SHP: Introduction to Algorithms
Lecture 0: Syllabus / Introduction

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Acknowledgements

Essentially all the material in this course is taken from Introduction to Algorithms, 3rd Edition (MIT Press) by Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein.

1 Instructors

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2 Overview

This course motivates algorithmic thinking. The key learning objectives are the notions of run-time analysis of algorithms, computational complexity, algorithmic-paradigms and data structures. Content will primarily be based on high-school algebra and calculus. A tentative list of topics along with the course schedule is presented in Table 1. We will also be circulating brief notes for each lecture. However, we will be covering significantly more material in the lectures and therefore the notes will be for recapitulation purposes only. We would also show actual implementation of various algorithms in class so that students can get a better idea and good intuition for them.

Date	Topic	Instructor
Sep 22	Run-time Analysis and Big-O Notation	KG
Sep 29	Recursion and Divide & Conquer	KG
Oct 6	Sorting-I	KG
Oct 13	Sorting-II	KG
Oct 20	Selection / Searching	RS
Oct 27	Elementary Data Structures	RS
Nov 3	Hashing	RS
Nov 10	Greedy Algorithms	RS
Nov 17	Dynamic Programming (DP)	RS
Nov 24	No Class	-
Dec 1	Graph Algorithms-I	KG
Dec 8	Graph Algorithms-II	KG
Dec 15	P-NP / Approximation Algorithms	RS

Table 1: Tentative Schedule