

AUSTIN COMMUNITY COLLEGE
DEPARTMENT OF COMPUTER STUDIES AND ADVANCED TECHNOLOGY

Course Syllabus: COSC 1320 – C++ Programming
Synonym 04759 – Spring 2010

Lecture: RVS G-9142 Tuesday, Thursday 12:00 pm – 12:50 pm
Lab: RVS G-9142 Tuesday, Thursday 12:50 pm – 1:40 pm

Instructor: William A. (Bill) Tucker

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Office Hours: Monday 8:00am – 8:50am, 1:30pm – 2:50pm
Tuesday 8:00am – 8:50am, 1:45pm – 2:15pm
Wednesday 8:00am – 8:50am, 12:30pm – 2:50pm
Thursday 8:00am – 8:50am, 1:45pm – 2:15 pm

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Course Description: This course is an introduction to the C++ programming language and its subset, the C programming language. Program structure, block, storage types, console and file I/O, functions, arrays, strings, pointers, call-by-reference, call-by-value, and dynamic memory allocation will be discussed. The concept of classes will be introduced. The differences between C++ and C will also be discussed.

Pre-requisite: COSC 1315 or departmental approval

Approved Course Text: Starting Out with C++, Early Objects, 6th Edition, Gaddis, Walters, Muganda, Addison Wesley, 2008. (ISBN-13: 978-0-321-51238-3 MHID: 0-321-51238-3)

Instructional Methodology: This course will have both lecture and lab each week. If the students are unable to finish the assigned lab work within the lab time, they will need to visit the CIS open labs.

Course Rationale: This course is designed to teach students the C++ programming language and introductory and intermediate programming concepts with examples and applications using the C++ language. The course builds and extends topics covered in the prerequisite course, COSC 1315 and prepares students for more advanced programming courses such as ITSE 2431 (Advanced C++ Programming) and COSC 2415 (Data Structures) as well as for entry level programming employment. The course is required for an Associate Degree in several Computer Information Systems and Computer Science degree areas.

Course Objectives/Learning Outcomes:

1. Demonstrate a thorough understanding of modular programming by designing programs that require the use of multiple programmer defined functions.
2. Demonstrate a thorough understanding of arrays by designing and implementing programs that search and sort arrays.
3. Demonstrate a thorough understanding of the object oriented programming concepts of encapsulation, data abstraction and composition by designing and implementing classes including the use of overloaded functions and constructors.
4. Demonstrate a thorough understanding of the concept of pointers and dynamic memory allocation by designing and implementing programs using pointers and dynamic memory allocation.
5. Demonstrate a thorough understanding of the implementation of programmer defined functions and classes by writing code, performing unit testing and debugging of multiple complex programs.
6. Demonstrate good documentation style in all of the programs written in this course.
7. Become proficient in implementing data validation code, performing unit testing, and developing test plans while implementing robust solutions to the assignments in this course.

Scans Competencies:

SCANS competencies have been identified that are relevant to the level of instruction in the community college environment. These competencies reflect the knowledge and skills employees need to succeed in any occupation. To be successful in this course the following SCANS competencies will need to be applied:

- Students select relevant goal-related activities, rank them in order of importance, allocate time to these activities, and understand, prepare and follow schedules.
- Students use computers to process information.
- Students understand overall intent and proper procedures for setup and operation of equipment.
- Students perform basic computations; use basic numerical concepts such as whole numbers, etc.
- Students receive, attend to, interpret, and respond to verbal messages and other cues.
- Students recognize problems and devise and implement plan of action.

Grade Policy:

Grade will be assigned based both on concepts and practical application. Exams, quizzes, and lab projects will be a part of the grade. An overall grade will be assigned on the following grading scale:

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
0% - 59%	F

Each student's grade for this course will consist of 3 comprehensive exams (75%) and 9 programming assignments (25%). Each exam consists of a written part (75%) and a lab part (25%). There are **NO** make up exams given in this course. If a student misses an exam, the next exam will count double. Only one exam may be missed and there will be **NO** make up for EXAM 3.

ALL programming assignments require the submission of a complete package of documentation included in the source code. The programs will be submitted electronically via the ACC Blackboard system which will document the time and date the programs are submitted. Programs may be turned in up to one week after the due date with a late penalty of 20%. All programming assignments are due at the end of the scheduled lab period on the date shown in the syllabus. **Programming assignments turned in more than one week after the due date will receive a grade of zero.** Programs will be graded based upon the following general grading scale:

Adherence to coding conventions (style)	10%
Error Free, Warning Free Compile	35%
Correct Output	35%
Efficient use of code	10%
Documentation	10%
Total	100%

Any deficiencies noted on the programming assignments must be corrected by the scheduled class period following the return of the assignment or that project will receive a grade of zero.

In order to receive credit for **ANY** programs a student **MUST SUBMIT A GOOD FAITH EFFORT FOR ALL** programming assignments. That means that something must be turned in for each programming assignment or **all of the programming assignments will receive a grade of ZERO.** Further, what is turned in must represent an actual attempt to satisfy the requirements of the particular assignment. The last date to submit programs for consideration this semester is May 7, 2010.

Scheduling of computer time outside of regular lab time is the student's responsibility. Availability of computers is **NOT** an excuse for being late with any assignment.

