Wentworth Institute of Technology
COMP128 – Computer Science I
Fall 2014

Instructor	Nate Derbinsky
Office	Dobbs 140
	Monday 2-4PM, Thursday 2-3PM, and by appointment
Contact	(617) 989-4287
	derbinskyn@wit.edu
	http://derbinsky.info

The instructor reserves the right to make changes to this syllabus as necessary.

1 Description

An introductory course in computerized problem solving using C++. Topics include functions, selection structure, loops, data types, and arrays.

Prerequisite(s): None
Credit Hours: 4

2 Learning Materials

Required Text(s):

- Walter Savitch, *Problem Solving with C++*, 9$^{\text{th}}$ Ed.

The College Bookstore

Location	103 Ward Street
	Boston MA 02115
Telephone	(617) 445-8814

3 Instructional Methodologies

This course will combine traditional lecturing with hands-on exercises to reinforce student learning. In particular, students will utilize programming environments during lectures to work on in-class exercises that aim to teach basic concepts quickly. The same environment will be used during labs and for the programming assignments that make up the bulk of the course.

4   Learning Outcomes

At the completion of each week of this course, the student should be able to:

Week 1	Explain the parts of a computer; Describe programming languages; Write basic programs
Week 2	Explain numeric data types; Employ variables; Describe Input/Output
Week 3	Describe control flow; Employ `if` statements; Analyze expressions
Week 4	Describe Boolean expressions; Employ `else` statements; Analyze control flow
Week 5	Explain `while` loops; Employ `while` loops; Employ predefined functions
Week 6	Explain `for` loops; Employ `for` loops; Create functions
Week 7	Analyze loops; Explain variable scope; Explain global variables
Week 8	Compare call-by-value/reference; Employ call-by-reference parameters; Employ function overloading
Week 9	Explain `switch` statements; Employ `switch` statements; Explain debugging principles
Week 10	Explain character streams; Employ output formatting; Employ file Input/Output procedures
Week 11	Explain arrays; Compare arrays to single variables; Employ arrays
Week 12	Describe string variable types; Compare C-strings to C++ strings
Week 13	Describe classes; Compare classes to standard variables; Create classes

5   Policies

Wentworth Institute of Technology prohibits the use of cellular telephones when class is in session. All cellular phones and pagers must be turned off prior to class.

5.1   Attendance

Students are expected to attend classes regularly, take tests, and submit papers and other work at the times specified by the instructor. Students who are absent repeatedly from class or lab will be evaluated by faculty responsible for the course to ascertain their ability to achieve the course objectives and to continue in the course. Instructors may include, as part of the semester's grades, marks for the quality and quantity of the student's participation in class.

Students are expected to conduct themselves in a professional manner during class. Students disrupting the class in any manner or failing to follow the instructor's directions will be asked to leave. Students asked to leave will not receive credit for that day's attendance.

A student who is absent from class is responsible for obtaining knowledge of what happened in class, especially information about announced tests, papers, or other assignments. At the discretion of the instructor, a student who misses 15% of class may be withdrawn from the course by the instructor. A grade of `WA` will appear on the student's official transcript as a result. Lack of attendance does not constitute withdrawal from a course.

5.2   Grading

There will be 12 assignments during the course of the semester. Assignments will involve writing, testing, and documenting one or more C++ programs. Each assignment will include a detailed description of the problems and expectations for successful completion.

There will also be 4 exams (including the final exam), spread throughout the semester.

Each assignment and exam is worth a fixed number of points:

Assignments:	100 points each	×	12 assignments	=	1200 points
In-class Exams:	300 points each	×	3 exams + best score doubled	=	1200 points
Final Exam:	600 points each	×	1 exam	=	600 points
Semester Total:					3000 points

At the end of the semester, the total number of points earned determines your final grade:

A	2700 - 3000 points
B+	2625 - 2699 points
B	2400 - 2624 points
C+	2325 - 2399 points
C	2100 - 2324 points
D	1800 - 2099 points
F	0 - 1799 points

5.2.1 Wentworth Grading System

Grade	Definition	Weight	Numerical
A	Student learning and accomplishment far exceeds published objectives for the course/test/assignment and student work is distinguished consistently by its high level of competency and/or innovation.	4.00	96 – 100
A-		3.67	92 – 95
B+	Student learning and accomplishment goes beyond what is expected in the published objectives for the course/test/assignment and student work is frequently characterized by its special depth of understanding, development, and/or innovative experimentation.	3.33	88 – 91
B		3.00	84 – 87
B-	Student learning and accomplishment meets all published objectives for the course/test/assignment and the student work demonstrates the expected level of understanding, and application of concepts introduced.	2.67	80 – 83
C+		2.33	76 – 79
C		2.00	72 – 75
C-	Student learning and accomplishment based on the published objectives for the course/test/assignment were met with minimum passing achievement.	1.67	68 – 71
D+		1.33	64 – 67
D		1.00	60 – 63
F	Student learning and accomplishment based on the published objectives for the course/test/assignment were not sufficiently addressed nor met.	0.00	< 60

