CSCI 1410: Fundamentals of Computing
Section 001
Department of Computer Science and Engineering
College of Engineering and Applied Sciences
University of Colorado Denver
Course Syllabus

Instructor:	Dr. Thomas Augustine	Term:	Spring, 2016
Office:	Lawrence St 802	Class Meeting Days:	Tues / Thurs
Phone:		Class Meeting Hours:	11:00 pm – 12:15 pm
E-Mail:	thomas.augustine@ucdenver.edu	Class Location:	Student Commons 2600
Office Hours:	Mon-Thurs 2:00-4:30pm		

COURSE OVERVIEW:

I. **Welcome** to Fundamentals of Computing. This course is designed to be your first course in computer programming. It is geared for individuals that are majoring or minoring in Computer Science and it will be "fast paced" covering a lot of material. I hope that this class is not only informative for you, but also fun!

II. **University Course Catalog Description:** First course in computing for those who will take additional computer science courses. Covers the capabilities of a computer, the elements of the computer language C++, and basic techniques for solving problems using a computer.

III. **Course Overview:** This is a first course in a series of three that will teach the student how to program using the C++ Programming Language. This course also has a co-requisite lab that will provide hands-on instruction in programming.

IV. **Course Goals and Learning Objectives:** It is the goal of this course that at the completion of the semester you would have gained the following knowledge:
- Skills in problem solving.
- Skills in computer programming using C++.
- Skills using an operating system such as Linux/Unix.
- Skills using a shell that interacts with a kernel.
- Skills using a basic editor and compiler.

The learning objectives of this course are:
- Learning the basics of computing including hardware, software, and operating systems.
- Understanding how computers are used to solve problems.
- Learning the basics of programming using the C++ programming language, including programming style.
- Learning to design, code, and test programs in C++ using the UNIX/Linux based gcc compiler.

V. **Course Prerequisites:** It is expected that at the beginning of this course that you have the following knowledge:
- Basic Math, including algebra and trigonometry.
- How to use a computer and associated peripherals such as printers and other I/O devices.
- How to use software programs, such as word processors and text editors.

VI. **Course Co-Requisite:** CSCI 1411

Note: ***Each student must sign the Prerequisites Agreement form (which I will pass out during the first week of class) to receive any credit for any assignment or exam. If this form is not signed by the first week, the student will be administratively dropped from the course.***

VII. ABET Assessment Criteria: This course meets ABET Assessment Criteria (b): An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.

VIII. Course Credits: This course has three (3) credits associated with it.

IX. Required Texts and Materials: This course requires the following textbook:

Title: Starting out with C++: From control structures through objects, 8th Edition
Author: Tony Gaddis
Publisher: Pearson
ISBN-10: 0-13-379633-7

X. Course Schedule: The following is the tentative schedule for this course and it is subject to change. That being said, I will try my best to keep to it. If there are any changes to this schedule they will be reflected on this course's Canvas page.

Serial #	Date	Topic	Reading	Assignment (*ABET Requirement*)
1	Tue 01/19	Introductions, Syllabus, Canvas, Hardware, OS, Machine Language, C++	1.2 – 1.10	PA 1 Assigned *(B)*
2	Thur 01/21	Hardware, OS, Machine Language, C++	2.1 – 2.18	
3	Tues 01/26	Intro to programming, cout, data types, operators		HW CH 1 Due
4	Thur 01/28	Intro to programming, cout, data types, operators	3.1 – 3.11	
5	Tue 02/02	cin, Math Expressions, Type casting, working w/Strings		HW CH 2 Due
6	Thur 02/04	cin, Math Expressions, Type casting, working w/Strings	4.1 – 4.15	
7	Tue 02/09	Control Statements (if – else), logical operators, switch	5.1 – 5.12	HW CH 3 Due
8	Thur 02/11	Loops, using files, increment/decrement	6.1 – 6.16	HW CH 4 Due
9	02/16	Functions		HW CH 5 Due **PA 1 Due** PA 2 Assigned *(B)*
10	02/18	Functions		
11	02/23	**Review for Test 1**		HW CH 6 Due
12	02/25	**TEST 1 (Chapters 1 – 5)**	7.1 – 7.11	
13	03/01	Arrays & Vectors	8.1 – 8.5	
14	03/03	Searching & Sorting Arrays	11.1 – 11.12	HW CH 7 Due
15	03/08	Structured Data (structs), arrays of structures	9.1 – 9.10	HW CH 8 Due
16	03/10	Pointers		
17	03/15	Pointers	10.1 – 10.8	HW CH 11 Due
18	03/17	Characters, C-Strings, String Class	12.1 – 12.10	HW CH 9 Due
	03/22	**Spring Break – No Class**		
	03/24	**Spring Break – No Class**		
19	03/29	Advanced File Operations		HW CH 10 Due
20	03/31	**Review for Test 2**		**PA 2 Due** PA 3 Assigned *(B)*
21	04/05	**TEST 2 (Chapters 6 – 11)**		
22	04/07	Advanced File Operations	13.1 – 13.16	
23	04/12	Introduction to Classes		HW CH 12 Due
24	04/14	Introduction to Classes	14.1 – 14.8	
25	04/19	More about classes		HW CH 13 Due
26	04/21	More about classes	15.1 – 15.8	
27	04/26	Inheritance, Polymorphism, and Virtual Functions		HW CH 14 Due
28	04/28	Inheritance, Polymorphism, and Virtual Functions		
29	05/03	Special Topics		HW CH 15 Due **PA 3 Due**

