Department of Computer Science and Engineering
National Institute of Technology

Calicut - 673 601, Kerala, India
Tel:0495-2286801

Tentative Course Details - Winter Semester 2012 (Dec. 2012 - April 2013)

Course:

Title : CS 2006 Discrete Structures (S4 CSE)
Class Timings : CSE 203(A Batch) /401 (B Batch), Mon: 08:00 AM, Wed 09:00 AM. - Fri: 10.15 AM

Instructor:

Faculty : Sudeep K. S., & K. Murali Krishnan
Telephone : 0495-22868(11)/(05). Email : {sudeep,kmurali}@nitc.ac.in

Course Objective:

The objective of the course is to build the mathematical foundations for undergraduate Computing curriculum.
Contents:
Combinatorics: Asymptotic analysis of recurrence - solution to linear recurrence relations - Master's theorem, Recurrence relations with full history. **Probability:** Discrete probability spaces, random variables - Bernoulli, binomial and geometric random variables - conditional probability - Bayes theorem - linearity of expectations - Markov and Chebyshev inequalities - weak law of large numbers **Algebra:** Groups, Lagrange's theorem, Homomorphism theorem, Rings and Fields, Structure of the ring Zn and the unit group Zn*. **Logic and Set Theory :** Resolution in propositional logic - introduction to first order logic - set theory - countable and uncountable sets - digonalization.
References:

- R. P. Grimaldi, Discrete and Combinatorial Mathematics: An applied introduction, Addison Wesley, 1998.
- L. Lovasz, J. Pelikan, K. Vesziergombi, Discrete Mathematics, Springer, 2003

Evaluation:

- Mid Term Test I : 25
- Mid Term Test II: 25
- Final Exam : 40
- Assignments : 10

Standard of Conduct:

- Any academic dishonesty will be reported to the department council for permission to assign F grade in the course.