CS 2604 Syllabus and Course Policies*
Data Structures and File Processing
Spring 2004
MWF Sections

Sections: CRN 11483 MWF 10:10am – 11:00am McBryde 126
CRN 11484 MWF 12:20pm – 1:10pm McBryde 126

Instructor: Mr. Robert Capra
Office Hours: MWF 11:00am – 12:10pm McBryde 523
            and by appointment
Email: rcapra3@vt.edu

Teaching Assistants (GTAs): Ranjit Randhawa
                           Ramya Ravichandar

Teaching Assistant Office Hours: Hours to be announced on course web site


Lecture Notes: CS 2604 Course Notes, Spring 2004 Edition
                W D McQuain, ©2001-2004
                (available at A-1 Copies in University Mall,
                also available for download on course web site)

Course Webpage: http://courses.cs.vt.edu/~cs2604/spring04/index.html

Grade Weighting:

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
<th>Tentative Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programming Projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major</td>
<td>20%</td>
<td>See course web site</td>
</tr>
<tr>
<td>Minor</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
<td>See course web site</td>
</tr>
<tr>
<td>In-class pop quizzes</td>
<td>5%</td>
<td>Unannounced</td>
</tr>
<tr>
<td>Midterm test</td>
<td>15%</td>
<td>In-class, Friday, March 5</td>
</tr>
<tr>
<td>Final exam</td>
<td>25%</td>
<td>1:05 – 3:05pm, Tuesday, May 11</td>
</tr>
</tbody>
</table>

* This syllabus and course policies document contains seven numbered sections.
1. Prerequisites

The following are the prerequisites for CS 2604:

- **CS 2704**
- **CS 1206 or 2204 or Engineering equivalent (ECpE 2574)**
  
  CS Majors and Minors must have completed both of these prerequisites with a grade of C or higher (C- is not acceptable). CpE Majors must have completed these prerequisites with a grade of C- or higher.

- **Math 2534**

  There is no grade requirement for Math 2534, other than a passing grade.

- **Note:** Students are expected to have prior proficiency in the C++ programming language, including the design and implementation of object-oriented systems. Students are responsible for having a working knowledge of Unix/Linux.

Any student not meeting these requirements (both prerequisites and grades) and not obtaining written permission from the CS department, must withdraw from the course within the first week of classes. Any student who is subsequently found not to meet these requirements will be subject to an honors violation report on the basis of falsification of qualifications. Neither instructors nor anyone else in the CS department are bound to investigate the records of students to ascertain their prerequisite status; this is the student’s own responsibility.

There will be absolutely NO exceptions to these requirements.

2. Graded Work

Your grade will be based on a midterm test, a final exam, homework assignments, in-class quizzes, and six programming projects (two major and four minor), weighted as shown on the table listed under “Grade Weighting” on the first page.

**Programming Projects**

All the programming projects for this course must be implemented in standard C++.

All major programming assignments submitted are required to compile using Gnu g++ version 3.3.x under Mandrake Linux 9.x, as installed on the computers in the McBryde 124 lab. The requirement of Gnu g++ under Linux is absolute for the major programming assignments. Major programs will only be tested under that environment.

The minor projects may be tested using that environment, or using Visual C++ 6.0 under Windows NT/2000; an announcement will be made during the first week of class about which environment will be used for minor projects.

It is the student’s responsibility to ensure that his/her programs execute correctly in the appropriate environment. Computing facilities are available for use in the Departmental Computing Lab in McBryde 124. Note that there are known (and unknown) compatibility issues with the gcc compiler. If you develop your code using a different compiler, including Visual C++, it is quite likely you will find that your code will not compile under g++. Compliance with the ISO C++ Standard varies widely among older compilers, especially g++ prior to version 3.2 and Visual C++ prior to .NET 2002. Problems you encounter in porting your code from Visual C++ to g++ will not be considered grounds for any extensions, nor for leniency in grading.

Your programs WILL be tested with the environment specified. If your program fails to compile in the specified environment, or exhibits incorrect behavior, substantial deductions, up to and including a grade of zero may be applied.
All the programming projects will be submitted electronically, using the Curator System. See the Curator Project Page (http://www.cs.vt.edu/curator/) for details and the course website for the submission link. Be sure to download and read the Student Guide to the Curator — it contains the answers to most of the questions students have about the Curator System. The Student Guide also contains information about how the Honor Code applies when using the Curator; be sure to read and follow the guidelines given there.

