Fall 2017 Syllabus

Course for students in Computer Information Systems or in Computer and Information Technologies programs. This course is a continuation of the IT2400 course you should have already had. This course will instruct students in greater detail in the concepts of computer networks, hardware and setup. We will focus on the physical, data-link and network layers in this course. The course will emphasize network design, monitoring your network, management and just about anything that you need to prepare you to be an awesome Network Administrator. Students will be required to design, monitor and manage computer networks.

Prerequisites: IT2400, Preferrably IT3100

Course fee: The fee for this course is $25.00, used to assist in maintaining the CIT infrastructure.

Course Time: T,R 18:00-19:15 in SCC 116

Final exam: TBD

Instructor: Cassidy B. Larson

- Email: cbl at infowest dot com (Start subject line with IT4400)

Objectives

At the end of the course, students will be able to discuss and implement (where appropriate) the following networking topics:

- Appropriate Subnetting
- Cisco devices and their uses
- Network Management: The Why and How.
- Appropriate uses for Network Security
- Packet Filtering
- The student will gain practical experience in:
  - Setting up their own network.
  - Identifying the good from the bad in network design
  - Setting up their own Cisco Routers for communication with the rest of the network
  - Setting up serial data-links between multiple POPs.
  - Subnetting IP Addresses efficiently
  - Routing Protocols: IGP, BGP, OSPF
  - Upgrading Cisco Routers IOS Software
  - Upgrading Cisco Routers Hardware
  - Network Security
  - Cisco Switch configuration
  - Switches and Hub experience
  - IPv6 Subnetting, Routing and Design
  - VLAN’s
  - and more!

Resources

Texts

There is one text for this course.

- The required text for this course is the *Cisco CCNA Routing and Switching 200-125 Academic Edition (2016)*. ISBN # 978-1587205996. There are two books included with the library, ICND1 and ICND2. In class we’ll refer to them as Book1 and Book2. These references will also be used on the reading schedule.

Other Materials

Also, you will be required to purchase or obtain a Cat5 RJ45 crimper. These are available at most major hardware chains, online or wherever else fine networking products are sold. You can get a basic crimper for sub $10.00. Also recommended is a Coax cable stripper (I like the **Ideal 45-165** model). Ebay has some for $8.00, or $22 elsewhere. This device will help you strip the jacket faster from your cables. If you want to get
my recommended crimper get the **Ideal 30-496** crimper. **Monoprice** has some network crimping tools as well. However, if you want the Rolls Royce of crimper tools get the **Greenlee/Paladin PA1530R crimper**. **Greenlee/Paladin PA1116 Cable Stripper** and the **Greenlee/Paladin PT-T03 Scissors**

Each student will be assigned routers and switches to be used for the duration of this course. The equipment will stay in the CIT lab rack but the students will be responsible for wiring, configuring and install software and managing these switches and routers throughout the course. Access to this equipment will be provided through a serial console device. We will go over how to connect to this device in class. You may be able to access the serial console from home to work on your assignments by SSHing through a CIT department server first.

### Labs

You may use the computers in the lab. There will also be lab assistants in labs.

### Course Website

This course has an accompanying website. You are responsible for announcements, the schedule, and other resources posted on the website. Assignments and grades will be managed using **Canvas**, which requires a valid Dixie username and password. The course website is accessible at [http://cit.cs.dixie.edu/courses/](http://cit.cs.dixie.edu/courses/).

### Coursework

#### Readings

The student is responsible for reading the material in the textbook. A reading **schedule** is provided with the class schedule on the course website. The student is expected to read the material before the class in which it is discussed. The book also includes material beyond what we will discuss in lecture, which you are encouraged to study on your own. Feel free to bring questions from the reading to lectures or to office hours.

#### Assignments

Assignments will be graded for accuracy of function and style of design. Programs that do not compile will receive no credit. It is important that you start early and get each of your assignments done before its due date. Many problems will take much longer to solve in a single sitting than in many shorter sessions. Give yourself time to think; sleep on difficult problems. Finish early so you can go back and refine your initial approach.

