SE252 Introduction to Cloud Computing

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Number	SE 252 (3:1)
Semester	Jan, 2015, TTh 2-330PM *... First class on Tue Jan 6, 2015*
Location	SERC 202
Pre-requisites	Data Structures, Programming and Algorithms concepts. Programming experience required. One of the following courses or prior instructor approval: SE 286 *(Data Structures & Prog)*, SE 292 *(HPC)*, SE 295 *(Parallel Prog)*, E0 251 *(Data Structures & Algorithms)*, E0 253 *(Operating Sys)* or E0 264 *(Distributed Computing Sys)*.
Textbook	Topics from "Distributed and Cloud Computing: From Parallel Processing to the Internet of Things", *Kai Hwang, Jack Dongarra and Geoffrey Fox*
Website	www.serc.iisc.ernet.in/~simmhan/SE252

This introductory course on Cloud computing will teach both the ***fundamental concepts*** of how and why Cloud systems works, as well as ***Cloud technologies*** that manifest these concepts, such as from Amazon AWS, Microsoft Azure, and OpenStack. Students will learn distributed systems concepts like virtualization, data parallelism, CAP theorem, and performance analysis at scale. They will also get a practitioners view by learning **"Big Data"** programming patterns such as Map-Reduce (Hadoop), Vertex-centric graphs (Giraph) and Continuous Dataflows (Storm), and NoSQL storage systems to build Cloud applications. Besides a **hands-on project** on Cloud infrastructure, the course will include **research readings** and **guest lectures** from industry.

Students who perform well in this course will be eligible to undertake their final year M.Tech./M.E. **project** in the DREAM:Lab under the instructor's supervision.