For projects that will be tested in the Linux/gcc environment, the Linux requirement will be strictly enforced. For these assignments, help by the GTAs and instructor will only be provided for code from the Linux/gcc environment.

Test data files will be provided via the CS2604 website.

**Homework**
There will be a number of homework assignments throughout the term, probably six to eight. It is possible, but not guaranteed, that one homework score will be dropped. Homework assignments will also be submitted electronically. Homework assignments submissions must be typeset using a word processor (e.g. Word), LaTeX, Tex, or a text processor resulting in neatly formatted ASCII text. No handwritten work (including scanned documents) will be accepted.

**Quizzes**
There will be a number of in-class quizzes throughout the term. Quizzes will generally be short and based upon class discussions and/or assigned readings. Each student’s two lowest quiz scores will be dropped. Missed quizzes may **not** be made up.

**Tests**
The mid-term exam will be in-class on Friday, March 5, 2004. The final exam is a common time exam, scheduled for 1:05p.m. – 3:05p.m., Tuesday, May 11, 2004.

### 3. Grading Policies

This is in large part a programming course, and programming projects account for 45% of your grade. You are expected to produce programs that are both readable and correct. The Computer Science Departmental Documentation Standards entitled, “Elements of Programming Style”, will be enforced. A copy of these standards is available on the course website at:

http://courses.cs.vt.edu/~cs2604/spring04/Standards.html

One purpose of a data structures course is to teach efficient algorithms and use of appropriate data structures. Another purpose of this course is to exercise your design abilities. It is not sufficient that a program generate the correct answer and be written with good documentation style. Projects will also be graded in part on quality of design and organization and in part on efficiency. You should certainly pay attention when the instructors discuss issues related to “good” and “poor” design choices for the projects and aspects of efficiency. These issues directly affect your grade.

All programming projects will be graded for adherence to good software engineering principles, including documentation, design, conformance to the stated specification, and programming style.

Each project specification will include or refer to explicit guidelines that you will be expected to follow. In particular, you will always be expected to follow the guidelines on the Programming Standards page of the course website.

If the TAs evaluate an auto-graded project, they will grade your submission to the Curator that received the highest score. In the event of a tie for highest, they will grade the **earliest** one. Note that if you make an incomplete submission (e.g., omitting required documentation) and that receives a perfect score, then the TAs will evaluate that incomplete submission. There will be no exceptions to this policy.
Grade Scale
The following grade scale will apply (subject to any curve):

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Will guarantee at least this grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>A-</td>
</tr>
<tr>
<td>80%</td>
<td>B-</td>
</tr>
<tr>
<td>70%</td>
<td>C-</td>
</tr>
<tr>
<td>60%</td>
<td>D-</td>
</tr>
<tr>
<td>Below 60%</td>
<td>F</td>
</tr>
</tbody>
</table>

A grade curve may or may not be employed in this course. The application of a curve is dependent upon class performance on tests, projects and homework. The decision to utilize a curve rests entirely with the course instructors.

Backups
It is your responsibility to maintain up-to-date backup copies of each programming project (that is in addition to the copy you submit). The hard drives of the lab machines are recloned (i.e. erased and the operating system re-installed) periodically, so don't count on leaving a backup there! It is recommended that you keep a copy of all the relevant files for each project on at least two different types of storage media (e.g. floppy disks, CD-ROM, Flash memory card, VT Filebox) in case your original assignment is mislaid or the files are corrupted. Loss of work due to failure of a storage device (e.g. hard drive) is not grounds for an extension on an assignment.

Due Dates and Late Work
Each programming project and homework assignment will have a due date and time and will include instructions for submission. Late submissions will not be given any credit if submitted after graded assignments or solutions have been released.

Homework assignments are due at the date and time specified in the homework assignment. No late homework assignments will be accepted unless an extension has been granted by the instructor in an email to the student and to the GTA in charge of grading that student’s homework.

Programming project assignments are due at the date and time specified in the project specification. Except in the very rare case that an extension is granted, late submissions will incur a per diem (per day) late penalty that will be included in the project specification. This is typically 20% per day.

Plan your time carefully for the programming projects, especially if you will be using computers in the campus labs — you may be competing with other students for computing resources, so don't put things off until the last minute. Note well: delays resulting from machine availability, lab schedules, hardware failures or your failure to maintain a backup of your work do not merit an extension.

Quizzes will not be accepted late.

Requests for Extensions
Any request for an extension must be made, preferably by email, at least 24 hours prior to the due date. Written documentation is required for illness.

