Mississippi Valley State University
Mathematics, Computer & Information Sciences
Itta Bena, Mississippi 38941

Course Syllabus

Course Number:	CS 204	**Meeting Times:**	TR 9:25 AM – 10:40 AM
Course Title:	Computer Prog. II	**Credit Hours:**	3 Semester Hours
Course Instructor:	Timothy Holston	**Course Coordinator:**	Timothy Holston
Email:	thost@mvsu.edu	**Website:**	http://bluebird.mvsu.edu/~tholston/
Office Hours:	**MW** 1:00 PM – 2:00 PM *&* **TR** 1:00 PM – 5:00 PM		

Catalog Description: This course will further develop and expand upon the topics introduced in CS203. Advanced object-oriented programming techniques will be covered. This course will also introduce topics in pointers, arrays, file processing, sorting and search algorithms and string manipulation. All programs will be implemented on the UNIX operating system. **Course Prerequisites:** CS 203

Textbook(s) and other Required Materials:
T. Gaddis, J. Walters, and G. Muganda, Starting Out with C++: Early Objects, 7th ed., Addison-Wesley, Boston, Massachusetts, 2011.

Program Outcomes:
Student will be able to:

1.1 An ability to use current techniques, skills, and tools necessary for computing practice.
1.2 An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
1.3 An ability to apply design and development principles in the construction of software systems of varying complexity.
2.1 An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline.
2.2 An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
2.3 An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.

Course Outcomes:
Students will be able to:

1. Write programs that use data structures such as arrays, records and strings.
2. Compare and contrast the costs and benefits of dynamic and static data structure implementations.
3. Choose an appropriate data structure for modeling a given problem.
4. Analyze functions/loops using Big-O notation.

5. Use object oriented programming to create classes that inherit attributes from other classes.
6. Compare and contrast sorting mechanisms in determining which is best in a solution to a given problem.
7. Compare and contrast searching mechanisms in determining which is best in modeling a specific problem.
8. Perform string processing using functions of the *string* class.

Course Outcomes Mapped to Program Outcomes											
Course Title											
Course Outcomes	P0 1.1	PO 1.2	PO 1.3	PO 2.1	PO 2.2	PO 2.3	PO 3.1	PO 3.2	PO 3.3	PO 3.4	PO 3.5
1	X	X	X	X	X	X					
2	X	X	X	X	X	X					
3	X	X	X	X	X	X					
4	X	X	X	X	X	X					
5	X	X	X	X	X	X					
6	X	X	X	X	X	X					
7	X	X	X	X	X	X					
8	X	X	X	X	X	X					

Prerequisite by Topic: Looping, Control Structures, Functions, Object-Oriented Programming

Major Topics Covered in Course:

Array Implementations	3 wks
Bubble sort, Selection sort	2 wks
Searching Algorithms	1 wk
Pointers	3 wks
String Manipulation	2 wks
Analysis of Algorithms	2 wks
Advanced File and I/O Operations	2 wks

Laboratory Projects:

Array Implementations
Sorting Algorithms
Searching Algorithms
Pointers
Advanced File and I/O operations

Estimated CSAB Category Content		
	Core	**Advanced**
Data Structures	1.5	
Algorithms	1	
Computer Organization & Architecture		
Concepts of Programming Languages		
Software Design	0.5	

Oral and Written Communications: Student will be required to write 1-2 page papers regarding topics/developments in computer science. Students will also be required to write documentation for all programming assignments.

Social and Ethical Issues: No component

Theoretical Content:
Algorithm Design
Object Oriented Design

Problem Analysis & Solution Design: Students will be given problem descriptions in which they have to come up with a correct design. They will be required to give an analysis and reasons for different implementations.

Grading Scale:		**Course Evaluation:**	
90 – 100	A	Assignments	50%
80 - 89	B	Tests	20%
70 - 79	C	Final Exam	20%
60 - 69	D	Paper	5%
59 - below	F	Participation/Attendance	5%

Attendance Policy: Students are required to keep regular attendance to classes. Students are allowed to miss three (3) days of class. Any greater number of absences will result in the student failing the course.

Late/Missed Assignments: Each student must present a valid excuse for absences for which they wish to receive makeup work. Tests missed with an excused absence will be made up with special arrangements.

Cheating, Plagiarism/Academic Integrity and Penalties: Any student who submits another student's work as their own will have committed the act of plagiarism. This includes programming assignments and papers. Cutting and pasting from another paper (from web) without giving proper credit to the author of the original paper will be considered plagiarism. Copying parts of another student's paper and programming assignments is also considered plagiarism. The student receives an automatic F on that paper/assignment if it is plagiarized. If the student commits the act of plagiarism a second time, then the student will receive an F grade for that class.

Student with Special Needs: Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (medical, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD) program administered by University College. It is recommended that you visit the Disabilities Office located inside the EMAP Computer Lab in the Technical Education (IT) Building to register for the program at the beginning of each semester.

For more information or to schedule an appointment, please contact Mr. Billy Benson, Jr. via phone or email at 662-254-3005 or billy.benson@mvsu.edu.