Department of Computer Science and Engineering
National Institute of Technology
Calicut - 673 601, Kerala, India
Tel:0495-2286801

Tentative Course Details - Monsoon 2012
(July 2012 - Dec. 2012)

Course:

Title   : CS 4050 Design and Analysis of Algorithms
Class Timings : ELHC 402/ELHC 403, C Slot
Faculty   : Priya Chandran, K. Murali Krishnan {priya,kmurali}@nitc.ac.in
Website   : http://www.athena.nitc.ac.in/~kmurali/Courses/AlgJuly2012/index.html

Course Objective:

To study the fundamental techniques in the design and analysis of computer algorithms.

Course Contents

- **Asymptotic Analysis of algorithms** : Recurrence, Probabilistic and Amortized techniques.

- **Algorithm Design**: Divide and Conquer, Dynamic Programming, Greedy, Linear programming.

- **Advanced Data Structures**: Advanced heap and tree structures, hashing.

- **Complexity and Approximation**: NP-completeness, Introduction to approximation algorithms.

References:

- T. H. Cormen, C. E. Leiserson, R. L. Rivest, C. Stein, *Introduction to Algorithms*, McGraw Hill, 2009.

- S. Dasgupta, C. Papadimitriou, U. Vazirani, *Algorithms*, McGraw Hill, 2006.

- D. C. Kozen, *The Design and Analysis of Algorithms*, Springer, 1991.

- V. V. Vazirani, *Approximation Algorithms*, Springer, 2001.

Evaluation:

- Mid Term Test I : 30

- Mid Term Test II: 30

- Final Exam : 40

Grading will be relative. Assignments shall be posted in the course website. The students are expected to be conversant with the solutions of the assignment problems in order to be able to attempt examination questions.

Standard of Conduct:

- Any academic dishonesty will result in zero marks in the corresponding exam and will be reported to the department council for record keeping and for permission to assign F grade in the course.