CSE 6331 Advanced Topics in Database Systems
Department of Computer Science and Engineering
The University of Texas at Arlington

Offering: Spring 2012, Section 001
Time: Tuesday/Thursday 2:00 Pm through 3:20 Pm
Place: Room WH 208 (Woolfe Hall)
Instructor: Shama Chakravarthy, 632 Engineering Research Building (ERB)
Phone: 272-2082, email: sharma@cse.uta.edu,
Course URL: www.wweb.uta.edu/faculty/sharmac
Professional URL: http://itlab.uta.edu/sharma
Office Hours: Tu/Th 3:30pm to 5Pm, and by appointment

Prerequisites: CSE 5331 or consent of instructor

Objective: The objective of this course is to introduce the student who is interested (and have a background) in databases to some of the advanced topics that are currently being used/applied in industry, and researched by academics. This course is very useful for MS and Ph.D. students who are interested in the general area of databases. In this course, a few topics are chosen to go into sufficient detail so that the student can understand the relevance of the techniques from these areas to the overall use of databases and information technology in real-life applications.

Course Outline: This offering of the course will cover the following topics as related to databases and information technology:

- **Mining (graph, association rule, and SQL-based):** Need, techniques for knowledge discovery, approaches, algorithms, and Tools, and application areas

- **Stream and Complex Event Processing (CEP):** pervasive applications, monitoring, principles of stream data processing and its synergy with complex event processing

- **Cloud computing:** map/reduce paradigm, solving data and computation intensive problems (e.g., mining) using the new paradigm

Textbook: As it is very difficult (and almost impossible) to find a single textbook that covers the topics chosen at the level of detail intended for the course, we will not have a textbook for the course.

Instead, I will refer to some reference books for each topic that we cover, and provide references to a number of papers that you will be expected to read. You are expected to read these paper thoroughly, some of which will be presented by you in the class.
**Project:** As the IT Lab has prototypes of event processing, stream processing, and graph mining systems, students will be asked to come up with an interesting project in any one of the topics and develop/implement it over the semester. A non-trivial project is expected which will be demonstrated to the entire class at the end of the semester. Milestones will be established to mark the progress of the project and grading during the semester.

**Grading:** Will be based on 1 Test, 1 class presentation, and a semester project. Each will constitute 1/3 of the grade. This is an initial proposal. The instructor reserves the right to redistribute the percentages if deemed necessary. Students may be asked to make an in-class presentation on the project experiences. Attendance and class participation is important for doing well on the course.

**Academic Honesty:** I strictly adhere to The University of Texas at Arlington rules and guidelines for handling violations of academic dishonesty. Please refer to the pamphlet “CHEATING: Definitions and Consequences” for additional information. You are required to sign and return two ethics statements.

**Policy on cheating:** students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the University. Since dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.

**For projects, all members of the team (where there are multiple members) will receive the same penalty; so make sure you are aware of what your partner is doing!**

**How to Do Well in This Course:** Students who get the most out of this course will be the ones who put in the most effort in a timely manner. If you want to do well, attend all the lectures, read the assigned sections of the book/papers, and start early on your projects. If you are having difficulty, you owe it to yourself to get help. We will be more than happy to help you. Don't be afraid to come and see us. We will hold extensive office hours. If you can't make it to the scheduled office hours but really need help, contact one of us for an appointment. I sincerely want all of you to do well. **It is your responsibility to check the web site at least twice a week for announcements and materials.**

**NOTE 1:** The class schedule, exam, and project due dates are tentative. Test may be scheduled on the day of the final exam or on the last day of class. Project deadlines and exam dates may be changed (with sufficient notice) based on the progress made in the class. The course officially ends on the day of the final exam. No makeup quizzes or exams will be given unless there is a strong documented, justifiable reason.

**NOTE 2:** Once the grade of a quiz/exam/project is distributed, you will have 10 business days to dispute it and get it re-evaluated. No re-evaluation will be entertained after the 10 day period. For projects, what has been designed and implemented by each partner (in the team) should be clearly stated and documented as part of the submitted document.