CET 3350 – Applied Data Structures

- Fall 2010 -

Instructor
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Textbook
ADTs, Data Structures, and Problem Solving with C++ (2nd Edition) (Hardcover)
by Larry R. Nyhoff
Publisher: Prentice Hall; 2 edition (August 5, 2004)
ISBN-10: 0131409093

Book URL: http://www.pearsonhighered.com/educator/academic/product/0,3110,0131409093,00.html

Class Time & Place
T R 05:30PM - 06:50PM
Fleming Hall 404 - Boca
Multi-purpose Building 115 - PSL

Office Hours
Time TBA
Boca Raton SE480, tel: 561-297-3401

Course Description
This class teaches the basics of the C++ programming and covers fundamental data structures, object-oriented techniques, generic programming, and problem solving. Students will understand how to use the C++ template classes (strings, containers, abstract data types) and template algorithms from the Standard Template Library (STL). Students will learn how to design their own data structures (queues, stacks, trees), to develop algorithms, and to analyze their performance. Students are advised to bring their notebook computer as they will edit, build, and test programs in class. The computer should have installed a C++ compiler with a development environment.

C++ Compilers and Development Environments
- Free: on Linux (e.g. http://ubuntu.com) and Windows (with Cygwin Unix environment http://cygwin.com) Gnu C++, GDB (the GNU debugger), and the Emacs editor (or Xemacs, http://www.xemacs.org)
Course Objectives
1. develop understanding of the C++ programming language
2. learn the concepts of object oriented programming
3. understand and be able to design data structures
4. develop algorithms in C++ and analyze their performance
5. understand the methodology of generic programing with C++

Course Topics
Abstract Data Types (textbook, ch 2)
Review and understand C++ (notes)
Static arrays, dynamic arrays, and vectors (ch 3)
Classes, methods, constructors and destructors (ch 4)
Class String (ch 5)
Class List (ch 6)
Stacks (ch 7)
Queues (ch 8)
Templates (ch 9)
Recursion and Analysis of Algorithms (ch 10)
Binary Trees and Hashing (ch 12)

Blackboard:
All course material will be posted on Blackboard
http://blackboard.fau.edu

Grading Policy
One quiz at the beginning of almost each class. One homework per week.
- Quizzes: 30% (9 best scores out of 10)
- Homeworks: 70% (8 best scores out of 9)

The final grade will depend on how well the student performs relative to the rest of the class.

Assignment Submission
Homeworks are due on the date specified on Blackboard and must be submitted on Blackboard's Digital Dropbox. No assignments will be accepted after the due date.

Policy for Plagiarism
Students are required to work individually on all assignments and are expected to submit their original work. Please go to your instructor if you have any questions related to the course. Any occurrences of plagiarism will be handled according to F.A.U. policies.