Network Administration  
CSC 355 001  
Spring, 2016

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468-1867, 468-2508

Office Hours

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
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<tbody>
<tr>
<td>Monday</td>
<td>10:00 - 11:00 2:30 - 3:30</td>
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<tr>
<td>Tuesday</td>
<td>10:45 - 11:30 2:00 - 3:00</td>
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<tr>
<td>Wednesday</td>
<td>10:00 - 11:00 2:30 - 3:30</td>
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<td>Thursday</td>
<td>10:45 - 11:30 2:00 - 3:00</td>
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<td>Friday</td>
<td>10:00 - 11:00</td>
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Other times by appointment.

Class meeting time and place

01:00 pm - 02:15 pm every Monday and Wednesday  
McKibben Education Building  
Room ED322

Course Description

Network Administration principles, tools, and techniques including network installation, configuration, operation, and maintenance. Exploration of current issues, topics, and trends in network development.

Prerequisites

CSC 353.

Program Learning Outcomes

Program learning outcomes define the knowledge, skills, and abilities students are expected to demonstrate upon completion of an academic program. These learning outcomes are regularly assessed to determine student learning and to evaluate overall program effectiveness. You may access the program learning outcomes for your major and particular courses at http://cs.sfasu.edu/cs/plo/.
Student Learning Outcomes

Upon successful completion of the course, students should be able to:

1. Demonstrate an understanding of the computer networking field through identification of models, concepts, and technologies.
2. Demonstrate a thorough understanding of the procedures required to install, configure, and maintain computer networks.
3. Identify user requirements and activities.
4. Identify the tools and techniques of computer networking.
5. Describe relevant current practices, procedures and policies in the computer networking field.

Required Materials

Linux+ Powered by LPI (LX0-101 & LX0-102) LabSim

Wireshark software: Available at www.wireshark.org

Course Requirements

Examinations: (70% of the course grade)

Two or three regular examinations plus a comprehensive final. The final exam counts double.
NOTE: There are NO exemptions from the final examination.

Assignments: (15% of the course grade)

Assignments, unannounced quizzes, and attendance.

Labs: (15% of the course grade)

Course Calendar/Timeline

Overview: network to inter-network .................................................. 3 hours
Goals, Services, Terminology
Designing and Planning
Network Technology – Systems, Components, Media
Environment – Corporate, Personnel, Responsibility Issues

Models & Protocols ................................................................. 3 hours
OSI stack: the model
Ethernet & TCP/IP: the actuality

Ethernet: the Link ................................................................. 10 hours
History
Current practice
Framing
Hubs, bridges, switches

IP: network to network ................................................................. 7 hours
Interface: ARP/RARP
ICMP, ping
IP addressing, subnetting
Routing, packet header: TTL, addresses

TCP: host to host. ................................................................. 7 hours
Connectionless/connection-oriented, datagram/streams
Error correction, flow control
Interface: Ports

Application: message to packet. ................................. 7 hours
Packetizing, headers
DNS, DHCP, FTP, Telnet/SSH, Mail
SNMP

Wireless LANs. ................................................................. 1 hours

Security ................................................................. 2 hours
Packet sniffer/Protocol analyzers

Process and Policies ................................................................. 2 hours
Application and User Responsibilities
Applications – Installation and Configuration
Training
Analysis and Tuning

Exams ................................................................. 3 hours

Class Information and Policies

Attendance & Class Behavior:

Seating assignments will be made and roll will be taken regularly. Attendance will be used in
calculating your final grade. If you come to class, you are expected to be present the entire
class period unless you have been given permission to leave early. If you are absent from
class please do not come by my office and ask me to repeat the class lecture. There will be
no smoking, no chewing of tobacco, no eating or drinking, and no bare feet. Please keep your
feet off of the seat backs. No disruptive behavior including offensive language will be tolerated
in a computer science facility or related activity. Such behavior may result in administrative
removal from class. Cell phones and pagers should be turned off for the duration of the class.
Only students officially registered for the course and approved assistants may attend class.

Examination Policy:

All class examinations are considered to be a major part of the course work upon which a
large part of the course grade depends. There are NO make-up exams! Class examinations will be announced at least two classes prior to the examination. If you have a conflict with another university event, you must contact me well in advance of the examination. In case of an extreme emergency, contact me before the scheduled examination. Failure to do so will result in an examination grade of zero. A grade of zero will be assigned for any missed unannounced quizzes.

Assignment Policy:

Assignment Policy:

All assignments are due at the BEGINNING of class (or by an announced time) on the specified due date. That means, any assignment given to me after I have collected the assignments from the class is considered to be late. As much as 100% of the total credit may be deducted from assignments that are handed in late. Under NO circumstances will any assignment be accepted for credit after the collected class assignments have been graded. PLEASE NOTE: You may be given assignments during the last five class days of the semester.

University Drop Policy:

The official university add/drop policy is located at: http://www.sfasu.edu/policies/course-add-drop.pdf If you have questions concerning registration, add/drop or the withdraw process, contact the Registrar at (936) 468-2501 or E-mail: REGISTRAR@SFASU.EDU The Registrar is located on the 2nd floor of the Rusk building.

Computer Account Policy:

All assignments that require the use of the University Computer must be done using the computer account that is assigned to you in this class. You should NOT do other class assignments in this account, and you should NOT do assignments from this class in other accounts. Failure to abide by the above statements will mean that you will receive a grade of F in this course.

Software Policy:

Disciplinary action will be taken against individuals who perform unauthorized duplication of computer software or who are involved in the unauthorized use of duplicated software. This action may make it impossible for you to successfully complete this course.

Cheating Policy:

If in my judgment a student is found cheating on an examination, a grade of zero will be assigned as the examination grade and a minimum of one (1) letter grade will be lost in the course grade. A course grade of F may be assigned depending on the situation. All other class assignments are to be done INDEPENDENTLY. If in my judgment two or more people hand in assignments that I judge to be the same, the point value for that homework assignment will be deducted from the homework grade of all involved students and a minimum of one letter grade may be lost in the course grade. A recurrence of this by any individual will result in a grade of F in the course. Students should save all developmental copies of their programs/assignments so that individual program/assignment development
can be verified to me if I think it is necessary. DO YOUR OWN WORK!

Computing Laboratory Usage:

Students who utilize equipment in university computing laboratories are expected to read and abide by all posted policies for the laboratories. Please note that no children and no pets are permitted in university computing laboratories.

Program Learning Outcomes:

Program learning outcomes define the knowledge, skills, and abilities students are expected to demonstrate upon completion of an academic program. These learning outcomes are regularly assessed to determine student learning and to evaluate overall program effectiveness. You may access the program learning outcomes for your major and particular courses at [http://cs.sfasu.edu/cs/plo/](http://cs.sfasu.edu/cs/plo/).

General Student Policies:

Academic Integrity (A-9.1)
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. Please read the complete policy at [http://www.sfasu.edu/policies/academic-integrity.pdf](http://www.sfasu.edu/policies/academic-integrity.pdf).

Withheld Grades Semester Grades Policy (A-54)

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

[http://www.sfasu.edu/policies/course-grades.pdf](http://www.sfasu.edu/policies/course-grades.pdf)
Students with Disabilities

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Acceptable Student Behavior

Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic, or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed. http://www.sfasu.edu/policies/student-conduct-code.pdf