30	05/05	Review for Test 3		
05/09-05/14: Finals Week (Test 3)				

EVALUATION:

I. **Course Grade:** Course grades are a weighted average of the grades earned on all graded material. The weights for the different categories are:
- Attendance.....05%
- Class Participation.....05%
- Homeworks/Quizzes.....10%
- Programming Assignments.....40%
- Exams.....40%

Letter Grades are as follows:
- 94% – 100% ..... A
- 90% – 93.9%..... A-
- 87% – 89.9%..... B+
- 84% – 86.9% ..... B
- 80% – 83.9%..... B-
- 77% – 79.9%..... C+
- 74% – 76.9% C
- 70% – 73.9%..... C-
- 67% – 69.9%..... D+
- 64% – 66.9% ..... D
- 60% – 63.9%..... D-
- 00% – 59.9% ..... F

II. **Homework:** The homework for this course will be submitted on Canvas. You will have a set of questions for each chapter in the book that corresponds to the material covered in that chapter. All homework is due at the beginning of class on the due date, which typically will be the class period following the completion of the chapter. I do not allow late work to be submitted unless there is **prior approval** by me based on **special circumstances.**

III. **Programming Assignments:** The Programming Assignments will be in the C++ programming language. These assignments will cover multiple topics/chapters and you will have multiple weeks to complete them. You can think of these assignments as being similar to a term paper. The grading of the Programming Assignments is a combination of completeness (all specifications are covered), correctness of results, and style. All programming assignments are due at the beginning of class on the due date. Submissions will be made via Canvas. I do not allow late work to be submitted unless there is **prior approval** by me based on **special circumstances.**

IV. **Exams:** There will be three exams (including the final). Exams are closed book, but I allow you to use one sheet of paper hand written by you which you must hand in with the exam.

V. **Class Attendance:** Your attendance grade will be an average of the number of days you were present and actively participating out of the total number of class days.

VI. **Class Participation:** Based primarily on your discussion board comments, but active participation in class will also be considered.

VII. **Grade Dissemination:** I will be utilizing the Canvas system to record your grades. You can check on Canvas for all of your current grades.

COURSE PROCEDURES:

I. **Attendance:** Attendance is required/mandatory. As with all science courses, you will have easier time learning the material if you attend the lectures and participate in class.

II. **Late Work Policy:** All programming assignments and homework are due at the beginning of class on the due date. Submissions will be made via Canvas. I do not allow late work to be submitted unless there is **prior approval** by me based on **special circumstances.** Makeup exams and quizzes are not normally given; in **special circumstances**, arrangements should be made **prior** to the exam date if at all possible.

III. **Grades of "Incomplete":** The current university policy concerning incomplete grades will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. I am the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the "I" will automatically be recorded as an "F" on your transcript.

