COLLIN COUNTY COMMUNITY COLLEGE
COURSE SYLLABUS

COURSE NUMBER: COSC 1420

COURSE TITLE: INTRODUCTION TO PROGRAMMING WITH C^{++}

CREDIT HOURS: 4 **LECTURE HOURS:** 4 **LAB HOURS:** 2

PRE-REQUISITES: COSC1300 Computer Essentials.

CO-REQUISITES: MATH134 College Algebra.

INSTRUCTOR INFORMATION:

Instructor: Hieu D. Vu
E-Mail: hieuvu4@juno.com

CATALOG DESCRIPTION:

An introduction to fundamental high-level programming using the C^{++} programming language. For beginning programmers. Lab required.

TEXTBOOK:

Starting Out With C^{++}, Tony Gaddis, Scott/Jones Inc., Publishers, 1998

SUPPLIES:

One 3.5 inch diskette, high density.

COURSE REQUIREMENTS:

There will be regularly assigned homework problems. Some of these will be exercises from the required text. Others will be programming problems, which will require the student to spend time in the computer laboratory.

Note: To plan a minimum of three hours of outside preparation for each hour of class is a safe time allocation for successfully completing the course.

ALL STUDENTS MUST:

1. Take all exams.
2. Complete lab projects.
3. Complete all other written assignments, as assigned.
4. Take the final exam.

METHOD OF PRESENTATION:

Class time will be spent in lecture/discussion over the important aspects of chapters over which students will be tested as well as concepts in the C^{++} programming language. Considerable time will be spent in lecture/demonstrations of the software.

METHOD OF EVALUATION:

Five (5)	Programming Assignments	50%
Two (2)	Exams	30%
	Final Exam	20%

Grade:	90 - 100	A
	80 - 89	B
	70 - 79	C
	60 - 69	D
	00 - 59	F

COURSE REQUIREMENT DEADLINES:

Credit will be given for ONLY those exam(s), program(s), and/or project(s) completed and/or turned in no later than the deadlines as announced by your instructor unless prior arrangements have been made with the instructor.

No Exception To This Policy Will Be Made.

Final grades will be determined from the cumulative points each student receives during the semester. Programs that output incorrect answers for the given data sets will be reduced accordingly. Students are encouraged to carefully check the output from their programs before submitting them for grading.

The term project will be described in a handout distributed at a later date.

ATTENDANCE POLICY:

YOUR attendance is the single greatest predictor of your success. Student attendance at ***EVERY*** class is important and expected. Please see the instructor regarding absences or class conflicts.

AMERICANS WITH DISABILITIES ACT COMPLIANCE:

It is the policy of Collin County Community College to provide reasonable and appropriate accommodations for individuals with documented disabilities. This college will adhere to all applicable Federal and State 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 ACCESS Office (G-200) or 881-5898, (TDD - 881-5950) in a timely manner if he/she desires to arrange for accommodations.

ACADEMIC ETHICS:

You are expected to create, edit, format, and print out your own assignments, take tests without notes or other outside assistance, and write, debug, and print your own C^{++} programs. **ALL WORK IS EXPECTED TO BE YOUR OWN**. If cheating is detected, all parties involved will be denied any points for that project of exam. The exam or project will be given to the Dean for any further action. (Read Last page).
Smoking, eating, and drinking are not permitted in the classroom or lab.

Other offenses include:

> "Misuses of college computing systems to harass other (including, but not limited to, sending, distributing, posting or displaying offensive or threatening material, forging mail messages, sending chain letters, etc.), which may result in the suspension of computing privileges as well as disciplinary action."

See the Student Handbook, Code of Conduct.

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 Read and write to sequential data files.

5.0 DEMONSTRATE COMPETENCY IN PROGRAM CODE TESTING AND MAINTENANCE.

5.1 Use a microcomputer based text editor and C language compiler.

5.2 Locate and explain syntax errors in a C program.

5.3 Use techniques for debugging C programs.

Workplace Competencies

1. **Resources: Identifies, organizes, plans, and allocates resources**
   Students in COSC1420 must be able to appropriately allocate their time in order to complete class assignments in a timely manner. They must be able to budget their time and perform class-related activities through a ranking process which allows them to meet self-determined goals. Group assignments help students learn how to distribute the work among the members according to skills and at the same time help students learn how to evaluate one another's work.

