

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

Course Syllabus: COSC 1315 – Fundamentals of Programming Synonym 44269 – Spring 2012
---

**Lecture:** NRG4 4211 Tuesday, Thursday 10:05 am – 11:25 am  
**Lab:** NRG4 4230 Tuesday 9:00 am – 9:55 am

**Instructor:** William A. (Bill) Tucker

**Office Telephone:** 223-4923

**Fax:** 223-4202

**Office:** Northridge Campus 4243

**Office Hours:** Monday 8:00am – 8:50am, 11:00am – 11:45am  
Tuesday 8:00am – 8:50am  
Wednesday 8:00am – 8:50am, 11:00am – 11:45am  
Thursday 8:00am – 8:50am  
Friday 8:00am – 11:30am by appointment

**E-mail:** wtucker@austincc.edu

**Home page:** <http://www.austincc.edu/wtucker/>

**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++*, 6<sup>th</sup> 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 75% lecture and 25% laboratory. 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 is an entry level programming course designed to teach students the basic concepts of computer programming. The course will include designing, coding, debugging, testing, and documenting programs using a high level programming language. This course is included in several degree plans including:

- Associate of Applied Science – Computer Programming
- Associate of Applied Science – Web Programming
- Associate of Applied Science – Local Area Network Administration
- Associate of Applied Science – User and Computer Support
- Associate of Applied Science – Game and Visualization Programming
- Associate of Applied Science – Information Technology Application

- Associate of Applied Science – Security Administration
- Associate of Applied Science – Software Testing

**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 (Secretary’s Commission on Achieving Necessary Skills):**

Refer to <http://www.austincc.edu/cit/courses/scans.pdf> for a complete definition and explanation of SCANS. The following list summarizes the SCANS competencies addressed in this particular course:

<p><b>RESOURCES</b> 1.1 Manages Time</p>	<p><b>INTERPERSONAL</b></p>	<p><b>INFORMATION</b> 3.1 Acquires and Evaluates Information 3.2 Organizes and Maintains Information 3.3 Uses Computers to Process Information</p>	<p><b>SYSTEMS</b> 4.1 Understands Systems 4.2 Monitors and Corrects Performance 4.3 Improves and Designs Systems</p>
<p><b>TECHNOLOGY</b> 5.1 Selects Technology 5.2 Applies Technology to Task 5.3 Maintains and Troubleshoots Technology</p>	<p><b>BASIC SKILLS</b> 6.1 Reading 6.2 Writing 6.3 Arithmetic 6.4 Mathematics 6.5 Listening</p>	<p><b>THINKING SKILLS</b> 7.1 Creative Thinking 7.2 Decision Making 7.3 Problem Solving 7.4 Mental Visualization 7.5 Knowing How to Learn 7.6 Reasoning</p>	<p><b>PERSONAL SKILLS</b> 8.1 Responsibility 8.2 Self-Esteem 8.3 Sociability 8.4 Self-Management 8.5 Integrity/Honesty</p>

### 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 (62.5%), 12 homework assignments (22.5%), and 10 laboratory exercises (15%).

EXAM 1	200 points	200 points total
EXAM 2	200 points	200 points total
EXAM 3 / Departmental Exam	225 points	225 points total
14 Homework Assignments	Points vary	225 points total
10 Laboratory Exercises	15 points each	150 points total
<b>TOTAL</b>		<b>1000 points</b>

**ALL** homework assignments are due *at the start of class on the date(s) indicated in the schedule*. Homework assignments may be turned in up to one week after the due date with a late penalty of 20%. Lab assignments are due no later than the start of the next scheduled lab period. 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. The last date to submit assignments for consideration this semester is May 4, 2012.

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 or the departmental exam.

## **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 [Student Policies Handbook](#).

**The penalty assessed will be in accordance with the current policy** (<http://www.austincc.edu/admrule/1.04.006.htm>).

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**

Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class.

It is the student's responsibility to complete a Withdrawal Form in the Admissions Office if they wish to withdraw from this class. The last date to

withdraw for this semester is April 23, 2012. 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.

Students who enroll for the third or subsequent time in a course taken since Fall 2002 are charged a higher tuition rate. State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC College Catalog.

### **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 Policies](#)).

### **Communication**

The ACC online Blackboard system <http://acconline.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 and ACCmail please visit the following sites: <http://irt.austincc.edu/blackboard/StudentSupport.php> and <http://www.austincc.edu/google/>.

