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AUSTIN COMMUNITY COLLEGE  
DEPARTMENT OF COMPUTER STUDIES AND ADVANCED TECHNOLOGY

Course Syllabus: COSC 1315, Fundamentals of Programming Summer 2012 -- Synonym 05426, Section 005
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Lecture: RGC 111 Monday-Thursday 9:00 -- 10:30 am

Lab: RGC 116 Monday-Thursday 10:40 -- 11:40 am

Instructor: Sarah Finney

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Office hours: Monday - Thursday 11:45 am - 1 pm RGC 114  
(or by appointment)

**Course description:** An introduction to computer concepts, logic, and computer programming. Includes design, coding, debugging, testing, and documenting programs using a high-level programming language. The emphasis of the course will be on design and concepts more than on extensive language syntax.

**Pre-requisite:** B--Reading and Math (TSI complete in math and reading)

**Required texts:**

- *Starting Out with Programming Logic and Design*, Third edition, Tony Gaddis, Pearson, 2013. (ISBN-10: 0-13-280545-6, ISBN-13: 978-0-13-280545-2)
- *C++ Backpack Reference Guide*, Peter J. DePasquale, Pearson 2006. (ISBN: 0-321-35013-8)

**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 basics of programming. The course will include designing, coding, debugging, testing, and documenting programs using a high-level programming language. This course is intended to be the primary programming course for students whose academic goals require exposure to programming fundamentals. The course is included in several degree plans and certificates, including, in the Computer Information Systems department, the following:

- Associate of Applied Science - Application
- Associate of Applied Science - Local Area Network Administration
- Associate of Applied Science - Security Administration
- Associate of Applied Science - User and Computer Support
- Certificate - User and Computer Support
- Certificate - Local Area Network Administration

**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.

### SCANS Competencies:

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:

<b>RESOURCES</b> 1.1 Manages Time	<b>INTERPERSONAL</b>	<b>INFORMATION</b> 3.1 Acquires and Evaluates Information 3.2 Organizes and Maintains Information 3.3 Uses Computers to Process Information	<b>SYSTEMS</b> 4.1 Understands Systems 4.2 Monitors and Corrects Performance 4.3 Improves and Designs Systems
<b>TECHNOLOGY</b> 5.1 Selects Technology 5.2 Applies Technology 5.3 Maintains and Troubleshoots Technology	<b>BASIC SKILLS</b> 6.1 Reading 6.2 Writing 6.3 Arithmetic 6.4 Mathematics 6.5 Listening	<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	<b>PERSONAL SKILLS</b> 8.1 Responsibility 8.2 Self-Esteem 8.3 Sociability 8.4 Self-Management 8.5 Integrity/Honesty

### Course 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”.

In this course students are allowed to collaborate on homework and lab assignments, but each student is expected to produce the submitted document or source code individually. Two good guidelines are that no notes should be taken away from discussions with other students about assignments, and that students should always be in a position to explain any work they submit. If substantial help is obtained from either teaching staff or another student, this should be documented on the student’s submission. No collaboration is allowed on exams.

The penalty assessed for a violation will be in accordance with the current ACC Student Handbook policy. **For this course, the academic 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 the student’s 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.

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4. To remove an “I”, the student must complete the course by a deadline to be determined when the incomplete is given, which will be no later than two weeks before the end of the following semester. Failure to do so will result in the grade reverting to an “F”.

### **Freedom of Expression Policy**

Faculty and students are expected to respect the views expressed by others.

### **Tutoring**

Free tutoring is provided for this course both on-line and face-to-face. For on-line schedules and details please refer to <http://www.austincc.edu/cit> (and click “Tutoring Schedule”).

### **Attendance/Withdrawal**

Students are expected to attend classes and will be held responsible for all material covered in class. Regular attendance helps ensure satisfactory progress 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 last date to withdraw for this semester is June 28, 2012 . The instructor may withdraw a student for sufficient lack of progress, but it is not the responsibility of the instructor to withdraw the students from the class.

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 toward 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 or her student volume in the Computer Studies Labs may be viewed by his or her 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.)

### **Communications**

The ACC online Blackboard system and ACCmail accounts will be used to communicate during this semester. All assignments will be posted and submitted on the Blackboard system, and announcements will be sent via email. Students are expected to check their email regularly (roughly once a day) and to submit work as instructed using the Blackboard system. Failure to do either of these things may negatively impact the student’s grade. An orientation on both Blackboard and ACC email will be provided during the first class lab period.