2. **Interpersonal: Works with others**
   Students in COSC1420 must participate in group activities. Many times these groups are randomly selected, thus giving the students an opportunity to interact with different types of students. Students must learn to use leadership skills, learning skills, negotiating skills, and evaluating skills as they work together to accomplish a common goal.

3. **Information: Acquires and uses information**
   Students in COSC1420 must acquire the proper information in order to successfully complete the course. Sources include the text, current news, personal experiences, and the Internet. They must be able to evaluate what information is necessary and pertinent to answer questions and solve problems relating to programming issues. They must be able to organize this information in a logical and precise manner in order to communicate their responses appropriately.

4. **Systems: Understands complex inter-relationships**
   Students in COSC1420 must be able to understand the concept and the operation of various programming instructions, as this represents the foundation of this course. Students must become familiar with various types of systems and be able to evaluate these and demonstrate an understanding of computer programming concepts and problem solving techniques.

5. **Technology: Works with a variety of technologies**
   Students in COSC1420 must be aware of the impact of changing technology upon the performance of computer systems. Critical areas include communications and computer technologies.

Foundation Skills

1. **Basic Skills-Reading, Writing, Math, Listening, Speaking**
   Students in COSC1420 are required to complete problems in the text, programming assignments as well as listen and participate in classroom discussions. Students are required to perform mathematical calculations, prepare documentation identifying variables and constants used in their programs and prepare a written explanation of problems encountered in the development of their programs and how these difficulties were resolved.

2. **Thinking Skills – Creative thinking, problem solving, visualizing relationships, reasoning and learning**
   Students in COSC1420 are required to complete exercises and problems in the text, study guide and tutorials which involve the use and development of conceptualizing and visualizing skills, problem solving skills, and decision making skills. Computer programming issues tend to involve complex relationships which challenge and develop student's intellectual skills.

3. **Personal Qualities – Responsibility, sociability, self-management, integrity, honesty**
   Students in COSC1420 are required to develop and demonstrate self-management and responsibility in completing assignments on time and in good form. Group projects encourage teamwork and the development of the social skills necessary to be successful in the business world.

COURSE CONTENT:

WEEK:	TOPIC
1	Introduction Review of syllabus/Course Objectives CHAPTER 1 – Introduction to Programming and Program Design. Introduction to the C++ Integrated Environment. Information Assurance, Security and Controls.
2	CHAPTER 2 (Concluded)
3	CHAPTER 3 – Expressions and Interactivity
4	CHAPTER 4 – Making Decisions: The if, if … else, if … else if … statements.
5	CHAPTER 5 – Looping: The for, while, do … while loops.
6	CHAPTER 6 – Functions: Prototyping, return value, non-return value functions.
7	CHAPTER 6 (Concluded) **FIRST EXAM**
8	CHAPTER 7 – Arrays: One, Two, Multi-Dimensional Arrays.
9	CHAPTER 8 – Pointers: Linked Lists.
10	CHAPTER 8 (Concluded)
11	CHAPTER 9 – Characters and Strings
12	CHAPTER 9 (Concluded)
13	CHAPTER 11 – File Operations
14	**SECOND EXAM** CHAPTER 11 (Concluded)
15	Evaluation and Presentation of Group Projects Evaluation and Presentation of Semester Projects
16	GRADE RECONCILIATION **FINAL EXAM** (Comprehensive)

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Note: For any TESTS or Programming Assignments:

Cheating:

Copying other classmate's work or
from a student in another class or
from a text book or
from a student in a prior semester.

Allowing other students to copy your own work.

Disciplinary Actions:

Depending the nature of violation, a student might face:

1. Get a ZERO (0) for that test or programming assignments.
2. Get an "F" for the semester and denied to drop the course.
3. Might be barred from subsequent registration in any Computer Science courses. This matter may be referred to the appropriate dean for further university action.