AUSTIN COMMUNITY COLLEGE  
DEPARTMENT OF COMPUTER STUDIES AND ADVANCED TECHNOLOGY

Course Syllabus: COSC 1315 – Fundamentals of Programming  
Synonym 12396 – Summer 2010

Lecture: RGC1-111   Mon, Tues, Wed, Thur   1:00 pm – 3:00 pm  
Lab: RGC1-112    Tues, Wed, Thur   3:10 pm – 4:00 pm

Instructor: William A. (Bill) Tucker  
Office Telephone: 223-4923  
Fax: 223-4202  
Office: Rio Grande Campus, RGC 113  
Office Hours: Monday 8:15am – 8:45am, 12:30pm – 1:00pm  
                  Tuesday 8:15am – 8:45am, 12:30pm – 1:00pm  
                  Wednesday 8:15am – 8:45am, 12:30pm – 1:00pm  
                  Thursday 8:15am – 8:45am, 12:30pm – 1:00pm

E-mail: wtucker@austincc.edu  
Home page: http://www2.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:  

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 is an entry level programming course designed to teach students the basics of program design, coding and testing. The purpose of the course is to create hierarchy charts, flow charts, pseudocode and create test tables in the whole process of program design. A high level programming language is used to reinforce the concepts learned during design. 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. Demonstrate problem solving skills by developing algorithms to solve problems incorporating the concept of data abstraction in a computer program.
2. Design a simple program using the specifications provided by creating structure charts, modules and pseudocode.
3. Implement a simple program by writing the code, performing unit testing and debugging the program.
4. Incorporate the use of sequential, selection and repetition control structures into a program.
5. Demonstrate an understanding of the design and implementation of functions and the passing of parameters to simplify the solution of large problems and to promote the concept of code reuse.
6. Understand the basic principles and concepts of object-oriented programming.

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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% - 100%</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>80% - 89%</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>70% - 79%</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>60% - 69%</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0% - 59%</td>
<td></td>
</tr>
</tbody>
</table>

Each student’s grade for this course consists of 3 comprehensive exams (45%), a departmental exam (15%), 12 homework assignments (20%), and 10 laboratory exercises (20%).

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAM 1</td>
<td>200</td>
<td>200 points</td>
</tr>
<tr>
<td>EXAM 2</td>
<td>200</td>
<td>200 points</td>
</tr>
<tr>
<td>EXAM 3</td>
<td>250</td>
<td>250 points</td>
</tr>
<tr>
<td>12 Homework Assignments</td>
<td>Points vary</td>
<td>200 points total</td>
</tr>
<tr>
<td>10 Laboratory Exercises</td>
<td>15 points each</td>
<td>150 points total</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>1000 points</strong></td>
</tr>
</tbody>
</table>

**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 August 9, 2010.

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 accessed 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 satisfactorily 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 August 9, 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://acconline.austincc.edu](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 8.0 and ACCmail please visit the following sites: [http://irt.austincc.edu/blackboard/stlogin.html](http://irt.austincc.edu/blackboard/stlogin.html) [http://www.austincc.edu/google/](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://acconline.austincc.edu](http://acconline.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/](http://www.austincc.edu/google/).
# Fundamentals of Programming
## Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture</th>
<th>Homework Assignment</th>
<th>Laboratory Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7/8</td>
<td>Course Introduction&lt;br&gt;Overview of a Personal Computer System&lt;br&gt;Chapter 1: An Introduction to Programming</td>
<td></td>
<td>Lab Orientation</td>
</tr>
<tr>
<td>2</td>
<td>7/12</td>
<td>Chapter 2: Beginning the Problem Solving Process</td>
<td>HW – Chap 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7/13</td>
<td>Chapter 3: Variables and Constants</td>
<td>HW – Chap 2</td>
<td>Dev C++ Compiler</td>
</tr>
<tr>
<td></td>
<td>7/14</td>
<td>Chapter 4: Completing the Problem Solving Process</td>
<td>HW – Chap 3</td>
<td>Lab 4-2</td>
</tr>
<tr>
<td></td>
<td>7/15</td>
<td>Review EXAM 1</td>
<td>HW – Chap 4</td>
<td>LAB EXAM 1</td>
</tr>
<tr>
<td>3</td>
<td>7/19</td>
<td>EXAM 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7/20</td>
<td>Chapter 5: The Selection Structure</td>
<td>Lab 5-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7/21</td>
<td>Chapter 6: More on the Selection Structure</td>
<td>HW – Chap 5</td>
<td>Help session</td>
</tr>
<tr>
<td></td>
<td>7/22</td>
<td></td>
<td></td>
<td>Lab 6-2</td>
</tr>
<tr>
<td>4</td>
<td>7/26</td>
<td>Chapter 7: The Repetition Structure</td>
<td>HW – Chap 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7/27</td>
<td></td>
<td></td>
<td>Lab 7-2</td>
</tr>
<tr>
<td></td>
<td>7/28</td>
<td>Chapter 8: More on the Repetition Structure</td>
<td>HW – Chap 7</td>
<td>Help session</td>
</tr>
<tr>
<td></td>
<td>7/29</td>
<td>Review EXAM 2</td>
<td></td>
<td>LAB EXAM 2</td>
</tr>
<tr>
<td>5</td>
<td>8/2</td>
<td>EXAM 2: Chapters 3, 4, 5, 6</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>8/3</td>
<td>Chapter 9: Value-Returning Functions</td>
<td>Lab 9-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8/4</td>
<td>Chapter 10: Void Functions</td>
<td>HW – Chap 9</td>
<td>Lab 10-2</td>
</tr>
<tr>
<td></td>
<td>8/5</td>
<td>Chapter 11: One Dimensional Arrays</td>
<td>HW – Chap 10</td>
<td>Lab 11-2</td>
</tr>
<tr>
<td>6</td>
<td>8/9</td>
<td>Chapter 12: Two Dimensional Arrays</td>
<td>HW – Chap 11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8/10</td>
<td>Chapter 13: String Manipulation</td>
<td>HW – Chap 12</td>
<td>Lab 12-2</td>
</tr>
<tr>
<td></td>
<td>8/11</td>
<td>Review for Final Exam</td>
<td>HW – Chap 13</td>
<td>Lab 13-2</td>
</tr>
<tr>
<td></td>
<td>8/12</td>
<td>EXAM 3</td>
<td></td>
<td>LAB EXAM 3</td>
</tr>
</tbody>
</table>

**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 laboratory assignments!!**