CSC-K216 Intermediate C++ Programming

Three Rivers Community College

Syllabus

Spring 2011

Course Information:

- Title: CSC-K216 Intermediate C++ Programming
- Class Meeting Times: Lecture: R 5:20 – 8:05 pm, Lab: 8:05 – 9:50 PM
- Location: Lecture: D124, Lab: E119

Instructor Information:

- Instructor: Joe Johnson
- Telephone: 860-823-2818 (Office), 860-805-3670 (Cell)
- Email: jjohnson@trcc.commnet.edu
- Office hours: Tuesday: 1:00 – 4:00
- Office Location: 205W

Learning Outcomes:

- After successful completion of this course, the student should have an understanding of the following: object-oriented principles including classes, objects, polymorphism, inheritance, and encapsulation, and the ways in which these principles are implemented in the C++ programming language. The student should also have an understanding of memory structures including the stack and the heap, memory management, and the C++ syntax for conducting memory management, specifically, using pointers. Finally, the student should also have an introductory understanding of data structures (arrays, linked lists, trees, and hash tables), their associated algorithms for searching, inserting, and deleting, and the relative performance of these algorithms.

Texts:

- Tony Gaddis, Starting Out with C++: From Control Structures Through Objects (7th Edition), Addison Wesley, ISBN 132576252 (Required)

Course Requirements:

- Regular programming assignments will be the focus of this course (weekly or biweekly, depending on the topic) (50%)
    - It is extremely important you stay current with the material as it is cumulative – it builds on itself. Homework MUST be handed in ON TIME AT THE BEGINNING OF CLASS (not after the lab of the due date). No late homework will be accepted.
    - Depending on the difficulty level of the assignment, we will review the solutions to the problems in class after they're due.
- Midterm Exam (20%) - online via Blackboard Vista
- Final Exam (Cumulative) (20%) - online via Blackboard Vista
- Participation in classroom/online discussions (10%)

Pre-requisites

- CSC-K108 - Intro to Programming with C++

Schedule

Week	Date	Topic	Reading Assignment	Programming Assignment
1	01/19	Review of Fundamentals	Gaddis Ch. 1 – 6	Assignment 1 (Hello World)
2	01/26	Arrays	Gaddis Ch. 7, 8	Assignment 2 (Search & Sort)
3	02/02	Pointers	Gaddis Ch. 9	Assignment 3 (Array Expander)
4	02/09	Characters, c-Strings, and the string Class	Gaddis Ch. 10, (Savitch Ch. 9)	Assignment 4 (NER)
5	02/16	Structured Data – structs,	Gaddis Ch.	Assignment 5

		enums	11	(Student Struct)
6	02/23	Classes – Part 1: Introduction	Gaddis Ch. 13, (Savitch Ch. 6)	Assignment 6 (Employee Class)
7	03/01	Classes – Part 2: Constructors and Other Tools	Gaddis Ch. 14, (Savitch Ch. 7)	Assignment 7 (Student Class)
8	03/08	Operator Overloading, Friends and References	(Savitch Ch. 8)	Assignment 8 (Rational Class)
	03/15	Inheritance, Separate Compilation Units	Gaddis Ch. 15, (Savitch Ch. 11, 14)	Midterm Exam
9	03/22	**********SPRING BREAK**********		
10	03/29	Polymorphism, Virtual Functions	Gaddis Ch. 15, (Savitch Ch. 15)	Assignment 9 (Figures)
11	04/05	Algorithms and Data Structures		Assignment 10 (Online)
12	04/12	Sudoku Project - Part 1: Game State Data Structure		Assignment 11 (Game State Class)
13	04/19	Sudoku Project - Part 2: AI Search: BFS		Assignment 12 (Sudoku BFS)
14	04/26	Sudoku Project - Part 3: AI Search: DFS		Assignment 13 (Sudoku DFS)
15	05/03	Sudoku Project – Part 4: Conclusion		Final Exam
16	05/10	Make-up		

Academic Integrity

- Three Rivers' catalog defines various forms of academic dishonesty and procedures for responding to them. All forms are violations of the trust between

students and teachers. Students should familiarize themselves with the penalties for plagiarism and other forms of cheating.