

**BOWIE STATE UNIVERSITY**  
**School of Arts and Sciences**  
**Department of Computer Science**  
**Course Syllabus**

<b>COSC 112.002</b>	<b>Computer Science I</b>	<b>4 credits</b>	<b>Spring 2010</b>
<u>Section</u>	<u>Instructor</u>	<u>Office</u>	<u>Phone</u>
COSC 112.002 (TuTh 2:00PM - 3:20PM) Tu 12:30PM - 1:50PM	S. Sharma	CSB 317	301-860-4502

CLASS HOURS: TuTh 2:00PM - 3:20PM, Tu 12:30PM - 1:50PM, CSB 313  
OFFICE HOURS: Tu 3:20PM– 7:25 PM or by appointment  
OFFICE LOCATION: Computer Science Building, Room 317  
E-MAIL: ssharma@bowiestate.edu  
COURSE WEBSITE: <http://www.cs.bowiestate.edu/~sharad/cs112/index.html>

**Required Text:**

*C++ Programming: From Problem Analysis to Program Design*, 4th Edition, by D. S. Malik  
Course Technology, 2009, ISBN-13: 978-1-4239-0209-6

**Required Supplies:** Diskettes or other mobile storage media that plug in to a USB port

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**Prerequisite:** - None. (Students without programming experience may be advised to take COSC 111 before or concurrently with COSC 112.)

**COURSE DESCRIPTION** – The study of the formal syntax and semantics of a programming language. Topics include expressions, assignments, declarations, control structures, arrays, data abstractions, subprograms, user interfaces, error handling, end of file handling, string handling. Aspects of Software Engineering include top down design, structured programming, and style in programming conducted in a block structured language, such as Pascal, C, or C++. Ethical and social issues include information privacy, data reliability, data security, including wiretapping and encryption, and ergonomics. This course may be used to satisfy the *General Education Requirement in the Technology category*.

**Emerging Issues:**

This course will take a look at how human activities affect the environment and how technology has taken a role in green information technology.

**General Education Competencies:**

- I. Written and Oral Communications
  - a. Analyze and discuss critical issues and recurring themes in the discipline
  - b. Conduct research and evaluate information using the appropriate methods of the discipline.
- II. Scientific and Quantitative Reasoning:
  - a. Analyze and understand the physical and biological world
- III. Critical Analysis and Reasoning:
  - a. Apply skill in analysis, synthesis and problem solving
  - b. Apply logical reasoning in the examination and resolution of tasks
- IV. Technological Competency:
  - a. Create a document using word processing software

- c. Construct a presentation using presentation software
- d. Manipulate large amounts of data
- V. Information Literacy:
  - a. Identification of key concepts and terms that describe the information needed

**COURSE OBJECTIVES** - Upon completion of this course, the student will be able to:

1. Use, understand and distinguish the difference between the data types offered in C++.
2. Use, understand and distinguish the difference between the control structures offered in C++.
3. Use and understand arrays.
4. Use and manipulate character strings and functions.
5. Write a complete program in C++ using the concepts described in course objectives 1-4.
6. Understand and discuss professional ethics and several social issues in computing.

**Expected Student Competencies:**

Students will be required to complete:

- o A research paper and presentation containing key concepts and terms that examines computer ethics (*Ia, Ib, IVa, IVc, Va*)
- o A summary paper and presentation on current emerging greening technological issues in the global society using printed and online references for support (*Ia, IIa, Ib, IVa, IVc, Va*)
- o Write one final program covering all concepts using C++ (*IIIa, IIIb, IVd*)

**Specific Student Requirements:**

Students are expected to maintain regular attendance at class and examination periods. Active, regular participation is essential for success in this class. Introductory material must be well known in order to grasp the topics that follow. If a student misses a test (with an excused absence), it is the responsibility of the student to make arrangements with the instructor for the make-up exam within 1 week of the original examination date.

Students are expected to adhere to the high standards of the Bowie State University Code of Student Conduct.

**Assignments:**

1. Lab & Homework Assignments :
  - Solve assigned problems from the text or elsewhere
  - Study assigned chapters of the text and **work through** relevant examples.
  - Laboratory **Portfolio**: Compile the printouts of programs and homework in an organized loose-leaf notebook or folder. Highlight interesting problems and their resolution. Practice writing explanations using the terminology of the course.
2. Tests:
  - Problems are based on homework assignments, text book readings and class discussions; at least one problem will require writing a complete program. Tests are handwritten, and completed in class.

3. Programming Assignments:
  - Programs are to be sent (use Blackboard drop box or email) to the instructor prior to the time of class. Any program received after the time of the class is considered late **(NO EXCUSES)** and will receive a reduced score.
4. Tutoring:
  - Once a week, attend a tutoring session, for math and/or computing.
  - Maintain the tutoring log sheet, and keep it in the Laboratory Portfolio.
  - Show the log to your instructor as required.

### Course Grade Derivation

Lab, Homework Assignments, & Quizzes	10 %
Programming Assignments (5-7)	15 %
Mandatory Tutoring & Attendance	5 %
3 Tests	45 %
Final Exam	25%

### Class Layout

Week 1                      Chapter 1  
 Week 2                      Chapter 2  
 Week 3 & 4                Chapter 3  
**TEST #1 ON CHAPTERS 1, 2 AND 3**

Week 5 & 6                Chapter 4  
 Week 7                      Chapter 5  
 Week 8 & 9                Chapter 6  
**TEST #2 ON CHAPTERS 4, 5, & 6**

Week 10 & 11            Chapter 7  
 Week 12                    Chapter 8  
**TEST #3 ON CHAPTERS 7 & 8**

Weeks 13 & 14            Chapter 9

### FINAL EXAM

**THE FINAL EXAM WILL COVER THE ENTIRE SEMESTER**

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## Important Reminders from the Bowie State University Administration

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Students who have a disability and want accommodations should report immediately to **Disability Support Services (DSS)** by calling Mr. Michael S. Hughes, DSS Coordinator, at 301-860-4067.

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**EPE Statement:** Please take your **English Proficiency Examination** as early as possible! After completing ENGL 101 and ENGL 102, students must take and successfully pass the Bowie State University English Proficiency Examination. Transfer students who completed their English composition requirements at another university should take the English Proficiency Examination during their first semester of enrollment at the University.

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<b>Week Starting</b>	<b>Quiz or Test</b>	<b>COSC 112 Topics</b>
Jan 26	Pretest	Chs 1/2
Feb 2	Quiz 1	Chs 2/3
Feb 9	Quiz 2	File I/O
Feb 16	Quiz 3	Ch 4 /Quiz 3
Feb 23	Test 1	Ch 4
March 2	Quiz 4	Ch 5
March 9	Quiz 5	Ch 5 /Quiz 5
March 16	Spring Break	
March 23	Quiz 6	Chs 4/5
March 30	Test 2	Ch 6
April 6	Quiz 7	Ch 6
April 13	Quiz 8	Ch 7
April 20	Quiz 9	Ch 7/Quiz 9
April 27	Test 3	Ch 9 Arrays
May 4		Ch 9 Strings

### IMPORTANT TELEPHONE NUMBERS:

**Computer Science Department (Ms. Clark):** (301) 860-3961  
**Computer Science Department (Fax):** (301) 860-3979  
**Bowie State University (Main):** (301) 860-4000

<b>In case of inclement weather (snow etc.) please call (301) 860-4000 to find out if the University is open.</b>
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