

Department of Computer Science and Engineering
CS 502: Analysis of Algorithms
Spring 2003

Instructor: **Prof. Mostafa Aref**, Room No: Tech Building 140, Phone: 576-4760
Email: aref@bridgeport.edu www.bridgeport.edu/~aref/

Text Book: " Data Structures, Algorithms And Applications In Java " by Sartaj Sahni,
McGraw Hill Inc. 2000. ISBN: 0-07-109217-X

Reference: "Introduction To Algorithms", by T. Cormen, C. Leiserson, and R. Rivest,
(2nd edition), McGraw Hill Inc. 2002; ISBN: 0-07-109217-X.

Course Description:

The course is an advanced class with a focus on data structures and algorithm design and analysis. Many important algorithms will be studied and implemented. Performance and correctness considerations of algorithms will be studied. The student is expected to be proficient in programming in the C++ language and familiar with OO design.

Grading Policy:

| Activity | Weight |
|----------------------------|--------|
| Quizzes | 30% |
| Programming Assignments | 30% |
| Exam 1 (Tuesday, March 4) | 20% |
| Exam 2 (Tuesday, April 22) | 20% |

Material to be covered:

- Analysis of Algorithms
- Big Oh, Theta, and Omega notations
- Performance Measurement
- Linear Lists
- Differences between Java & C++
- Stacks & Queues
- Hashing Function
- Trees and Binary Trees
- Binary Search Trees
- Balanced Search Trees
- Graphs
- The Greedy Method
- Divide and Conquer
- Backtracking
- Branch and Bound