

**LEMOYNE-OWEN COLLEGE**  
**DIVISION OF NATURAL AND MATHEMATICAL SCIENCES**

Syllabus for COSI 330 A  
*Data Structures*  
Fall Semester, 2010

**Pre-requisites:** COSI 216.

**Class Meeting:** TTh 11:00 a.m. to 12:15 p.m., GOH 114

**Instructor:**

<i>Name:</i>	Valerie Chu, Ph.D.
<i>Office:</i>	GOH 400 D
<i>Phone:</i>	435-1378
<i>Office Hours:</i>	MWF 11:00 a.m. to 2:00 p.m. TTh 9:30 to 10:30 a.m.; 12:30 to 1:30 p.m.
<i>Email:</i>	valerie_chu@loc.edu, extrapo66@yahoo.com
<i>URL:</i>	<a href="http://biobio.loc.edu/chu/web/">http://biobio.loc.edu/chu/web/</a>

**Course Description:**

An introduction to data structures including lists, stack, queues, trees, graphs, etc. Searching, sorting, merging, information storage and retrieval are also covered.

**Text:** Michael Main and Walter Savitch, *Data Structures and Other Objects Using C++*, Fourth Edition. Addison Wesley, 2011, ISBN-13: 978-0-13-212948-0.

**Competencies:**

- **Critical Thinking:** Think creatively, critically, logically, and analytically using both quantitative and qualitative methods for solving problems.
- **Major Course of Study:** Appreciate, understand and know and pursue the principles, method and subject matter which underlie the major discipline.
- **Scientific and Technological Literacy:** Maintain literacy for the understanding of impact of science and technology on individuals, society and the environment.

**Major Area Competencies:**

- To demonstrate an ability to think creatively, critically, logically, and analytically using both quantitative and qualitative methods for solving problems
- To demonstrate reasoning, work independently, address problems, and communicate solutions clearly and effectively using technology for research and communications
- To be able to control a computer through the process of programming, this includes defining the problem, planning the solution, coding the program, and testing the program.

**Objectives:**

- To develop a disciplined approach to problem solving methods and algorithm development.
- To give the concepts of data abstraction and abstract data types.
- To teach the basic data structures used in computer science.
- To teach the concepts of object oriented programming.
- To provide a foundation for further studies in Computer Science.

**Instructional Strategies:**

Students will engage in learning activities, which will include assigned readings, class presentation, and computer laboratory work. All announcements will be posted in the web site, <http://sankofa.loc.edu/chu/web/>.

**Course Requirements and Evaluation Procedures:**

Several quizzes, two mid-term tests and a final comprehensive examination will be given. There are **no make-up tests** except for a valid document from a doctor; however, a note from home is not acceptable.

Programming or written assignments will be assigned frequently. It has to be sent through the e-mail by the deadline (noon of the due day). **Late assignments will receive the following penalties:** 1 day late, minus 10 points; 2 days late, minus 20 points; 3 days late, minus 30 points; ...and so on until zero credit. Students are responsible to check a return e-mail for assignment credits. If a student has turned in assignments and there is no response from the instructor, the student has to contact the instructor directly; otherwise, the student would get a zero credit for the assignment. **Duplication of programming or written assignments will not be permitted. Duplicated programming assignments as well as the original will be assigned a grade of "F".**

The score of the final examination can be used to replace the lowest score of the mid-term examinations.

The course grade will be calculated on the following distribution:		Grades will be recorded in numerical form until the final averages are determined at the end of the semester.	
Homework	20%	<i>Grading Scale</i> will be	
Quizzes	20%	90 to 100	A,
Mid-term Tests	40% (20% for each)	80 to 89	B,
Final Exam	20%	70 to 79	C,
		60 to 69	D,
		others	F.

**Attendance Policy:**

If as many as **4 classes** are missed without excuse, the course grade will be reduced by one letter. If as many as **6 classes** are missed without excuse, the student will fail the course. An absence from class will be excused only if a written doctor's excuse or a written statement concerning a death in the family is supplied. Coaches or other faculty for legitimate events provides other valid excuses.

**Four classes tardy** will be counted as one missing class.

**Course Outline:**

<b><i>Weeks</i></b>	<b><i>Chapters</i></b>	<b><i>Topics</i></b>
1	1	The Phases of Software Development
2	2	Abstract Data Types and C++ Classes
3	3	Container Classes
4-5	4	Pointers and Dynamic Arrays
6	<b>Review and Test I</b>	
7-8	5	Linked Lists
9	6	Software Development with Templates, Iterators, and the STL
10	7	Stacks
11	8	Queues
12	9	Recursive Thinking
13	10	Trees
14	<b>Review and Test II</b>	
15	<b>Final Comprehensive Exam</b>	

**Policies Related To Students With Disabilities:**

The facility of Gibson-Orgill hall is equipped an entrance ramp and elevator to accommodate students with physical disabilities. Special arrangements can be made for students with other disabilities or impairments (i.e., deaf, mute, etc.)

If you need course adaptations or accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please make an appointment with Jean Saulsberry, Director of Student Development as soon as possible (901) 942-6205. The Student Development Office is located in the Alma C. Hanson Student Center, room 208.