

SYLLABUS FALL 2012
CSCI532 – Algorithm Design
SECTION: 532.001, Room: JOUR 104
Day and Time: Mon 1:30PM-4:10PM; Meets 8/27/2012 through 12/14/2012

Instructor: Dr. Abdullah N. Arslan
Office Hours: WRF 11:30am-2:30pm at JOUR 206

Office: JOUR206
E-mail:Abdullah_Arslan@tamu-commerce.edu
Office Phone: 903 468 3097

Additional by appointment
Please when you e-mail include 532 in the subject of your message

COURSE DESCRIPTION

Recommended Text: "Introduction to Algorithms", second edition by Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein, Second Edition, Mc Graw-Hill

Pre-requisite: CSCI520

Course Content: Chapters: 1, 2, 3, 4, 5, 12, 15 (.1, .2, .4), 16.1, 16.2, 24.3.
If time permits some additional selected topics may also be covered.

Main Objective: To teach students how to analyze practical problems in order to identify and develop best algorithms (in terms of time complexity and memory usage) for their solutions.

STUDENT LEARNING OUTCOMES (SLO)

- 1) To teach students how to analyze algorithms in order to determine their calculation complexity in the terms of Big Oh, Big theta and Omega. Recursions.
- 2) To teach sorting algorithms (such as mergesort and quicksort) and their applications.
- 3) Probabilistic Analysis and Randomized algorithms for sample problems from the following list (not limited to, and not necessarily including all): CS- Hiring, Longest Streaks, Bins and Balls problem, the Birthday paradox, and randomized quicksort.
- 4) Binary search trees and optimal binary search trees, and their applications.
- 5) Dynamic programming algorithms for problems such as line scheduling, matrix chain multiplication, longest common subsequence, and their practical applications.
- 6) Greedy algorithms for problems such as the activity selection problem and its application to resource planning.
- 7) If time permits, Graph Algorithms such as Minimum Spanning Tree algorithms and Dijkstra's shortest path algorithm.

Some additional topics may be covered if time permits.

Quizzes, and tests will include questions on each of the student learning outcome listed above.

COURSE EVALUATION

Basis for Evaluation:

Two midterm exams	45%
Quizzes	25%
Comprehensive final test	30%

Grading Policy: **A:** 100% - 90%

B: 89% - 80%

C: 79% - 70%

D: 69% - 60%

F: Less than 59 %

The professor reserves the rights to reward students for continuous hard work or for an exceptional novel scientific work (as judged by the instructor) relevant to the topics covered.

CHEATING WILL NOT BE TOLERATED

COURSE POLICIES

Quizzes: are to be solved independently during the class period. The quizzes will be administered in class.

Makeup quizzes will not be given. However, the lowest quiz grade will be dropped. Any class material missed by the student is the student's responsibility to acquire.

Tests: The two in-class tests will be given roughly at regular intervals. Students will be informed of the test dates around a week in advance. The test will take one class period and will be given at the scheduled times only. No opportunity will be given to take the test at earlier or later times except in extreme cases as judged by the instructor.

Makeup: Except extreme cases (as judged by the instructor), no individual makeup test will be permitted.

Attendance:

"Students are expected to be present for all class meetings of any course for which they are enrolled. Per University Procedure A13.02, effective September 1, 1996, students are responsible for learning about and complying with the attendance policy stated in the catalog, Student's Guidebook, and/or faculty syllabus. It is the prerogative of the faculty to drop students from courses in which they have accrued excessive absences as defined in the course syllabus." **Student Handbook**

After a students' third absence, the professor will drop the student from the course. If this is not possible then the final grade for the course will become an automatic F. Lateness and leaving class early may count as an absence and are not acceptable unless you are ill or a family emergency exists. If you miss a class, it is your responsibility to obtain notes from a fellow student. Office hours are not meant for individual lectures. Any class material missed by the student is the student's responsibility to acquire.

Academic Dishonesty:

Academic integrity is the pursuit of scholarly activity free from fraud and deception and is an educational objective of this institution. Academic dishonesty includes, but is not limited to, **cheating, plagiarizing**, fabricating of information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. If you are caught in an academic dishonesty situation on **any** course work, you will be given a grade of F for the course and referred to the Dean of Students for further disciplinary action.

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See **Student's Guide Handbook, Policies and Procedures, Conduct**).

Withdrawal Policy:

There are deadlines for withdrawing from this course. It is the student's responsibility to follow these deadlines.

Students with Disabilities: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact: **Office of Student Disability Resources and Services; Texas A&M University-Commerce; Halladay Student Services Building; Room 303 A/D; Phone (903) 886-5150 or (903) 886-5835; Fax (903) 468-8148**
StudentDisabilityServices@tamu-commerce.edu

The professor may make supplementary information for the course available online. These include class notes, assignments, PowerPoint slides, class announcements, the course syllabus, test dates, etc. The professor will announce in class when such information becomes available online. It is the student's responsibility to follow these announcements.

We will finalize this course syllabus in the first few lectures. There may be slight changes.