**CSE421: Design and Analysis of Algorithms**

Syllabus

*Lecturer: Anup Rao*

There will be a midterm (worth 25%), a final (worth 35%) and weekly homework (40%).

# 1 Tentative Course Schedule

**Week 1-2** Introductions, asymptotics, some basic algorithms. Graphs, trees, connectivity, testing bipartiteness.

**Week 3-4:** Greedy algorithms for Interval Scheduling, Minimum Spanning Tree, Set Cover, Vertex Cover

**Week 5-6:** Divide and Conquer algorithms for Sorting, Selection, Fast Fourier Transform. Midterm.

**Week 7:** Dynamic Programming. Algorithms for Edit Distance, Longest Path, Knapsack.

**Week 8:** Flows and Cuts. Algorithms for Matching, Graph Partitioning.

**Week 9-10:** Linear Programming, Randomized algorithms, NP-completeness.