

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

Syllabus for COSI 350 A  
*Programming Languages*  
Spring Semester, 2011

**Pre-requisites:** COSI 330.

**Text:** Robert W. Sebesta., *Concepts of Programming Languages*, Ninth Edition.  
Addison-Wesley, 2010, ISBN-13: 9780136073475

**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>	MW 11:00 a.m. to 2:00 p.m. TTh 9:30 to 11:00 a.m.; 12:30 to 2:00 p.m.
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**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 control a computer through the process of programming which will include defining the problem, planning the solution, coding the program, and testing the program.

**Course Description:**

Formal definition of programming language including specification of syntax and semantics. The course compares the features, syntax, and applicability of various computer languages. Topics include data types, data structures, control structures, procedures, recursion, list processing, and programming styles.

**Objectives:**

1. To develop a view of programming languages as not only means to solve problems but subjects of analysis and design.
2. To investigate the *functional*, *logic*, and *object* paradigms and languages as alternatives to the *imperative* ones.
3. To investigate *lexical* and *syntax analysis* and be able to *write a recursive descent parser* for a set of simple grammar. This will prepare students for the study of *compiler design*.
4. To understand the difference between the *syntax* and *semantics* of contemporary programming languages.
5. To investigate three levels of *control structures* which are *within expressions*, *among statements*, and *among program units* in various language designs and implementations.
6. To distinguish the *scope* and *lifetime* of a variable.
7. To understand *parameter passing methods* and be able to apply different principles to a new programming language in future.
8. To view three fundamental features of an *object oriented programming* in detail.

**Course Outline:**

<u>Weeks</u>	<u>Chapters</u>	<u>Topics</u>
1	1	Preliminaries
2	2	Evolution of the Major Programming Languages
3	3	Describing Syntax and Semantics
4	4	Lexical and Syntax Analysis
5	5	Names, Binding, Type Checking, and Scopes
6	6	Data Types
7	7	Expressions and the Assignment Statements
8		<b>Review and Test I</b>
9	8	Statement-Level Control Structures
10	9	Subprograms
11	10	Implementing Subprograms
12	11	Abstract Data Types and Encapsulation Constructs
13	12	Support for Object-Oriented Programming
14		<b>Review and Test II</b>
		<b>Review for Final Comprehensive Exam</b>
15		<b>Final Comprehensive Exam</b>

**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://biobio.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.

**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.