

**Computer Science 215 (Section 1)**  
**Tools and Techniques for Software Development**  
**Fall 2003**  
**Syllabus**

**Class Meeting Times**

TTh 5:00-5:50 Daniel 408

**Instructor**

Dr. Timothy Davis  
437 Edwards Hall  
Phone: 656-0309  
Office Hours: T 2:00-3:00, W 3:30-5:00  
tadavis@cs.clemson.edu  
<http://www.cs.clemson.edu/~tadavis/cs215>

**Textbooks**

Kenneth A. Reek, *Pointers on C*, Addison Wesley, 1998.  
Arnold Robbins, *Unix in a Nutshell (Third Edition)*, O'Reilly, 1999.  
Brian Overland, *C++ in Plain English (Third Edition)*, M&T, 2001.

**Grading**

Grading for this course will be based on labs, projects, a midterm, and a final exam.

|          |     |
|----------|-----|
| Labs     | 20% |
| Projects | 45% |
| Midterm  | 15% |
| Final    | 20% |

Letter grades will be based on a 10-point scale. Plus/minus grades will also be assigned (e.g., 87.0-89.999 B+, 83.0-86.999 B, 80.0-82.999 B-). These ranges may be changed somewhat, but only to your advantage.

**Course Guidelines**

To be successful in this course, you must follow several guidelines, as listed below.

- **Attendance** Attendance is not required, but strongly recommended.
- **Labs** The lab TA will set up guidelines for the lab. If you have a problem with anything related to the labs, see the TA first.
- **Independent Work** You must work on labs and projects independently. Cheating of any kind will not be tolerated and will result in significant penalties. Cheating involves any viewing, copying, or discussion of code, in addition to any other clarifications made during the semester.
- **Class Cancellation** Students are expected to wait for 20 minutes after the beginning of class before leaving if the instructor is late.

## Programming Projects

The programs in this course account for a significant portion of the final grade; therefore, you should spend the majority of your time for this course working on them.

The projects will involve graphics applications in image processing and ray tracing. The ray tracer will be the primary project and will be implemented across three assignments.

Please note the following project guidelines:

- **Source Code** Except for the last program (written in C++), all code must be written in C and must compile on the SunOS systems. A 50% penalty will apply to code that does not compile.
- **Deadlines** Deadlines in this course will be enforced, with penalties applied to work submitted late. Late penalty:  $n$  days late =  $3^n$  points off.
- **Project Submission** Projects will be submitted using the `handin` command.
- **Style** Please follow the coding style guidelines found on the lab homepage.

## Tentative Schedule

| Week  | Topics                                                    | Reading                   |
|-------|-----------------------------------------------------------|---------------------------|
| 8/21  | Introduction/Course Overview                              | Reek Ch. 1-2              |
| 8/26  | C data, statements, ops, and expressions                  | Reek Ch. 3-5              |
| 9/2   | Arrays, strings and pointers in C                         | Reek Ch. 6, 8, 9          |
| 9/9   | Structures and pointers in C ( <b>Project 1 due</b> )     | Reek Ch. 10, 12           |
| 9/16  | C functions                                               | Reek Ch. 7                |
| 9/23  | Memory Management in C                                    | Reek Ch. 11               |
| 9/30  | Catch-up ( <b>Project 2 due</b> )                         |                           |
| 10/7  | Linked lists                                              |                           |
| 10/14 | <b>Midterm (Tuesday 10/14)</b>                            |                           |
| 10/21 | <b>Fall Break (Tuesday 10/21)</b> Bitwise operations      | Reek Ch. 5                |
| 10/28 | File processing in C ( <b>Project 3 due</b> )             |                           |
| 11/4  | Scope and storage classes in C / Software eng.            | Reek Ch. 15               |
| 11/11 | More on I/O in C ( <b>Project 4 due</b> )                 | Reek Ch. 3                |
| 11/18 | Introduction to and classes in C++                        |                           |
| 11/25 | Classes in C++ <b>Thanksgiving (Thursday 11/27)</b>       | Overland, Part II Ch. 1-3 |
| 12/2  | C++ overloading and constructors ( <b>Project 5 due</b> ) | Overland, Part II Ch. 4-5 |
| 12/9  | <b>Final Exam (Tuesday 12/9 6:30-9:30 p.m.)</b>           |                           |