

# EE 4395/5390 --- Cloud Computing

## Spring 2015

**Instructor:** Dr. Michael McGarry  
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**Texts:** Copies of the material needed from the following textbooks will be distributed in class:

Cloud Computing: Theory and Practice

by Dan Marinescu

Computer Networking: A Top Down Approach (5<sup>th</sup> Edition)

by James Kurose and Keith Ross

Computer Architecture: A Quantitative Approach (5<sup>th</sup> Edition)

by John Hennessy and David Patterson

Cloud computing research literature (mostly in IEEE and ACM conference proceedings and journals)

**Course Description:** This course introduces students to the cloud computing paradigm and contemporary research problems within cloud computing. A firm understanding of the building blocks of cloud computing will be developed (e.g., virtualization technologies, data center architectures, communication networks). A review of the research literature will be conducted to identify open areas of research (e.g., computation offloading).

**Prerequisite:** Introductory courses in operating systems and computer architecture.

**Class Hours:** Tuesdays and Thursdays 1:30PM to 3PM, TBD

**Office Hours:** Tuesdays 3PM to 4:30PM and Thursdays 10:30AM to 12PM, ENG A-340

### Course Outline:

Week 1: The building blocks of cloud computing: communication networks and data centers

Week 2: Cloud computing service models and vendors

Weeks 2-5: Communication networks

Weeks 6-7: Data centers: SMPs, Clusters, Virtualization technologies

Weeks 8-9: Data centers: Data center communication networks

Week 10-11: Contemporary Cloud Computing Research Problems

Week 12-13: Cloud Resource Allocation

Week 13-15: Computation Offloading

**Grading:**

Quizzes	15%
In-class seminars	20%
Exam 1	20%
Exam 2	20%
Course project	25%

**Academic Dishonesty:**

As an entity of The University of Texas at El Paso, the Department of Electrical and Computer Engineering is committed to the development of its students and to the promotion of personal integrity and self responsibility. The assumption that a student's work is a fair representation of the student's ability to perform forms the basis for departmental and institutional quality. All students within the Department are expected to observe appropriate standards of conduct. Acts of scholastic dishonesty such as cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in the whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts will not be tolerated. Any case involving academic dishonesty will be referred to the Office of the Dean of Students. The Dean will assign a Student Judicial Affairs Coordinator who will investigate the charge and alert the student as to its disposition. Consequences of academic dishonesty may be as severe as dismissal from the University. See the Office of the Dean of Students' homepage (Office of Student Life) at <http://studentaffairs.utep.edu/dos> for more information.

**If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to [cass@utep.edu](mailto:cass@utep.edu), or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at [www.sa.utep.edu/cass](http://www.sa.utep.edu/cass). CASS' Staff are the only individuals who can validate and if need be, authorize accommodations for students with disabilities.**