EXAM 1	250 points	250 points total
EXAM 2	250 points	250 points total
EXAM 3	250 points	250 points total
9 Outside Programming Assignments	points vary	250 points total
TOTAL		1000 points

Course/Class Policies:

Academic Integrity

A student is expected to complete his or her own projects and tests. Students are responsible for observing the policy on academic integrity as described in the current ACC Student Handbook, under "Student Discipline Policy, Section C".

The penalty assessed will be in accordance with the current ACC Student Handbook policy. See <http://www.austincc.edu/handbook/policies4.php> for more information.

For this course, the penalty for scholastic dishonesty is a grade of 'F' for the course.

Incomplete

A student may receive a temporary grade of "I" (Incomplete) at the end of the semester only if ALL of the following conditions are satisfied:

1. The student is unable to complete the course during the semester due to circumstances beyond their control.
2. The student must have earned at least half of the grade points needed for a "C" by the end of the semester.
3. The request for the grade must be made in person at the instructor's office and necessary documents completed.
4. To remove an "I", the student must complete the course by two weeks before the end of the following semester. Failure to do so will result in the grade automatically reverting to an "F".

Freedom of Expression Policy

It is expected that faculty and students will respect the views of others when expressed in classroom discussions.

Tutoring

Free tutoring is provided for this course. For schedules and details please refer to <http://www.austincc.edu/cit>

Attendance / Withdrawal

Students are expected to attend classes and will be held responsible for all material covered in class. Regular attendance helps ensure satisfactory progression towards completion of the course.

It is the student's responsibility to complete a Withdrawal Form in the Admissions Office if they wish to withdraw from this class. The instructor may withdraw students from this class if their absences exceed 10% of the total number of class meetings or if the student fails to attempt 4 graded assignments by the last date to receive credit. The last date to withdraw for this semester is April 26, 2010. It is not the responsibility of the instructor to withdraw the students from their class even though the instructor has the prerogative to do so under the above listed circumstances.

ALERT: New state law for new students. *No more than six course withdrawals throughout your undergraduate education*, regardless of how many colleges you attend. Students who entered college before fall 2007 are not affected. Ask a counselor for details.

Student Files – Privacy

The information that a student stores in his/her student volume in the Computer Studies Labs may be viewed by their instructor for educational and academic reasons.

Students with Disabilities

Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office for Students with Disabilities on the campus where they expect to take the majority of their classes. Students are encouraged to make this request three weeks before the start of the semester. (Refer to the current ACC Student Handbook).

Communication

The ACC online Blackboard system <http://aconline.austincc.edu> and the ACCmail accounts will be used as the official communication system during this semester. Lecture notes, handouts, changes to course schedule or assignments and your grades will be posted on Blackboard and all email communication will be via the ACCmail accounts. All students are expected to check both Blackboard and their ACCmail accounts on a regular basis. For information on how to log onto Blackboard 8.0 and ACCmail please visit the following sites: <http://irt.austincc.edu/blackboard/stlogin.html> <http://www.austincc.edu/google/>. A brief orientation will be provided during the first class laboratory period.

Use of Electronic Devices

The use of cell phones, pagers and personal electronic devices are not allowed at any time in the class or lab. The use of a laptop computer in class or lab is restricted to instructor approved activities.

User ID and Passwords

Lab:

ID _____ Password _____

Blackboard: <http://aconline.austincc.edu>

Use your ACCeID and password for Blackboard.

ACCmail: For information on how to activate and manage your ACC mail please refer to <http://www.austincc.edu/google/>.

C++ Programming Course Schedule - Synonym 04759

Week Num	Date	Lecture	Programming Projects Lab Exams
1	1/19	Course Introduction Chapter 1 – Intro to Computers and Programming	Lab Orientation
	1/21	Chapter 2 – Intro to C++	Use of the Compiler and Debugger
2	1/26	Chapter 3 – Expressions and Interactivity	Program 1 (10 points)
	1/28	Chapter 4 – Making Decisions	
3	2/2	Chapter 5 – Looping	Program 2 (10 points)
	2/4		
4	2/9	Chapter 6 – Functions	In Class Project on Functions
	2/11	In Class Project on Functions	
5	2/16	Review for EXAM 1	Program 3 (20 points) Lab Exam 1
	2/18	EXAM 1 (Chapters 1-6)	
6	2/23	Chapter 7 – Intro to Classes and Objects	
	2/25	Chapter 8 - Arrays	
7	3/2	Chapter 8 (continued)	Program 4 (30 points)
	3/4	Chapter 12 – More about Characters and Strings	
8	3/9	Chapter 11 – More about Classes and OOP	Program 5 (30 points)
	3/11		
SPRING BREAK – 3/15/10 – 3/21/10			
9	3/23	Chapter 13 – Advanced File and I/O Operations	
	3/25		
10	3/30	Review on classes	Program 6 (30 points)
	4/1	Review for Exam 2	
11	4/6	EXAM 2 (Chapters 7-8, 11-13)	Lab Exam 2
	4/8	Chapter 10 – Pointers	
12	4/13	Chapter 9 – Searching / Sorting	Program 7 (30 points)
	4/15		
13	4/20	Chapter 14 - Recursion	
	4/22		
14	4/27	Chapter 17 – Linked Lists	Program 8 (50 points)
	4/29		
15	5/4	Review	Program 9 (40 points)
	5/6	Review for Exam 3	
16	5/11	EXAM 3 (Chapters 9, 10, 17)	Lab Exam 3
	5/13		

Note: The instructor has the prerogative to change the course schedule as required. Students are expected to read and study the assigned material, per the course schedule, **BEFORE** each class.