Assignments are due on the date listed in the schedule, and must be passed off to the instructor or a lab assistant for the course. Your instructor will tell you how to appropriately submit assignments. This means that you must reserve time to pass it off at a suitable time before the end of the day it is due.

#### Exams

There will be 3 exams given throughout the semester. Two midterms and a final (final is worth 2x as much as a regular exam). The final is comprehensive. Any missed tests will need to have the Divisional Dean’s approval before you can take the test. Test dates will be announced in class.

### Grading

Projects, exams, and participation each contribute to your point total. The breakdown for the above items is as follows:

- Projects = 40%
- Tests = 50%
- Participation = 10%

Here is the grading scale:

<table>
<thead>
<tr>
<th>Score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 94</td>
<td>A</td>
</tr>
<tr>
<td>&gt;= 90</td>
<td>A-</td>
</tr>
<tr>
<td>&gt;= 87</td>
<td>B+</td>
</tr>
<tr>
<td>&gt;= 84</td>
<td>B</td>
</tr>
</tbody>
</table>
Course Policies

Absences

Students are responsible for material covered and announcements made in class. School-related absences may be made up only if prior arrangements are made. The class schedule presented is approximate. The instructor reserves the right to modify the schedule according to class needs. Changes will be announced in class and posted to the website. Exams and quizzes cannot be made up unless arrangements are made prior to the scheduled time.

Time

Courses should require about 45 hours of work per credit hour of class. This class will require about 135 hours of work on the part of the student to achieve a passing grade, which is approximately 9 hours per week. If you do not have the time to spend on this course, you should probably rethink your schedule.

Late work

Late work is NOT accepted. You are expected to turn things in by the date they are due. Exceptions must be discussed with the instructor BEFORE the due date/time. Computer failure does not qualify as an excuse for late work.

It is your responsibility to see that assignments/projects are turned in and on time. If you come to me and say, “I turned in that assignment”, yet I have no record of it, you will receive a 0. The burden of proof is on you to prove that you turned in something at a given time. We are using an electronic submission system which records when a item is submitted.

Finally, no points can be contested after a test which covers that assigned material has been given. So for example, if you come to me at the end of the semester and say “Oh, but I turned in that assignment the second week of the semester”. If I don’t have a record of it, and we have already tested on it, you will not get the points.

Cheating and Collaboration

Limited collaboration with other students in the course is permitted. Students may seek help learning concepts and developing programming skills from whatever sources they have available, and are encouraged to do so. Collaboration on assignments, however, must be confined to course instructors, lab assistants, and other students in the course. Students are free to discuss strategies for solving programming assignments with each other, but this must not extend to the level of programming code. Each student must code his/her own solution to each assignment. See the section on cheating.

Cheating will not be tolerated, and will result in a failing grade for the students involved as well as possible disciplinary action from the college. Cheating includes, but is not limited to, turning in homework assignments that are not the student’s own work. It is okay to seek help from others and from reference materials, but only if you learn the material. As a general rule, if you cannot delete your assignment, start over, and re-create it successfully without further help, then your homework is not considered your own work.

You are encouraged to work in groups while studying for tests, discussing class lectures, discussing algorithms for homework solutions, and helping each other identify errors in your homework solutions. If you are unsure if collaboration is appropriate, contact the instructor. Also, note exactly what you did. If your actions are determined to be inappropriate, the response will be much more favorable if you are honest and complete in your disclosure.

Where collaboration is permitted, each student must still create and type in his/her own solution. Any kind of copying and pasting is not okay. If you need help understanding concepts, get it from the instructor or fellow
classmates, but never copy another’s code or written work, either electronically or visually. The line between collaborating and cheating is generally one of language: talking about solutions in English or other natural languages is usually okay, while discussions that take place in programming languages are usually not okay. It is a good idea to wait at least 30 minutes after any discussion to start your independent write-up. This will help you commit what you have learned to long-term memory as well as help to avoid crossing the line to cheating.

**College Policies**

Additional college policies, calendars, and statements are available online at [http://new.dixie.edu/reg/syllabus/](http://new.dixie.edu/reg/syllabus/).