Austin Community College
Department of Computer Studies and Advanced Technology

Course Syllabus: COSC 1336, Programming Fundamentals I
Fall 2012 -- Synonym 15850, Section 005

Lecture:	RGC 116	Tuesday, Thursday	2:30 -- 3:50 am
Lab:	RGC 116	Tuesday	4:00 -- 4:55 pm

Instructor: Sarah Finney
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Office: 3251 (in the old gym building behind the main building)

Office hours:	Monday	1:00 - 2:00 pm	RGC 3251
		5:00 - 6:00 pm	RGC 114
	Tuesday	5:00 - 6:00 pm	RGC 114
	Wednesday	5:00 - 6:00 pm	RGC 114
	Thursday	4:00 - 5:00 pm	RGC 116
	(or by appointment)		

Course description: Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy.

Pre-requisite: This course requires the same math skills necessary for College Algebra. Students should either have taken or be currently enrolled in College Algebra or a course that requires College Algebra. TSI complete in reading.

Required text: *Starting out with Python*, Second edition, Tony Gaddis, Addison Wesley, 2012. (ISBN-10: 0-13-257637-6, ISBN-13: 978-0-13-257637-6)

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 intended to prepare students for a programming-oriented academic path. The course is included in several degree plans, including:

- Associate of Applied Science - Computer Programming
- Associate of Applied Science - Web Programming
- Associate of Applied Science - Game and Visualization Programming
- Associate of Applied Science - Information Technology Application
- Associate of Applied Science - Software Testing
- Associate of Science - Computer Science

Course Objectives / Learning Outcomes:

1. Demonstrate problem solving skills by developing and implementing algorithms to solve problems.
2. Derive problem specifications from problem statements.
3. Develop algorithms using modular design principles to meet stated specifications.

4. Create code to provide a solution to problem statements ranging from simple to complex.
5. Test and debug programs and program modules to meet specifications and standards.
6. Create programs that contain clear and concise program documentation.
7. Implement programs that use data types and demonstrate an understanding of numbering systems.
8. Incorporate both basic and advanced control structures appropriately into algorithms.
9. Demonstrate an understanding of structured design by implementing programs with functions, including parameter passing and value returning.
10. Implement programs using classes, including strings and files.
11. Implement algorithms using one-dimensional and indexed data structures.
12. Demonstrate an understanding of array searching and sorting algorithms by desk-checking and/or modifying algorithm implementations.
13. Design and implement simple classes.

SCANS (Secretary's Commissionon Achieving Necessary Skills) 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:

Resources	Interpersonal	Information	Systems
1.1 Manages Time	2.3 Serves Clients/Customers	3.1 Acquires and Evaluates Information 3.2 Organizes and Maintains Information 3.3 Uses Computers to Process Information	4.1 Understands Systems 4.2 Monitors and Corrects Performance 4.3 Improves and Designs Systems
Technology	**Basic Skills**	**Thinking Skills**	**Personal Skills**
5.1 Selects Technology 5.2 Applies Technology 5.3 Maintains and Troubleshoots Technology	6.1 Reading 6.2 Writing 6.3 Arithmetic 6.4 Mathematics 6.5 Listening	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	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.
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 www.austincc.edu/cit (and click ''Tutoring Schedule'' in the ''Student Resources'' section).

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 he or she wishes to withdraw from this class. The last date to withdraw for this semester is November 26, 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 the fall of 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 ACC email 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 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, homework assignments and lab assignments. The grade breakdown is as follows:

Exam 1	15%
Exam 2	15%
Final Exam	30%
Homework Assignments	15%
Lab Assignments	25%
Quizzes	Extra credit on exams

All assignments are due at the beginning of the scheduled class time on the due date. Lab assignments must be submitted online via Blackboard. Homework assignments may be submitted either as hard copy or online (also via Blackboard).

Assignments submitted late but by the late deadline (posted on each assignment, but typically one week after the due date) 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.