Statute of Limitations
Any questions or complaints regarding the grading of an assignment or test must be raised within one week after the score or graded assignment is made available (not when you pick it up).
Absences
If a serious illness prevents you from taking any of the tests, send your instructor an e-mail message, or a friend with a note, describing your condition before the scheduled test. Also, to establish a valid excuse for an illness you must get a note from a physician or the University infirmary. Before missing a test for any reason, you must make every effort to discuss the problem with your instructor before the day of the test. Excuses other than an illness must be reported to your Dean's office so that they can send your instructor a written explanation of the absence. If you need to be away for an official University event, this must be cleared with your instructor in advance. Without a valid excuse, no makeup tests or exam will be given.

4. Getting Help
For general issues about the course, you may get help from the following sources:
- CS 2604 classmates
- CS 2604 Forum online at forum.cs.vt.edu
- CS 2604 TAs
- CS 2604 Instructors
- A listserv may be set up for CS2604

For C++ Language Help, you may get help from:
- CS 2604 Forum
- texts from earlier courses (Deitel, Dale, etc.)
- alt.comp.lang.learn.c-c++
- gnu.gcc.help, gnu.g++.help

Important Note: It is acceptable to discuss with classmates a programming assignment in a general way, i.e., to discuss the nature of the assignment. In other words, you may discuss with your classmates what your program is required to accomplish but not how to achieve that goal using C++. In no way should the individual statements of a program or the steps leading to the solution of the problem be discussed with or shown to anyone except those people cited in the following statement:

Feel free to discuss the homework assignments and your program source code with the teaching assistants assigned to CS 2604, the instructor, or the free tutors provided by UPE.

The discussion of your program source code must be limited to these people. Note that this specifically excludes discussions of your program source code with other students (even if they are not enrolled in CS2604), or with tutors except for those named above. Privately hired tutors are not an exception to this requirement, nor are athletic or other tutors provided by the University.

5. Class Forum
A class forum for CS 2604 can be found at:

https://forum.cs.vt.edu/forum_show.pl

This forum should be available by the end of the first week of classes. The forum will be the source for all official announcements related to the class. Your instructor may announce tests, assignments, or changes to assignments in class, but there is no guarantee or promise that such announcements will be made in class. The class forum is the only official, reliable source for announcements, changes, etc. from the instructor. If something the instructor says in class conflicts with information posted by the instructor on this forum, then the information posted on by the instructor on the forum takes precedence. Verbal instructions are easily mis-interpreted, nor do they leave a paper trail. The excuse “my instructor/GTA said something else” will not be accepted.

When reading posts to the forum, be sure that the post applies to your section. There may be different information or instructions posted for different sections.
It is the responsibility of every student to check the forum daily.

6. Honor Code

An exhaustive list of Honor Code violations would be impossible to present here, but among other things, each of the following is a flagrant violation of the Virginia Tech Honor Code, and violations will be dealt with severely (Honor Court charges will be filed):

- Working with another student to derive a common program or solution to a problem. There are no group programming projects in this course.
- Discussing the details required to solve a programming assignment. You may not share solutions.
- Copying source code (programs) in whole or in part from someone else.
- Copying files from another student's disk even though they might be unprotected.
- Editing (computer generated) output to achieve apparently correct results.
- Taking another person's printout from a lab printer, remote rprint printer, trash can, etc.

As stated in the “Getting Help” section of this document, it is acceptable to discuss with classmates a programming assignment in a general way, i.e., to discuss with your classmates what your program is required to accomplish, but not how to achieve that goal using C++.

If you have any question as to how the Honor Code applies to this class, remember that:

- Any work done in this class must be done on an individual basis.
- Credit will be given only for work done entirely on an individual basis.
- Do not make any assumptions as to who can provide help on a programming assignment.
- Always give credit for work that is not entirely your own (e.g., parts of programs or homework answers found in a book).
- Evidence indicating the violation of the policy stated above will be turned in to the Honor Court.
- It is much easier to explain a poor grade to parents or a potential employer than to explain an Honor Court conviction.

In addition, the Honor Code statement included in the Student Guide to the Curator is in force for this class.

The Honor Code will be strictly enforced in this course. All assignments submitted shall be considered pledged graded work, unless otherwise noted. All aspects of your work will be covered by the Honor System. Honesty in your academic work will develop into professional integrity. The faculty and students of Virginia Tech will not tolerate any form of academic dishonesty.

7. Special Accommodations

If any student needs special accommodations because of a disability, please contact the instructor during the first week of classes.