

Global Learning Initiatives Program Course Syllabus

Course Information

Course Name	Introduction to Data Structure
Lecturer(s)	HON WING KAI
Course Description	<p>This course introduces some classical and smart methods to store the data so that we can answer questions about the data efficiently. As an example, let us imagine that we have the exam scores of all students, and from time to time different student would ask how many other students get a higher score than him/her. In order to speed up the query, one may store the scores in sorted order rather than in a random order.</p> <p>Our focus will be on both the theoretical performance and the practical implementation of the data structures.</p>
Course Objectives	<ul style="list-style-type: none"> • To have the ability to discover problems, define them, and design computer programs to solve problems. • To have fundamental knowledge of computer science, mathematics, and science.
Suggested Proficiencies (if any) *list preferred knowledge or skills students should have before taking the course.	
Reading List (if any)	<p>Text Book:</p> <ol style="list-style-type: none"> 1. Introduction to Algorithms, 3rd edition, MIT Press, by T. Cormen, C. E. Leiserson, and R. L. Rivest <p>References:</p> <ol style="list-style-type: none"> 1. Algorithms in C++, (or Algorithms in Java), by R. Sedgewick 2. The Art of Computer Programming, by D. E. Knuth 3. Fundamentals of Data Structures in C++, by E. Horowitz, S. Sahni, and D. Mehta

Grading Criteria	(Teaching Method) Home Study + Classroom Discussion + Online Discussion (Evaluation) Total 100% 3 Assignments (Written + Programming) 40% 3 Exams (Programming) 60%
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Course Schedule

Class	Date (YYYY/MM/DD)	Course Topic	Lecturer
1		Growth of Functions	HON WING KAI
2		Arrays	HON WING KAI
3		Heaps	HON WING KAI
4		Sorting	HON WING KAI
5		Lists, Stacks, and Queues	HON WING KAI
6		Trees and Graphs	HON WING KAI
7		Searching Set Data	HON WING KAI
8		Hashing	HON WING KAI