**Course Notes**

**Class Meetings** This class will meet from 12:00 PM to 1:15 PM in PKI 274 each Tuesday and Thursday from January 9 through April 26, 2018, with the exception of February 1 (not definite yet), March 20 and 22 (spring break), and possibly April 19. The final examination is from 12:00 PM to 2:00 PM on Tuesday, May 1.

**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. stanw@unomaha.edu is the instructor’s e-mail address. It is the only e-mail address that should be used for communication regarding the class. In your e-mail, please use a subject that identifies the course number (3550). 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 algorithms, and have reasonable proficiency in implement solutions to programming assignments in a language like C, C++, or Java. Other languages (like Python or Rust) may be acceptable, depending on the particular assignment.
**Course Organization** The course will closely following the order of topics presented in the textbook, and material from each of the eight chapters will be covered (chapter 9 is the reading list and bibliography). The chapters themselves correspond to the layers into which communication systems are often divided, as we will see. The topics of these chapters are as follows:

Chapter 1: Introduction to data communications
Chapter 2: The physical layer – low-level details of communication, getting individual bits from one point to another
Chapter 3: The data link layer – how to get frames (groups of bits) from one point to another
Chapter 4: The medium access control sublayer – how to deal with broadcast communication channels
Chapter 5: The network layer – addressing network devices, and how to route messages between them, end to end
Chapter 6: The transport layer – process to process communication
Chapter 7: The application layer – where the rubber meets the road!
Chapter 8: Network security – cryptography, authentication, social issues

Each of these chapters has an associated set of lectures and a set of lecture slides provided by the textbook authors. Additional material will be provided, either as handouts or on-line documents, as appropriate. An approximate schedule is (or will be) provided on the class web page, and this will identify the appropriate textbook sections to be read.

**Class Meeting Schedule** As noted above, the class meeting schedule, indicating the material to be covered, and the dates of other events (quizzes, exams, assignments, etc.) appears (or will appear) on the class web site (see below). It will be updated as necessary to reflect any schedule changes.

**Textbook** The textbook for the course is *Computer Networks* (fifth edition) by Andrew S. Tanenbaum and David J. Wetherall (Pearson/Prentice Hall publishers, copyright 2011, ISBN 0-13-212695-8). Much of the material from each of the first eight chapters will be covered in the class, although lectures may not focus on all of the material.

**Web Sites** cs2.ist.unomaha.edu/~stanw is the instructor’s web page. The web pages for the class are at cs2.ist.unomaha.edu/~stanw/181/csci3550/index.html. 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 will be used only to communicate grades. The class web page will have all other course materials.

**Grading** Grades will be based on four components:

- three short quizzes (5 percent each, 15 percent total)
- three programming assignments (15 percent each, 45 percent total)
- a mid-term examination (15 percent)
- a comprehensive final examination (25 percent)

The short quizzes will be given during the last part of class on the dates they are scheduled.

The final letter grade for a numeric grade of $g$ will be assigned using the following table, or one that is slightly more generous, as the numeric break points between the different letter grades may be lowered (based largely on overall class performance), but they will never be increased.

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<thead>
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<th>Numeric Grade</th>
<th>Letter Grade</th>
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<tr>
<td>97 ≤ $g$ ≤ 100 percent</td>
<td>A+</td>
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<td>93 ≤ $g$ &lt; 97 percent</td>
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<td>90 ≤ $g$ &lt; 93 percent</td>
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<td>87 ≤ $g$ &lt; 90 percent</td>
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<td>83 ≤ $g$ &lt; 87 percent</td>
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<td>67 ≤ $g$ &lt; 70 percent</td>
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<td>63 ≤ $g$ &lt; 67 percent</td>
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<td>60 ≤ $g$ &lt; 63 percent</td>
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**Programming Assignments** As noted above, there will be three programming assignments for this course. The first two will require you to write actual communication applications for the Linux system. These solutions will be tested on a university Linux system (specifically, loki.ist.unomaha.edu) on which each student has an account (or should have an account). Detailed information on the preparation, submission, and evaluation of solutions will be provided with the assignments on the class web page.

The instructor is always willing to assist students with problems related to the course, including programming problems. Do not, however, expect that you will be able to learn sufficient programming skills during the course if you do not already possess them.

**Computing Resources** You are expected to be aware of, and abide by, the policy for responsible use of university computers and information systems. A copy
of this policy can be found at www.nebraska.edu/about/exec_memo16.pdf. You may already have an account on the system to be used for completing programming assignments, loki.ist.unomaha.edu. You should immediately determine if your account works. If you do not have an account, or if your previous account is disabled, inform the instructor immediately. You may also find it useful to view the web site at http://loki.ist.unomaha.edu.

**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. In the summer session, missing more than one class will result in the student being withdrawn from the class. An attendance check will take place near the beginning of each class meeting.

**“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** There is a directory, /home/stanw/csci3550 on the computer system used for the class (that is, loki.ist.unomaha.edu). It will contain files that will be of significant value in developing your solutions to the programming assignments for this course. The text file MANIFEST in that directory will contain a list of these files and notes about them.

**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 explana-
tion 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.