

**AUSTIN COMMUNITY COLLEGE
DEPARTMENT OF COMPUTER STUDIES AND ADVANCED TECHNOLOGY**

Course Syllabus: COSC 1315 – Fundamentals of Programming Synonym 34162 – Fall 2011

Lecture: NRG 4211 Tuesday, Thursday 12:00pm – 1:20pm

Lab: NRG Room 4207 Tuesday 1:30pm – 2:25pm

Instructor: Lori Brill

Office Hours: Tuesday 2:25pm – 2:55pm, Thursday 1:20pm – 1:50pm, NRG,
Room 4207, CIT Computer Lab or Adjunct Faculty Office

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Course Description: An introduction to computer concepts, logic, and computer programming. Includes designing, coding, debugging, testing, and documenting programs using a high-level programming language.

Pre-requisite: B-Reading and Math.

Approved Text and Teaching Materials:

An Introduction to Programming with C++, 6th edition, Diane Zak, Course Technology, 2011.
(ISBN-13: 978-0-538-46652-3, ISBN-10: 0-538-46652-9)

Instructional Methodology: This course will have both lecture and lab each week. If students are unable to finish the assigned lab work within the allotted lab time, they will need to visit the CIT open labs. Visit <http://www.austincc.edu/cit/> and click on the Open Lab schedule link.

Course Rationale: This is an entry level programming course designed to teach students the basics of programming. The course will include designing, coding, debugging, testing, and documenting programs using a high level programming language. This course is included in the following degree plans:

- Associate of Applied Science – Computer Programming
- Associate of Applied Science – Local Area Network Administration
- Associate of Applied Science – Microcomputer Application Support

Course Objectives / Learning Outcomes:

1. Recognize basic computer hardware architecture constructs such as instructions sets, memory, CPU, external devices, and data representation.
2. Use programming software tools including compilers, linkers, editors, and integrated development environments to create and test programs.
3. Demonstrate problem solving skills by developing algorithms to solve problems incorporating the concept of variables and constants of basic data types in a computer program.
4. Utilize programming constructs which uses input and output devices for acquiring and displaying data including sequential files.
5. Create programming designs which includes step-by-step algorithms and desk checking to validate problem solutions.
6. Incorporate the use of sequential, selection and repetition control structures into the algorithms implemented as computer programs.
7. Demonstrate an understanding of structured design by implementing programs with functions and passing of parameters to solve more complex problems and to promote the concept of efficient use of code.
8. Design and implement programs using arrays.
9. Design and write programs which use data consisting of words and sentences using the string object.

SCANS Competencies:

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. This course will expose the student to the concepts and application of the following competencies:

- Students select relevant goal-related activities, rank them in order of importance, allocate time to these activities, and understand, prepare and follow schedules.
- Students acquire and evaluate information.
- Students organize and maintain information.
- Students interpret and communicate information.
- Students use computers to process information.
- Students know how social, organizational and technological systems work and operate effectively with them.
- Students suggest modification to existing systems and develop new or alternative systems to improve performance.
- Students understand overall intent and proper procedure for setup and operation of equipment.
- Students locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.
- Students communicate thoughts, ideas, information, and messages in writing; create documents such as letters, directions, manuals, reports, graphs, and flow charts.
- Students perform basic computations; use basic numerical concepts such as whole numbers, etc.
- Students approach practical problems by choosing appropriately from a variety of mathematical techniques.

- Students receive, attend to, interpret, and respond to verbal messages and other cues.
- Students specify goals and constraints, generate alternatives, consider risks, and evaluate and chooses best alternative.
- Students recognize problems and devise and implement plan of action.
- Students organize and process symbols, pictures, graphs, objects, and other information.
- Students use efficient learning techniques to acquire and apply new knowledge and skills.
- Students discover a rule or principle underlying the relationship between two or more objects and apply it when solving a problem.
- Students exert a high level of effort and persevere towards goal attainment.
- Students believe in own self-worth and maintain a positive view of self.
- Students demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings.
- Students assess self accurately, set personal goals, monitor progress, and exhibit self-control.
- Students choose ethical courses 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 consists of 3 comprehensive exams, in class quizzes , 14 homework assignments (1 is extra credit), 10 laboratory exercises, and a Final Project.