5.3 Drop/Add

Students may drop and add courses at any time between the start of registration for a given semester and a specific date published in the official Academic Calendar. Dropping and/or adding courses is done online. Courses dropped in this period are removed from the student's record. Courses to be added that require written permission, e.g. closed courses, must be done using a Drop/Add form that is available in the Student Service Center. Non-attendance does not constitute dropping a course. If a student has registered for a course and subsequently withdraws or receives a failing grade in its prerequisite, then the student must drop that course. In some cases, the student will be dropped from that course by the Registrar. However, it is the student's responsibility to make sure that he or she meets the course prerequisites and to drop a course if the student has not successfully completed the prerequisite. The student must see his or her academic advisor or academic department head for schedule revision and to discuss the impact of the failed or withdrawn course on the student's degree status.

5.4 Make-Up

All assignments have a specific due date and time. Submissions will be accepted *up to one day* after the deadline with a 50% penalty. The assignment will be graded and returned as normal, but the grade will be recorded as half of what was earned. For example, an on-time submission might receive a grade of 90 points. The same assignment submitted up to one day after the deadline would receive 45 points ($90*0.5$).

Students who miss scheduled exams will not, as a matter of course, be able to make up those exams. If there is a legitimate reason why a student will not be able to complete an assignment on time or not be present for an exam, then they should contact the instructor beforehand. Under extreme circumstances, as decided on a case-by-case basis by the instructor, students may be allowed to make up assignments or exams without first informing the instructor.

6 Academic Support

The Learning Center (TLC) assists all Wentworth students with academic challenges in the areas of math, science, technical courses specific to majors, and writing. The TLC is a supportive and safe learning environment for students looking to improve or maintain their academic standing. In this student-based learning environment, students can receive individual help with their studies, meet and work in study groups, or go on-line to find resources to assist them in meeting their goals for academic success. It includes tutors in many subjects, online writing assistance and workshops. Make appointments at `http://www.wit.edu/tlc` or through LConnect.

All written work submitted for this course must meet the Standards for English I. Poorly written papers will be returned to you, without a grade, for revision. Students are encouraged to utilize The Learning Center for help polishing their papers.

7 Academic Honesty

"Students at Wentworth are expected to be honest and forthright in their academic endeavors. Academic dishonesty includes cheating, inventing false information or citations, plagiarism, tampering with computers, destroying other people's studio property, or academic misconduct" (Academic Catalog). See your catalogue for a full explanation.

8   Student Accountability

Behavior unbecoming a student is any violation of a published Wentworth policy in an academic environment and/or any behavior that individual faculty or staff determines is unacceptable in his or her classroom, laboratory, or other academic area or function. Behavior unbecoming a student will not be tolerated. Violations of behavioral expectations may be forwarded to the Office of Community Standards for disciplinary action.

Wentworth takes violations of academic dishonesty and misconduct very seriously. Sanctions for such violations include, but are not limited to, a grade of "F", removal from a course, Institute suspension, or Institute expulsion.

9   Disability Services

Any student who thinks s/he may require a disability-related accommodation for this course should contact Disability Services privately to discuss their specific needs. Disability Services coordinates reasonable accommodations for students with documented disabilities. They are located in Watson Hall 003 (the Center for Wellness and Disability Services) and can be contacted at 617-989-4390 or counseling@wit.edu. For more information on acceptable documentation and the Disability Services process, visit the Disability Services website at `http://www.wit.edu/disabilityservices`.

10   College of the Fenway Students

If you are enrolled in this course through COF Cross Registration, notify your course instructor. Please provide her/him with your e-mail address to be sure that you receive course information in a timely way. You should also discuss how to access online applications that might be used in the course.

11   Tentative Schedule

It will benefit you greatly to complete the assigned reading *before* attending the lecture.

Week	Topic	Reading	Notes
1	Introduction to Computation and Programming	1.1 - 1.4	
2	Variables, I/O, Types	2.1 - 2.3	
3	Control Flow, If Conditionals	2.4, 2.5	
4	Boolean Expressions	3.1, 3.2	**Exam 1 (9/26)**
5	Loops, Functions	3.3, 3.4, 4.2, 4.3, 5.1	
6	More Loops, Top-Down Design	4.1	Columbus Day
7	Local Variables	4.5	**Exam 2 (10/20)**
8	Call by Reference, Function Overloading	5.2, 5.3, 4.4, 4.6	
9	More Control Flow, File I/O	6.1 - 6.3	
10	Arrays	7.1, 7.2	Veterans Day
11	Testing and Debugging	5.4, 5.5	**Exam 3 (11/17)**
12	More Arrays	7.3, 8.1, 8.2	Thanksgiving
13	Classes	10.1, 10.2	