

CS 553: **Cloud Computing**

Syllabus

Ioan Raicu
Computer Science Department
Illinois Institute of Technology

CS 553
Cloud Computing
January 14th, 2013

Introductions

- **Professor: Ioan Raicu**

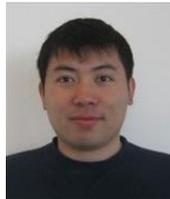
- <http://www.cs.iit.edu/~iraicu/>
- <http://datasys.cs.iit.edu/>



- **Teaching Assistants:**

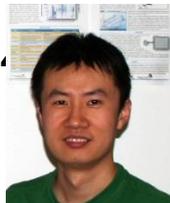
- **Dongfang Zhao (dzhao8@hawk.iit.edu)**

- Office Hours Time: Tuesday/Thursday 2PM-3PM (SB237D)



- **Tonglin Li (tli13@iit.edu)**

- Office Hours Time: Thursday 10AM-11AM, Friday 12:45PM-1:45PM (SB003b)



- **Iman Sadooghi (isadoogh@iit.edu)**

- Office Hours Time: Monday/Tuesday 12:45PM-1:45PM (SB003b)



Course Overview

- This course is a tour through various topics and technologies related to Cloud Computing
- Explore solutions and learn design principles for building large network-based systems, to support compute and data intensive computing across geographically distributed infrastructures
- Discussions often grounded in real Cloud Computing systems:
 - Amazon EC2 and S3, Microsoft Azure, Google AppEngine, Eucalyptus, Nimbus, OpenStack, Google's MapReduce, Yahoo's Hadoop, Microsoft's Dryad, Sphere/Sector, etc

Course Overview (cont)

- Understand methods and approaches to:
 - Design, implement, and evaluate cloud computing systems
- Course involves:
 - Lectures, outside invited speakers, homeworks, programming assignments, and exams
- Prerequisites:
 - Required: CS450 (Operating Systems) or CS455 (Data Communication)
 - Recommended: CS550 (Advanced Operating Systems)
 - Helpful: CS542, CS546, CS551, CS570, and CS595 (Data-Intensive Computing)
- Required texts:
 - Distributed and Cloud Computing: Clusters, Grids, Clouds, and the Future Internet by Kai Hwang, Jack Dongarra & Geoffrey C. Fox⁴

Course Topics

- Distributed System Models
- Parallel Computing
- Virtualization
- Cloud Platform Architectures
 - Amazon AWS
 - Microsoft Azure
 - Google App Engine
 - Google MapReduce / Yahoo Hadoop
 - Eucalyptus, Nimbus, OpenStack
- Service-Oriented Architectures
- Cloud Programming
- Grid Computing
- Peer-to-Peer Computing

Assignments

- Written homeworks
 - 6 assignments
 - Will strengthen the theory behind cloud computing
 - Must be completed individually
- Programming Assignments
 - 4 assignments
 - Will give hand on experience with cloud computing programming
 - Should work in teams of 2

Exams

- 2 Exams, each covering half the course content
- Exams will be individual, but students will be allowed to use their textbooks and any notes they have (on paper)
 - No electronic devices such as phones, eReaders, tables, or laptops will be allowed
 - Simple calculators can be used. Each exam will be worth 18% of the overall grade.
- Schedule:
 - **Wednesday, March 13th, 2013 from 11:25AM - 1:05PM in Life Science 111**
 - **Wednesday, May 1st, 2013 from 11:25AM - 1:05PM in Life Science 111**
 - Please note that they extend for 25 minutes after the usual end of class, but this should not interfere with anyone's other classes due to the lunch period; those taking CS550 as well, the exams for CS550 will start at 1:30PM on 3/13/2013 and 5/1/2013.
- **There will be no makeup exams.**

Late Policy

- Assignments will be due at 11:59PM on the date they are due; there will be a 15 minute grace period
- There will also be a 7-day late pass, where students can submit late assignments without penalty
 - The late pass can be used in 1-day increments spread out over multiple assignments.
 - Any late submissions beyond the grace period and beyond the 7-day late pass, will be penalized 10% every day it is late
- Exams
 - There will not be any makeup exam; do not miss the final exam

Grading

- **Written Homeworks (6): 24%**
- **Programming Assignments (4): 40%**
- **Exams (2): 36%**

Required texts

- We will be using the textbook Distributed and Cloud Computing: Clusters, Grids, Clouds, and the Future Internet by Kai Hwang, Jack Dongarra & Geoffrey C. Fox.

Questions

- Write me: iraicu@cs.iit.edu
- Call me: 1-312-567-5704
- Mailing list
 - cs553-s13@datasys.cs.iit.edu
 - <http://datasys.cs.iit.edu/mailman/listinfo/cs553-s13>
- Office hours:
 - **Monday:** 12:45PM-1:45PM (Sadooghi SB003b)
 - **Tuesday:** 12:45PM-1:45PM (Sadooghi SB003b), 2PM-3PM (Zhao SB019c)
 - **Wednesday:** 12:45PM-1:45PM (Raicu SB237D)
 - **Thursday:** 10AM-11AM (Li SB003b), 2PM-3PM (Zhao SB019c)
 - **Friday:** 12:45PM-1:45PM (Li SB003b)