In-class, closed-book quizzes will be given roughly once a week. These quizzes can earn up to 5% extra credit on the next exam (though no grade higher than 100% can be earned on any exam). The quizzes are intended to verify that the material presented in class has been understood, and are meant be straightforward for students who have attended class and read the relevant portions of the textbook.

All 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 two 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. Out	Assign. Due
	Aug. 28	Lec	Introduction; data storage	Ch. 1	HW1	
1		Lab	**LAB0**: Orientation		LAB0	
	Aug. 30	Lec	Input, output, and variables	2.2-2.3, 2.5-2.6		LAB0
	Sep. 4	Lec	Operators	2.7		
		Lab	**LAB1**: Simple programs		LAB1	
2	Sep. 6	Lec	Design tools and documentation; more on output	2.1, 2.4, 2.8		HW1
	Sep. 11	Lec	Functions	3.1-3.2, 3.4-3.5		LAB1
		Lab	**LAB2**: Calling functions		LAB2	
3	Sep. 13	Lec	Desk-checking functions; scope; function design	3.4, 3.6; 3.3	HW2	
	Sep. 18	Lec	Simple selection statements	4.1-4.3		LAB2
4		Lab	**LAB3**: Simple selection		LAB3	
	Sep. 20	Lec	Logical operators, Boolean variables	4.5-4.6	HW3	HW2
	Sep. 25	Lec	Nested and multiple case selection	4.4		LAB3
5		Lab	**LAB4**: Selection		LAB4	
	Sep. 27	Lec	Review for exam 1	Ch. 1-4		HW3
	Oct. 2	Lec	**Exam 1**			LAB4
6		Lab	**Exam 1 lab**			
	Oct. 4	Lec	Repetition: `while` loops	5.1-5.2	HW4	
	Oct. 9	Lec	Repetition: `for` loops	5.3		
7		Lab	**LAB5**: Simple loops		LAB5	
	Oct. 11	Lec	Loop patterns	5.4-5.6		HW4
	Oct. 16	Lec	Nested loops	5.7		LAB5
8		Lab	**LAB6**: Advanced loops		LAB6	
	Oct. 18	Lec	Value-returning functions	6.1-6.2	HW5	
	Oct. 23	Lec	More functions; modules	6.3-6.4		LAB6
9		Lab	**LAB7**: Value-returning functions		LAB7	
	Oct. 25	Lec	Files	7.1-7.3		HW5
	Oct. 30	Lec	Program design			LAB7
10		Lab	**LAB8**: Files		LAB8	
	Nov. 1	Lec	Review for exam 2	Ch. 1-7		
	Nov. 6	Lec	**Exam 2**			LAB8
11		Lab	**Exam 2 lab**			
	Nov. 8	Lec	Introduction to lists	8.1-8.5	HW6	
	Nov. 13	Lec	More on lists; tuples; dictionaries	8.6-8.7; 8.9; 10.1		
12		Lab	**LAB9**: Lists		LAB9	
	Nov. 15	Lec	Two-dimensional lists	8.8		HW6
	Nov. 20	Lec	More on strings	9.1-9.3	HW7	LAB9
13		Lab	**LAB10**: 2D lists		LAB10	
	Nov. 22		**No Class**: Thanksgiving			
	Nov. 27	Lec	Classes and objects	11.1-11.3	HW8	LAB10, HW7
14		Lab	**LAB11**: Strings; simple classes		LAB11	
	Nov. 29	Lec	More on classes	11.4		
	Dec. 4	Lec	Advanced topic	TBD		LAB11
15		Lab	**LAB12**: Classes		LAB12	
	Dec. 6	Lec	Review for final exam	Ch. 1-9, 11		HW8
	Dec. 11	Lec	**Final exam lab**			LAB12
16		Lab	**Final exam lab**			
	Dec. 13	Lec	**Final exam written**			

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