

**ITEC 109: Introduction to Problem Solving and Programming
Fall 2014 Syllabus**

Instructor: Dr. Art Carter (aecarter@radford.edu) (www.radford.edu/aecarter)
Office: Davis B-149 (831-5238)
Office Hours: Mon 2:00-3:00
 Tues 9:30-11:00
 Thur 9:30-11:00

Texts: Starting out with Visual C# 2012, by Tony Gaddis

Tentative Schedule:

Week 1, day 1	Intro to course		Chapter
Week 1, day 2	Intro to IDE, objects and properties		1
Week 2, day 1	Review (Objects, properties), labels, event handlers, dot operator and assignment operator, forecolor, backcolor, naming objects	Lab 1	2.1-2.4
Week 2, day 2	Labels, textbox, checkboxes, additional properties (enable, visible), assigning labels new values, comments	Lab 2	2.5-2.6,2.8
Week 3, day 1	Variables (declaring and data type String), Concatenation, Methods (specifically this.Close()).	Lab 3	3.1-3.2, 2.9
Week 3, day 2	Variables (numeric data types), .parse method, .ToString method	Lab4	3.3, 3.5, 3.6
Week 4, day 1	Formatting, methods and parameters, order of operations, Math class (Pow and Sqrt methods), integer division, casting and scope (field level versus local)	Lab 5	3.4, 3.9, 3.10
Week 4, day 2	Discussed try-catch (though I don't usually test or require for assignments)	Finish lab 5 and assign HW 1	
Week 5, day1	Boolean expressions, relational operators, if statements	Lab 6	4.1
Week 5, day 2	Else, Else if, nested if	Lab 7	4.2, 4.3
Week 6, day 1	AND, OR, checkboxes and radiobuttons	Lab 8	4.4, 4.9
Week 6, day 2	Switch statements, assign hw2	Lab 9	4.10
Week 7, day 1	Finish lab 9 and work on hw 2		
Week 7, day 2	Exam 1		
Week 8, day 1	Indexes, Listboxes: Add, RemoveAt, Clear, Instert	Lab 10	4.11, 5.1
Week 8, day 2	FOR loops, listbox.Items[], ++ and -- operators	Lab 11	5.3, 5.4
Week 9, day 1	Cover concept of non-GUI object; Do loop; creating objects with NEW, Random object and .Next() method	Lab 12	5.8
Week 9, day 2	While loops (though lab doesn't require that type). Pre-test/post-test loop concept	Lab 13	5.2, 5.5
Week 10, day 1	Methods and method call with no parameters	Lab 14	6.1, 6.2
Week 10, day 2	Methods and method calls with parameters, returning a value	Lab 15	6.3, 6.5
Week 11, day 1	Homework 3 discus and work time in class	Assign hw 3	

Week 11, day 2	Arrays – integer type	Lab 16	7.1, 7.2
Week 12, day 1	Parallel arrays, string data type arrays	Lab 17	
Week 12, day 2	2-D arrays	Lab 18	7.7
Week 13, day 1	Finish labs day		
Week 13, day 2	Test 2		
Week 14, day 1	Classes and Objects, constructors	Lab 19	9.1, 9.2
Week 14, day 2	Finish lab 19, answer questions for exam		

Grading

Quizzes	10%
Labs	20%
Homework Assignments	20%
Test 1	15%
Test 2	15%
Final Examination (cumulative)	20%

Attendance: If you miss a lab you get a zero for the lab. I will drop your lowest two labs in case you miss one because you are sick or out of town.

Honor Code: Write your own code. If you get your code from someone else or if you share your code with someone else you are violating the honor code. If you do a homework assignment together with someone else that is also a violation of the honor code (unless I specifically tell you to work with a partner). I have software that checks for code collaboration. I will file charges if you are cheating so don't do it. It is not worth it.

Students with Disabilities: If you are seeking academic accommodations under the Americans with Disabilities Act at Radford University, you are required to register with the Disability Resource Office (DRO). To receive academic accommodations for this class, please submit your documentation to the DRO in the lower level of Tyler Hall Suites 54-69, by fax to 540-831-6525, by email to dro@radford.edu. After submitting documentation to our office, you will set up an interview with a Disability Services Specialist to discuss accommodations. You will be notified via email once your accommodation package is complete and ready to be picked up. Once you have picked up your accommodation package, you will need to meet with each course professor during their office hours to review and discuss your package. For more information and/or for documentation guidelines, visit www.radford.edu/dro or call 540-831-6350.

ITEC 109
PROBLEM SOLVING AND PROGRAMMING
ITEC 109. Problem Solving and Programming

Two hours lecture; two hours laboratory (3).

An introduction to problem solving using programming. Topics include a survey of techniques used in problem solving, methods for representing the solution of a problem as an algorithm and the implementation of an algorithm as a computer program. Students who have received credit for ITEC 120 cannot subsequently receive credit for ITEC 109. ITEC 109 does not meet requirements for the ITEC major.

1. Introduction
 - a. Computer systems
 - b. Problem solving and programming
 - c. Algorithms
 - d. Pseudo code
2. Introduction to Programming
 - a. Problem specification and top-down design
 - b. Stepwise refinement
 - c. Programming environment
 - d. Variables
 - e. Input and output
 - f. Assignment statements and precedence
4. Control structures
 - a. If statements
 - b. While statements
 - c. For Loop Statements
5. Additional concepts
 - a. Procedures without parameters
 - b. Introduction to Object –Oriented topics
 - c. Arrays (optional)

Detailed Description of Conduct of Course

Concepts of programming and algorithm development are covered in the lecture portion of the course. These concepts are reinforced by the programs, typically six to ten in number, that the students write. A significant portion of the lab time is spent in the microcomputer lab. This provides the opportunity for close contact between the student and the instructor while the student is designing and implementing programs. The lab time may also be used to cover specific programming language details.

Student Goals and Objectives of the Course

Students who complete this course should be able to represent the solution of a problem as an algorithm and to implement that algorithm with a well-structured computer program.