

**COLLIN COUNTY COMMUNITY COLLEGE DISTRICT  
DIVISION OF BUSINESS, ENGINEERING, AND INFORMATION TECHNOLOGY**

**COURSE SYLLABUS**

**Course Number:** COSC 1436

**Course Title:** Programming Fundamentals I - C++

**Course Description:**

Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging.

**Course Credit Hours:** 4    **Lecture Hours:** 4    **Lab Hours:** 1

**Prerequisites:** COSC 1300 or equivalent computer literacy

**Co-Requisite:** MATH 1314 College Algebra.

**College Repeat Policy:** A student may repeat this course only once after receiving a grade, including "W".

**Student Learning Outcomes:**

After successful completion of this course, the student should be able to:

- 1.0 Demonstrate Competency in Structured Programming.
  - 1.1 Divide a program into functions and use the various storage classes of variables.
  - 1.2 Pass data between functions, by value and by reference.
  - 1.3 Design, code and document a term programming project.
- 2.0 Demonstrate Competency in Program Documentation.
  - 2.1 Construct a program heading and use program comments.
  - 2.2 Print out a source listing.
- 3.0 Demonstrate Competency in Algorithm Development.
  - 3.1 Complete all programming assignments.
- 4.0 Demonstrate Competency in Program Code Production.
  - 4.1 Explain the purpose of preprocessing directives.
  - 4.2 Explain the precedence and associativity of operators.
  - 4.3 Code the logical control structures (sequence, selection and iteration).

- 4.4 Perform special input/output functions.
  - 4.5 Run a program using redirection of input and output.
  - 4.6 Define and manipulate one-dimensional and multidimensional arrays.
  - 4.7 Decide whether a two-dimensional array or a parallel array is best suited to store a given set of data in a program.
  - 4.8 Demonstrate knowledge of the relationship between arrays and pointers by coding a particular program first using arrays and then pointers.
  - 4.9 Use the various string handling functions.
  - 4.10 Declare and utilize a C++ structure.
  - 4.11 Read and write to sequential data files.
- 5.0 Demonstrate Competency in Advanced Programming Techniques.
- 5.1 Use the C++ preprocessor.
  - 5.2 Understand memory management and dynamic allocation.
  - 5.3 Design, code, and debug a semester programming project.

**Attendance Policy:** See the current *Collin Registration Guide* for the last day to withdraw.

**Religious Holy Days:** please refer to the current *Collin Student Handbook*

**ADA Statement:** It is the policy of Collin County Community College to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-G200 or 972.881.5898 (V/TTD: 972.881.5950) in a timely manner to arrange for appropriate accommodations.

**Academic Ethics:** The College District may initiate disciplinary proceedings against a student accused of scholastic dishonesty. Scholastic dishonesty includes, but is not limited to, statements, acts, or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work material that is not one's own. Scholastic dishonesty may involve, but is not limited to, one or more of the following acts: cheating, plagiarism, collusion, use of annotated texts or teacher's editions, and/or falsifying academic records.

**Plagiarism** is the use of an author's words or ideas as if they were one's own without giving credit to the source, including, but not limited to, failure to acknowledge a direct quotation.

**Cheating** is the willful giving or receiving of information in an unauthorized manner during an examination, illicitly obtaining examination questions in advance, copying computer or Internet files, using someone else's work for the assignments as if it were one's own, or any other dishonest means of attempting to fulfill the requirements of a course.

**Collusion** is intentionally aiding or attempting to aid another in an act of scholastic dishonesty, including but not limited to, providing a paper or project to another student; providing an inappropriate level of assistance; communicating answers to a classmate

during an examination; removing tests or answer sheets from a test site, and allowing a classmate to copy answers.