Course Notes

Class Meetings This class will meet from 12:00 PM to 1:15 PM in PKI 260\(^1\) each Tuesday and Thursday from January 12 through April 28, with the exception of Thursday, February 18.

Instructor The instructor for this class is Professor Stanley Wileman. His office is in PKI 281E. His telephone number is 402-554-3583 (voice mail is never listened to or answered), and the department’s telephone number is 402-554-2834. Electronic mail for the instructor should be sent only to stanw@unomaha.edu; please use a subject that identifies the course (CSCI 4620). The e-mail address on loki.ist.unomaha.edu (the system to be used for programming assignments) should not be used. Scheduled office hours are 3:00 PM to 4:00 PM each Tuesday and Thursday on which the class meets. Other office hours are available by appointment. It is strongly recommended that you bookmark the instructor’s web site (see below) and regularly check for any exceptions to this schedule or other course information.

Prerequisites This course assumes students have a good understanding of data structures and computer organization. A strong background in program development using a contemporary programming language like C, C++, or Java is also expected.

Course Organization The course will cover much of the material in chapter 1-10 and 17-20 of the textbook (see below). The classroom presentations are frequently accompanied by Power Point slide presentations. These may be modified as the semester progresses, and the latest version of each will be made available in PDF on the class web page (see below). There are also related reading assignments in the textbook, a list of which is provided in a separate document.

Class Meeting Schedule The class meeting schedule, indicating the material to be covered, dates of quizzes, assignments, and the final examination appears on the class web site (see below). It will be updated as necessary to reflect schedule changes.

Textbook The textbook for this class is Computer Graphics with OpenGL (fourth edition) by Donald Hearn and M. Pauline Baker, and Warren R. Carithers (Pearson/Prentice-Hall publishers, copyright 2011, ISBN 0-13-605358-0). Not all of the material in the text will be covered in the class. Additional material will be provided through the class web site. Students are responsible for reading all of the material identified in the class reading list, even though some of it will not be covered in lectures; quizzes and the final examination may cover this material.

Web Pages The instructor’s home web page is at cs2.ist.unomaha.edu/~stanw. The page at cs2.ist.unomaha.edu/~stanw/161/csci4620/index.html is the primary class web page. You will find it convenient to bookmark this in your browser for easy access. The pages should be checked regularly for announcements and other materials. The university’s Blackboard site for the class will be used only to communicate grades. The class web pages will have all other course materials.

\(^1\) The class originally was scheduled in PKI 161 but was changed on the second day of class.
Grading Grades will be based on multiple components:

- Several (number to be determined) written homework problem sets (25 percent)
- Three programming assignments (15 percent each, 45 percent total)
- A midterm examination (10 percent)
- A final examination (20 percent)

Graduate students will be required to write a short research paper on a topic to be approved by the instructor; the paper will add an additional 20 percent to the total weight, so the total possible is 120 percent.

The final letter grade will be determined from the numeric grade using the following table, or one that is slightly more generous, as the breakpoints between the different letter grades may be lowered, based largely on overall class performance.

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<th>97 ≤ grade ≤ 100</th>
<th>A+</th>
<th>77 ≤ grade &lt; 80</th>
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<td>93 ≤ grade &lt; 97</td>
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<td>73 ≤ grade &lt; 77</td>
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<td>70 ≤ grade &lt; 73</td>
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<td>87 ≤ grade &lt; 90</td>
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<td>67 ≤ grade &lt; 70</td>
<td>D+</td>
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<tr>
<td>83 ≤ grade &lt; 87</td>
<td>B</td>
<td>63 ≤ grade &lt; 67</td>
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Programming Assignments Programming assignments for the class will vary significantly, but each will require developing a program using OpenGL, most using the GLUT toolkit. Modern MS Windows systems include an OpenGL implementation, but the GLUT toolkit must be added to the system. Details will be provided with each assignment. The languages acceptable for programming assignments are C, C++, Java, and possibly others (depending on the robustness of the bindings to the OpenGL API). Assignments will be submitted by submitting a machine-readable copy of the file (or files) containing the source code and a makefile to be used to create the executable version of the program. Details on the acceptable languages and the OpenGL API will be made available on the class web pages.

