Rasiah (Raja) Loganantharaj
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Research	Publications	Teaching	Home	Professional Activities

Syllabus

Reading Materials

Office Hours

Homework

Projects

Announcements

Tutorials

Design and Analysis of Algorithm (CSCE 500)
Spring 2014

Time and Place 11-12:15 PM on Tuesday and Thursday in OLVR 116

Instructor Dr. Rasiah (Raja) Loganantharaj
The Center for Advanced Computer StudiesContact: 482-5345 Voice and logan AT cacs.louisiana.edu (e-mail)

Teaching Assistant Yanyan Han
OLVR 358

Prerequisites

Strong background in data structure and CMPS 341 or equivalent

Outline The objectives of this course include

- To teach the student the ability to understand research papers which include significant analysis of algorithms.
- To develop the skill in analyzing running time of most algorithms and
- To get familiar with several algorithm design techniques

The topics covered include

Review of Basics	
Divide and Conquer	Ch 7 (Ref 1)
Sorting algorithms	Ch 6,7 and 8
Dynamic programming	Ch 15, Ch 8 (Ref 1)
Greedy algorithms	Ch 16, Ch 6 (Ref 1)
Amortized analysis	Ch 17
B-trees	Ch 18
Binomial heaps	Ch 19
Fibonacci heaps	Ch 20
Union-find	Ch 21
Strongly connected components	Ch 22, Sec 5
Shortest paths	Chs 24-25
Max flow	Ch 26
NP-completeness	Ch 34
Approximation algorithms	Ch 35

Text book and reading materials Introduction to AlgorithmsThird Edition by T. H. Cormen, Charles E. Leiserson, R. L. Rivest and C. Stein MIT Press 2009.

Reference Books 1. Fundamental of Algorithms by G. Brassard and P. Bratley

2. Introduction to Design and analysis of Algorithm, by D. R. Stinson, 2 nd edition.

Evaluation It is based on homework, quizzes mid term, final and a semester project. midterm 30%, Final 35%, homework 20%, project 10%, quizzes 5% and class participation 0 to -5%. Grades: A >85, B >75%, C>65%, D>55% and F is for the rest.

Cheating of any form will not be tolerated and the violators will be punished according to the rules set forth by the University of Louisiana.