### **Use of Electronic Devices**

The use of cell phones and other electronic devices is 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.

### **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

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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.

**Grade Policy:** Grades will be assigned based both on concepts and practical application. 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 exams, in-class quizzes, and lab assignments. The grade breakdown is as follows:

Midterm (Chapters 1-5)	30%
Final Exam (Chapters 1-8, 10)	30%
Lab Assignments	40%

All assignments are due at the beginning of the scheduled class time on the due date, unless otherwise specified. Assignments must be submitted either online via Blackboard or as a hard copy, as specified in each assignment.

Assignments submitted late but by the late date (typically the start of class on the Monday following the due date, unless otherwise marked) will receive a 20% penalty, and assignments submitted after that will receive no credit. Grading feedback may not be provided promptly on work submitted late. Each student has **two free late passes**, each of which allows one assignment to be submitted by the late date with no penalty. Extenuating circumstances requiring additional accommodation must be discussed with the instructor.

If a student is not able to complete a lab assignment within the scheduled lab time, he or she is expected to complete that assignment outside of class time either in a CIS lab or using a personal computer with the appropriate tools installed. Scheduling of computer time outside of regular lab time is the student's responsibility and an inability to find an available computer will not result in a waived late penalty.

Both exams will be given during both lecture and lab periods on the dates given in the course schedule. No makeup exams will be given for the first exam; the grade for a missed exam will be replaced by the student's grade on the cumulative final exam. A makeup exam on the final will be given only under exceptional circumstances.

## Course Schedule:

Week	Date	Lec/ Lab	Topic(s)	Reading	Assign. Due
1	May 29	Lec Lab	Introduction; Input, output, and variables <b>LAB1:</b> Orientation	Chapter 1, 2.1-2.2	
	May 30	Lec Lab	Data types, variables, calculations <b>LAB2:</b> Data types and variables	2.3-2.8	LAB1
	May 31	Lec Lab	Modules, scope and parameters <b>LAB3:</b> Calculations and modules	3.1-3.5	LAB2
2	June 4	Lec Lab	Selection and comparison operators <b>LAB4:</b> Simple selection	4.1-4.3	LAB3
	June 5	Lec Lab	Nested selection <b>LAB5:</b> More complex selection	4.4	LAB4
	June 6	Lec Lab	Case structure, logical operators and Booleans LAB5 cont'd	4.5-4.7	
	June 7	Lec Lab	Condition-controlled loops <b>LAB6:</b> Simple repetition	5.1-5.2	LAB5
3	June 11	Lec Lab	Counter-controlled loops and accumulators LAB6 cont'd	5.3-5.4	
	June 12	Lec Lab	Sentinel loops <b>LAB7:</b> More complex repetition	5.5	LAB6
	June 13	Lec Lab	Nested loops LAB7 cont'd	5.6	
	June 14	Lec Lab	Midterm exam review LAB7 cont'd	Chapters 1-5	LAB7 (end of lab)
4	June 18	Lec Lab	<b>Midterm exam</b> <b>Midterm lab exam</b>		
	June 19	Lec Lab	Using functions <b>LAB8:</b> Using functions	6.1	
	June 20	Lec Lab	Writing functions <b>LAB9:</b> Writing and using functions	6.2 (3.3-3.4)	LAB8
	June 21	Lec Lab	Library functions LAB9 cont'd	6.3	
5	June 25	Lec Lab	Input validation, intro to arrays <b>LAB10:</b> Arrays	Chapter 7, 8.1	LAB9
	June 26	Lec Lab	Searching arrays LAB10 cont'd	8.2	
	June 27	Lec Lab	Processing arrays <b>LAB11:</b> More on arrays	8.3	LAB10
	June 28	Lec Lab	Parallel and two-dimensional arrays LAB11 cont'd	8.4-8.5	
6	July 2	Lec Lab	Files <b>LAB12:</b> Putting it all together	Chapter 10	LAB11
	July 3	Lec Lab	Final exam review LAB12 cont'd	Chapters 1-8, 10	LAB12 (end of lab)
	July 4		<b>No Class:</b> Independence Day		
	July 5	Lec Lab	<b>Final exam</b> <b>Final lab exam</b>		

**Note: This schedule may change as required. Due dates given on assignment handouts will reflect the most up-to-date schedule.**

The room scheduling for this section is such that more time is scheduled in the lab room than is really appropriate for this class, so some lab time will be spent continuing lecture activities.