One or more programming assignments will likely allow for solutions to be developed by groups of students (very likely no more than two or three). Unless an assignment specifically indicates that a group effort is acceptable, solutions must represent individual effort with no collaboration with other individuals, whether they be students in the class or not. If unacceptable collaboration is identified in these assignments, the department’s policy on plagiarism will be used (see below).

The programming assignments are not trivial, but neither are they incredibly complex. You will need to spend a reasonable amount of time to understand the problem, the OpenGL features to be used, and the algorithms needed to produce an acceptable solution. As a result, you should not delay beginning work on your solution after the assignment is made. Due dates will be given for each assignment. While these may be adjusted somewhat depending on a variety of circumstances, you should likely schedule your time to complete the assignment by the due date.

Some individuals have a mistaken belief that computer scientists don’t need to be able to write code to solve problems, and that this task should be left to “programmers.” As noted, this is wrong. Computer scientists must write, both in natural language (like English) and in numerous
programming languages (like C and Java). If you believe you do not have the necessary preparation to develop and write solutions to the programming assignments, you are advised to drop the course and acquire better program develop skills before attempting it again.

**Computing Resources** The computing facilities in the PKI building will be appropriate for the class assignments. You may also use your own system (which will likely be more convenient). In either case, you will need to install the GLUT toolkit (which is relatively easy) and perhaps other tools or libraries as appropriate to the system and language you are using. Obviously it is essential that the instructor be able to evaluate your work, so you may need to provide additional documentation on your development environment to the instructor.

You are also expected to be aware of, and abide by, the policy for responsible use of university computers and information systems found at [www.nebraska.edu/about/exec_memo16.pdf](http://www.nebraska.edu/about/exec_memo16.pdf).

**Attendance** Although class attendance is not used as a factor in determining a final grade, it is an essential part of the learning experience. Some topics may be discussed in class that are not presented in the slides provided on the class web site. In addition, there is a departmental policy regarding unexcused absences from class. A student is issued a formal warning after the second unexcused absence from class. After the third unexcused absence from class, the student is withdrawn.

**“Makeup” Work** Your grade in the course is determined by your performance during the semester. There will be no possibility of a “makeup” or “do over” after the end of the semester, so you should ensure that you do the work necessary to obtain the desired grade during the semester.

**The Class Directory** The directory `/home/stanw/csci4620` on `loki.ist.unomaha.edu` (a Linux system) will contain files that will almost certainly be of significant value in developing your solutions to the programming assignments for the course. The text file named `MANIFEST` in that directory will contain a list of these files and notes about them. The instructor will notify the system administrators for this system of the students in this course so they can create and/or reactivate accounts for you, as necessary.

**Department Policy on Cheating and Plagiarism** The general university policies on cheating and plagiarism apply within the department. Unless otherwise specified by an instructor, student work shall represent only the individual effort of that student, with portions of that work done by others given appropriate attribution. If a group effort is explicitly permitted or required by the instructor for one or more assignments, then the instructor shall indicate which part(s) of the assignment must be completed on an individual basis, if any.

If an instructor believes a student has plagiarized the work of another (regardless of whether the other person is a student in the same section/class or not), or represented as their own work that which another person produced (whether on a paid basis or not), then that instructor shall inform the student of the suspicion. The student shall be given an opportunity to explain, if they wish, why the work was not plagiarized. If after such student explanation the instructor still believes the work was plagiarized, the instructor has the responsibility for assigning an evaluation to the work that is substantially lower than if the work had not been completed at all. The department chair will be notified for the action. If the student whose work being copied or plagiarized knows the fact but does not take a proper action, the student will be held responsible the same as the copying or plagiarizing student.
If a second occurrence of plagiarism is evidenced for the same student, the instructor has the responsibility of assigning a grade of F to the student for the course and informing the registrar’s office that the student will not be permitted to withdraw from the course. Both the department chair and the college dean will be notified for the action.

Repeated occurrences of plagiarism (in multiple courses) by the same student shall result in notification of the Vice Chancellor for Academic Affairs and/or the Graduate Dean, as appropriate, from the department chair or the college dean, and possible dismissal of the student from the program.