



CS 553: Cloud Computing

Syllabus

Ioan Raicu
Computer Science Department
Illinois Institute of Technology

CS 553
Cloud Computing
January 9th, 2012

Introductions

- Professor: Ioan Raicu
 - <http://www.cs.iit.edu/~iraicu/>
 - <http://datasys.cs.iit.edu/>
- TA: TBA
- Everyone else
 - Background?
 - What do you want to get out of this course?



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, quizzes, and an exam
- Prerequisites:
 - None required
 - Highly recommended: CS450 (Operating Systems)
 - 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
 - 10 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
 - Must be completed individually

Late Policy

- Assignments will be due at the beginning (11:25AM) of the lecture on the due date; there will be a 5 minute grace period
- Written homeworks
 - 5 min ~ 24 hours late: 25% penalty
 - 1 day ~ 2 days late: 50% penalty
 - 2+ days late: 100% penalty
- Programming Assignments
 - 15% penalty per every day that it is late
 - 6+ days late: 100% penalty
- Quiz
 - There will not be any makeup quizzes; do not miss the quizzes
- Exams
 - There will not be any makeup exam; do not miss the final exam

Grading

- **Written Homeworks (~10): 20%**
- **Programming Assignments (~4): 40%**
- **Quizzes (4): 20%**
- **Exam (1): 20%**

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-s12@datasys.cs.iit.edu
 - <http://datasys.cs.iit.edu/mailman/listinfo/cs553-s12>
- Office hours:
 - Professor: Wednesday, 12:40PM–1:40PM (SB 237D)
 - TA: TBA