IV. **Email Policy:** I will be using both the University email system and the Canvas email system. I will respond to your email to the address it was sent from and from the system it was sent from (if you email me from within Canvas, I will respond to Canvas, if you email me from traditional email, I will respond with traditional email). For class announcements I will send a Canvas group email. I will be checking my email frequently and you can expect a response within 48 hours (holidays excluded).

V. **Canvas:** I will be utilizing Canvas in this course to assign all of the course work and for you to submit your solutions. I will also be utilizing it to communicate with you and to provide you with your current grade. It is recommended that you check it frequently.

VI. **Classroom Devices:** Out of respect for everyone in the classroom, if you would like to record the lectures you must first receive my approval. I generally will approve the request, but I first would like to speak with you concerning the scope of the recording.

STUDENT EXPECTATIONS:

I. **Civility:** My commitment is to create a climate for learning characterized by respect for each other and the contributions each person makes to class. I ask that you make a similar commitment.

II. **Professionalism:** Since mobile devices can be a distraction during class, I ask that all devices be put into "silent" mode and not utilized during class; this includes checking Facebook, sending a Tweet, or checking email. If I feel that your mobile device is becoming a distraction for either other students, you, or myself I will ask you to leave the classroom.

III. **Religious Observations:** I understand that an individual's religion plays a large part in their lives and I do not want this course to interfere with that aspect of their lives. If you find that your religion's holiday(s) falls on a class day and you can not attend due to this, please notify me within two weeks of that date by email (or Canvas mail) and we will work together to come to a mutually acceptable solution.

COLLABORATION AND CHEATING:

I encourage you to review material and discuss ideas together for projects and other assignments, and to work on problems you encounter. It is a characteristic of computing that discussions often help to clarify problems and resolve difficulties — feel free to take advantage of this to improve your understanding of the material, and to complete projects, but **make sure you then create your own work**. It's important that you go through the program design, coding, and debugging processes yourself, or you will not be developing your own programming skills and understanding. "Working

together" does not mean that one student does the majority of the work and other students put their names on it! If you have any questions about what this means, please see me. **Every student must create their own work on their own!**

Any instances of cheating will result in either a zero for the assignment, a grade of zero in the course, or sanctions determined by the college (including suspension and expulsion).

UNIVERSITY POLICIES:

I. **Access:** The University of Colorado Denver is committed to providing reasonable accommodation and access to programs and services to persons with disabilities. Students with disabilities who want academic accommodations must register with Disability Resources and Services (DRS) in North Classroom 2514, Phone: 303-556-3450, TTY: 303-556- 4766, Fax: 303-556-4771. I will be happy to provide approved accommodations, once you provide me with a copy of DRS's letter. [DRS requires students to provide current and adequate documentation of their disabilities. Once a student has registered with DRS, DRS will review the documentation and assess the student's request for academic accommodations in light of the documentation. DRS will then provide the student with a letter indicating which academic accommodations have been approved.]

II. **Academic Honesty and Student Code of Conduct:** Students are expected to know, understand, and comply with the ethical standards of the university, including rules against plagiarism, cheating, fabrication and falsification, multiple submissions, misuse of academic materials, and complicity in academic dishonesty. For more information on Academic Honesty and the Student Code of Conduct please see: http://www.ucdenver.edu/life/services/standards/students/pages/default.aspx

III. **Other University Policies:**
- Academic Freedom: http://www.ucdenver.edu/policy/pages/academic-Freedom.aspx
- Family Educational Rights and Privacy Act (FERPA): http://www.ucdenver.edu/student-services/resources/registrar/students/policies/Pages/StudentPrivacy.aspx
- Attendance: http://www.ucdenver.edu/faculty_staff/employees/policies/Policies%20Library/OAA/StudentAttendance.pdf
- Discrimination and Harassment Policy and Procedures: http://www.ucdenver.edu/about/WhoWeAre/Chancellor/ViceChancellors/Provost/StudentAffairs/UniversityLife/sexualmisconduct/DenverPolices/Pages/DenverWelcome.a spx
- Grade Appeal Policy: http://www.ucdenver.edu/policy/Documents/Process-for-Grade-Issues.pdf

THE LAST WORD

I'm here to help you do well in this course. If you need any help on the material or assignments, please come to office hours or email me before you get behind. If you have any other problems that interfere with your academic work, see me as soon as possible so we can look for a solution. I'll review your grade with you any time.