### **Safety Statement**

Each student is expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Emergency posters and Campus Safety Plans are posted in each classroom. Additional information about safety procedures and how to sign up to be notified in case of an emergency can be found at <http://www.austincc.edu/emergency/>.

Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be immediately dismissed from the day's activity, may be withdrawn from the class, and / or barred from attending future activities.

### **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.

## Fundamentals of Programming Course Schedule

Week Num	Date	Lec/ Lab	Topic	Assignment
1	1/17	Lec	Course Introduction Overview of a Computer System	Zak, pgs 1-15
	1/19		Chapter 1: An Introduction to Programming	
	1/17	Lab	Lab Orientation	
2	1/24	Lec	Chapter 2: Beginning the Problem Solving Process	Zak, pgs 22-46 <b>HW – Chap 1</b>
	1/26		Chapter 3: Variables and Constants	Zak, pgs 51-72
	1/24	Lab	IPO Charts	
3	1/31	Lec	Chapter 3: (Continued)	<b>HW – Chap 2</b> Zak, pgs 77-108
	2/2		Chapter 4: Completing the Problem Solving Process	
	1/31	Lab	Introduction to Dev C++ Compiler	Demonstration
4	2/7	Lec	Chapter 4 (continued)	Zak, pgs 153-201 <b>HW – Chap 3</b> (Chapters 1 - 4)
	2/9		Review for EXAM I	
	2/7	Lab		<b>Lab 4-2</b>
5	2/14	Lec	<b>EXAM 1</b>	<b>HW – Chap 4</b> Zak, pgs 119-154
	2/15		Chapter 5: The Selection Structure	
	2/14	Lab	<b>EXAM 1</b>	
6	2/21	Lec	Chapter 5 (continued)	<b>HW – Chap 5</b> Zak, pgs 163-199
	2/23		Chapter 6: More on the Selection Structure	
	2/21	Lab		<b>Lab 5-2</b>
7	2/28	Lec	Chapter 7: The Repetition Structure	Zak, pgs 213-254 <b>HW – Chap 6</b>
	3/1		Chapter 7: (continued)	
	2/28	Lab		<b>Lab 6-2</b>
8	3/6	Lec	Chapter 8: More on the Repetition Structure	Zak, pgs 264-300 <b>HW – Chap 7</b> (Chapters 5 - 8)
	3/8		Review for EXAM 2	
	3/6	Lab		<b>Lab 7-2</b>
<b>SPRING BREAK 3/12/12 – 3/18/12</b>				
9	3/20	Lec	<b>EXAM 2</b>	<b>HW – Chap 8</b> Zak, pgs 308-362
	3/22		Chapter 9: Value-Returning Functions	
	3/20	Lab	<b>EXAM 2</b>	
10	3/27	Lec	Chapter 9 (continued)	<b>HW – Chap 9</b> Zak, pgs 370-405
	3/29		Chapter 10: Void Functions	
	3/27	Lab		<b>Lab 9-2</b>

11	4/3	Lec	Chapter 10 (continued)	Zak, pgs 547-576 <b>HW – Chap 10</b>
	4/5		Chapter 11: One-Dimensional Arrays	Zak, 419-477
	4/3	Lab		<b>Lab 10-2</b>
12	4/10	Lec	Chapter 11 (continued)	Zak, pgs 607-659 <b>HW – Chap 11</b>
	4/12		Chapter 12: Two-Dimensional Arrays	
	4/10	Lab		<b>Lab 11-2</b>
13	4/17	Lec	Chapter 13: String Manipulation	Zak, pgs 687-711 <b>HW – Chap 12</b>
	4/19		Chapter 13 (continued)	Zak, pgs 759-772
	4/17	Lab		<b>Lab 12-2</b>
14	4/24	Lec	Chapter 14: Sequential Access Files	<b>HW – Chap 13</b>
	4/26			
	4/25	Lab		<b>Lab 13-2</b>
15	5/1	Lec	Review for Final Exams	<b>HW – Chap 14</b>
	5/3		Review for Final Exams	Chapters 1 - 13
	5/1	Lab		<b>Lab 14-2</b>
16	5/8	Lec	<b>EXAM 3</b>	
	5/10		<b>Departmental EXAM</b>	
	5/8	Lab	<b>EXAM 3</b>	

**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!!**