This is the second course in computer science in the area of algorithms and data structures.

Objective:

- To study the algorithms and data structures that underpin much of today's computer programming, and
- To implement the algorithms through programs in C++.

Pre-requisites: CSCI 201, MATH 221
Co-requisite: MATH 273

Instructor: Pranava K. Jha

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<th>Office</th>
<th>Phone</th>
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<tr>
<td>ECC-245</td>
<td>320-308-3073</td>
<td><a href="mailto:pkjha@stcloudstate.edu">pkjha@stcloudstate.edu</a></td>
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Office Hours:

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Also by appointment, or when the office door is open.

Teaching Assistant: ?

Text:


Secondary text:


References:


**Syllabus:**

- Principles of programming* (Chapter 1)
- Recursion (Chapter 2)
- Abstract data types* (Chapter 3)
- Linked lists* (Chapter 4)
- More recursion (Chapter 5)
- Stacks* (Chapter 6)
- Queues* (Chapter 7)
- Templates and operator overloading (Chapter 8)
- Efficiency of algorithms* (Chapter 9) and fast sorting algorithms (Chapter 9)
- Binary trees (Chapter 10)
- Tables and priority queues, and heap sort (Chapter 11)
- Balanced trees and hashing (Chapter 12)
- Graphs representations and graph algorithms (Chapter 13)

Topics marked with an asterisk are expected to have been introduced earlier during the first course, i.e., CSCI 201 or its equivalent.

Treatment in class will approximately be in the same order in which the topics are presented in the text.

**Course home page:** [http://web.stcloudstate.edu/pkjha/CSCI301](http://web.stcloudstate.edu/pkjha/CSCI301)

**Evaluation:**

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**Final exam date:** May 3, 2010 (Monday) from 7:30 am to 10:00 am.