

JAN. 18 2001

**GRANDE PRAIRIE REGIONAL COLLEGE**  
DEPARTMENT OF COMPUTING, MATHEMATICS and STATISTICAL  
Sciences

**Computing Science 2040**

WINTER SEMESTER 2001

**Title** : Algorithms I

**Schedule** : **Lecture** A3 W 10:00 - 11:20 in J203  
F 13:00 - 14:20 in J203  
**LAB** L1 M 10:00 - 10:50 in J101

**Instructor** : LakshmaREDDY Ganta  
**Office** : J220  
**Phone** : 539 2850

**Consultations** : TBA

**Calendar Description of the Course:**

3(3-0-1) UT. The first course of a two course sequence on algorithm design and analysis stream, with the emphasis on the fundamentals such as searching, sorting and graph algorithms. Examples include: divide and conquer, dynamic programming, greedy methods, backtracking, and local search methods. Analysis techniques will be developed to aid in judging program efficiency.

**Prerequisite:** CMUT 1150, 2720 and MA 1130 or equivalent

This course is designed to provide an introduction to the scientific side of computing science and to provide students with the opportunity to learn the basic tools needed to develop efficient algorithms. Topics to be covered include: Algorithms Analysis-running times, Big-O, Big- $\Omega$ , Big -  $\Theta$ , recursion, induction; Algorithm design techniques- divide and conquer, greedy algorithms, dynamic programming; Graph algorithms and data structures; Limits of computation-intractability, P and NP

**Text:** Computer Algorithms Introduction to Design & Analysis (Third Edition) by Sara Baase and Allen Van Gelder

**Marking:**

Assignments	: 30 %
Term test 1	: 20 %
Term test 2	: 25 %
Final	: 35 %

**Special Notes:**

- 1) No late assignments will be accepted. The student is responsible for adhering to all requirements as specified for each assignment.
- 2) When necessary, lab time will be utilised for lecturing on specific topic.