EXAM 1	150 points	150 points total
EXAM 2	150 points	150 points total
EXAM 3	150 points	150 points total
Quizzes	100 points	100 points total
14 Homework Assignments	Points vary	250 points total
10 Laboratory Exercises	15 points each	150 points total
Final Project	50	50 points total
TOTAL		1000 points

Lab and Homework assignments are listed in the schedule at the end of this syllabus. The exact due date for each Lab and Homework can be found on Blackboard. Scheduling of computer time outside of regular lab time is the student's responsibility. Lab/ Homework assignments may be turned in up to 24 hours late for 80% credit; no credit will be given after 24 hours without documented reason.

Exams 1, 2 and 3 consist of both a written exam (80%) and a lab exam (20%). There are **NO** makeup 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.

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 both on line and face-to-face. For online 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 November 17, 2011. 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 visit <http://irt.austincc.edu/blackboard/stlogin.html> For ACCmail please visit the following site: <http://www.austincc.edu/google/>. A brief orientation will be provided during the first class laboratory period(s).

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/>.

**Fundamentals of Programming
Course Schedule
Fall 2011**

Week Num	Date	Topic	Reading Assignment	Lab/ Homework Assignment (see Blackboard for due date)
1	8/23	Course Introduction/ Student Info Sheet Overview of a Computer System		
	8/25	Chapter 1: An Introduction to Programming	Zak, pgs 1-15	HW – Chap 1
		Lab: Orientation		
2	9/30	Chapter 2: Beginning the Problem Solving Process	Zak, pgs 22-46	
	9/1	Chapter 3: Variables and Constants	Zak, pgs 51-72	HW – Chap 2
		Lab: Problem Solving - Concepts	IPO Charts	
3	9/6	Chapter 3: (Continued)		
	9/8	Chapter 4: Completing the Problem Solving Process	Zak, pgs 77-108	HW – Chap 3
		Lab: Introduction to Dev C++ Compiler	Demonstration	
4	9/13	Chapter 4 (continued)		Lab 4-2
	9/15	Review for EXAM I	(Chapters 1 - 4)	HW – Chap 4
5	9/20	EXAM 1		Lab 5-2
	9/22	Chapter 5: The Selection Structure	Zak, pgs 119-154	HW – Chap 5
6	9/27	Chapter 5 (continued)		Lab 6-2
	9/29	Chapter 6: More on the Selection Structure	Zak, pgs 163-199	HW – Chap 6
7	10/4	Chapter 7: The Repetition Structure	Zak, pgs 213-254	Lab 7-2
	10/6	Chapter 8: More on the Repetition Structure	Zak, pgs 264-300	HW – Chap 7
8	10/11	Chapter 8 (continued)		HW – Chap 8
	10/13	EXAM 2	(Chapters 5 - 8)	(Extra Credit)

9	10/18	Chapter 9: Value-Returning Functions	Zak, pgs 308-362	Lab 9-2
	10/20	Chapter 9 (continued)		HW – Chap 9
10	10/25	Chapter 10: Void Functions	Zak, pgs 370-418	Lab 10-2
	10/27	Chapter 10 (continued)		HW – Chap 10
11	11/1	Chapter 11: One-Dimensional Arrays	Zak, pgs 419-477	Lab 11-2
	11/3	Chapter 11 (continued)		HW – Chap 11
12	11/8	Chapter 12: Two-Dimensional Arrays	Zak, pgs 486-523	Lab 12-2
	11/10	Chapter 12 (continued)		HW – Chap 12
13	11/15	Chapter 13: String Manipulation	Zak, pgs 524-581	Lab 13-2
	11/17	Chapter 13 (continued)		HW – Chap 13
14	11/22	Chapter 14: Sequential Access Files	Zak, pgs 582-625	Lab 14-2
	11/24	Thanksgiving Holiday – NO CLASS		HW – Chap 14
15	11/29	Course Review	Chapters 1 - 13	
	12/1	Work on Final Project		
16	12/6 12/8	EXAM 3 Submit Final Project		

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, **this includes the lab assignments!!**