

Fall 2007
CSC230 C Programming and Software Tools

Syllabus

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Description	This is a course for students experienced with object-oriented programming (Java) who want to learn a widely used procedural programming language: the C programming language. You will learn and use standard tools for compiling (gcc), debugging (gdb), installing (make), profiling (gprof), controlling revisions (subversion), etc. Programming topics include data types, arithmetic, flow of control, arrays, functions, structs, pointers, bit-level operations, the standard C library, etc.
Goals	<p>Upon completion, you should expect that you will be able to...</p> <ul style="list-style-type: none"> • write small to medium C programs having several separately-compiled modules. • explain what happens to a program during preprocessing, lexical analysis, parsing, code generation, code optimization, linking, and execution. In particular, they will be able to describe the differences in this process between C and Java. • correctly identify errors that occur during preprocessing, compilation, linking, and execution, and will know strategies for avoiding and for debugging errors in each stage. • allocate and deallocate memory in C programs while avoiding memory leaks and dangling pointers. • use the C preprocessor to control tracing of programs, compilation for different systems, and to write macros. • write, debug, and modify programs using library utilities, including, but not limited to assert, the math library, the string library, random number generation, and standard I/O. • use simple command-line tools to design, document, debug, and maintain their programs. • use an automatic packaging tool, such as make or ant, to distribute and maintain software that has multiple compilation units. • use a version control tool, such as cvs or svn (subversion), to track changes and do parallel development of software. • distinguish key elements of the <i>syntax</i> (what's legal), <i>semantics</i> (what does it do), and <i>pragmatics</i> (how is it used) of a programming language.
Prerequisites	CSC 216 (Programming Concepts in Java)
Instructor	<p>Dr. Douglas Reeves, reeves@ncsu.edu, 515-2044</p> <p>My office is 3-264 EB II, on Centennial Campus.</p> <p>I have office hours Mon/Tues/Wed/Thurs from 2:00-3:00pm. If office hours need to be cancelled, I will post a note on our message board, and on my home page.</p> <p>I try to respond within a few hours to email or postings to the class message board. Sometimes it takes me awhile; that means I stacked your email and will get to it as soon as I can.</p> <p>I usually have no problems hanging around after class to answer any questions. Just give me a moment to pick up my stuff and walk outside the classroom, so the next class and instructor can come in. If it helps, we can go to a nearby lab to look at your code or test a program.</p>
Teaching Assistants	<p>Steve McKinney, sjmckinn@ncsu.edu</p> <p>Office: 409-B MRC</p> <p>Office phone: 515-6014</p> <p>Office hours: Monday 11:00am-noon, Tuesdays 3-4pm (note the change), Wednesdays 11:00am-noon</p>

	<p>Chi Sung An, csan@ncsu.edu Office: 203-A, Research II Office phone: 513-2427 Office hours: Thursdays 3:00-4:00pm</p>																						
Lecture Time and Place	Lectures are Monday/Wednesday/Friday at 9:35-10:25am. The lecture room is EB-I, room 1011																						
Course Website	http://courses.ncsu.edu/csc230/lec/001/																						
Text	<i>The C Programming Language, 2nd ed.</i> by Kernighan and Ritchie (required)																						
Homework	Homework is essential in a course like this. Expect to read a chapter a week and to program every week. Homeworks will be electronically submitted using http://submit.ncsu.edu . Hardcopies are not required to be turned in.																						
Late Policy	Late homeworks are not accepted, except for reasons of illness (certification by health care provider required), or family emergency (which hopefully will be rare). In a large class, dealing with the extra paper flow created by late homeworks is just not worth it.																						
Exams	There are four exams (three in class, and a final exam). A study guide will be provided for each exam.																						
Attendance	Attendance in 200-level courses is strongly encouraged .																						
Grading	<p>The grading scale is as follows:</p> <table border="1"> <thead> <tr> <th>Score</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td>97.5-100</td> <td>A+</td> </tr> <tr> <td>92.5-97.4</td> <td>A</td> </tr> <tr> <td>90.0-92.4</td> <td>A-</td> </tr> <tr> <td>87.5-89.9</td> <td>B+</td> </tr> <tr> <td>82.5-87.4</td> <td>B</td> </tr> <tr> <td>80.0-82.4</td> <td>B-</td> </tr> <tr> <td>etc.</td> <td></td> </tr> </tbody> </table> <p>The weighting factors are as follows:</p> <table border="1"> <tbody> <tr> <td>Homeworks and Quizzes</td> <td>40%</td> </tr> <tr> <td>In-Class Exams</td> <td>36%</td> </tr> <tr> <td>Final Exam</td> <td>24%</td> </tr> </tbody> </table> <p>If you feel an assignment has been graded improperly, please start by discussing with the TA who did the grading if possible. If you are not satisfied with the result, write on the assignment or an attached sheet of paper what you want regraded and why, and bring to me for consideration.</p>	Score	Grade	97.5-100	A+	92.5-97.4	A	90.0-92.4	A-	87.5-89.9	B+	82.5-87.4	B	80.0-82.4	B-	etc.		Homeworks and Quizzes	40%	In-Class Exams	36%	Final Exam	24%
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Students with Disabilities	Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Services Office at Suite 1900, Student Health Center, Campus Box 7509, 515-7653. See also the university policy on academic accommodations for students with disabilities .																						
Academic Integrity	See the university policy on academic integrity . A student caught cheating will fail the course and their case will be referred to the university judicial system. Giving / receiving code to/from another student to be submitted for credit, stealing code from another student to be submitted for credit, or copying code from the Internet, are all cheating. Please do not post substantial code that represents solutions to homework problems on the message boards; questions and discussions are fine.																						

Class Evaluations	Schedule: Online class evaluations will be available for students to complete during the last two weeks of class (November 26-December 9). Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will never know how any one student responded to any question.
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[Douglas S. Reeves](#)

[Computer Science Department](#)

[N.C. State University](#)

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