.gatech.edu
- For technical support with Piazza, please email help@piazza.com
- For technical support with Proctortrack, we recommend the chat feature under “Contact” in the Proctortrack app