Class Meets:

Day: Thursday  
Time: 7:20 PM to 10:00 PM  
Where: Johnson Center, Room G10

Instructor: Ben Allen

My Contact Information:

E-mail address: ballen5@gmu.edu.

Office number: 703-993-3478  
Feel free to leave messages here if I am unable to answer.

Office Hours: By Appointment on Friday after 4:00 PM.

In emergency situations, try my cell phone between the hours of 9:00 AM and 9:00 PM. If I am unable to answer, please leave a message at my office number. Please report absences before the fact by email (and if possible, in person). The Number is 571-220-7747.

Course Materials:

You may want to download the Lab Manual, ECE 467 Network Implementation Laboratory and Experiment Guide, Spring 2006. We will not follow the manual directly, but there are some configuration examples and explanations that may be helpful. I highly recommend everyone purchase a copy of the O’Reilly book *IOS in a Nutshell* by James Boney.

Course Goals:

By the end of this course, you will be able to identify, configure and describe the operation of networking hardware components and data link technologies. You will be able to use these building blocks to craft small inter-networks of moderate complexity.
<table>
<thead>
<tr>
<th>Week 1</th>
<th>Overview, Review, Device Familiarization, Network Analysis and Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>Internetwork Routing using static routes, RIP, and OSPF</td>
</tr>
<tr>
<td>Week 3</td>
<td>Experiment 1</td>
</tr>
<tr>
<td>Week 4</td>
<td>Routing within Autonomous Systems using BGP</td>
</tr>
<tr>
<td>Week 5</td>
<td>Experiment 2</td>
</tr>
<tr>
<td>Week 6</td>
<td>TBD - Router Simulators, Multi-vendor Environments, Review</td>
</tr>
<tr>
<td>Week 7</td>
<td>MIDTERM EXAM</td>
</tr>
<tr>
<td>Week 8</td>
<td>Serial Interfaces, HDLC and Frame Relay (P2P, NBMA link topologies)</td>
</tr>
<tr>
<td>Week 9</td>
<td>Experiment 3</td>
</tr>
<tr>
<td>Week 10</td>
<td>TBD - MPLS Overview, Multicast Overview</td>
</tr>
<tr>
<td>Week 11</td>
<td>TBD - MPLS L2 VPNs: Pseudowires, VPLS (E-LINE, E-LAN, E-TREE), Experiment 4</td>
</tr>
<tr>
<td>Week 12</td>
<td>TBD - MPLS L3 VPNs, Experiment 4</td>
</tr>
<tr>
<td>Week 13</td>
<td>TBD - Experiment 4 Report Due, Review</td>
</tr>
<tr>
<td>Week 14</td>
<td>FINAL EXAM</td>
</tr>
</tbody>
</table>
**Laboratory Reports:**

Laboratory reports are due in hard copy at the beginning of the lab period. Lab Reports submitted after the beginning of the period will be docked 10%. Reports submitted by email without prior arrangement with the instructor will also be docked 10% and will not be returned to the student. Reports submitted after the Lab period in which they are due and reports that are hand-written will not be graded. Reports should include:

- A complete network topology diagram including your conceptual location within that diagram for each topology attempted.

- A list of all the physical elements used in the lab by your team and the corresponding layer of the OSI Model for each.

- A discussion or procedure list of the configuration and testing process. Discussing or listing problems encountered during the procedure and their solutions is also encouraged.

- Finally, you should report whether a working topology was successfully achieved, how the success or failure was determined and, if the topology did not work, a discussion of the probable causes of failure. Failed topologies that are well documented and analyzed will absolutely be given full credit: their instructional value is often greater than those of successes.

**Homework:**

Homework will be assigned on an occasional basis by the instructor and will include questions designed to help the student achieve and demonstrate mastery of key material.

There may be both written and practical unannounced quizzes to test your mastery of certain topics. Quiz grades are weighted equivalently to homework grades.

**Examinations:**

There will be one midterm and one final examination. Both will include a written portion and a practical (hands-on) portion.
**Attendance Policy:**

Students are required to attend all lab sessions. The instructor will take attendance at the beginning of each session. Unplanned late arrivals and absences will lose class participation points. Any absence planned or otherwise should be reported to the instructor by email and in person in advance. If there are exigent circumstances, or a prior notification, the instructor may forgive or allow a student to make up a late arrival or a missed lab.

**Grading:**

20%: Class attendance and participation. Everyone who shows up and tries will get full credit. Points will be deducted for disrupting or failing to participate in class.

20%: Lab reports homework and quizzes.

30%: The mid-term examination content will depend on the pace of the class and will cover all the material through week 6.

30%: The Final Examination will be a cumulative examination of all topics covered in the Course.

**Disputing Your Grade:**

Students are allowed to contest the grading of their own work. Students must demonstrate the correctness of their work by citation of a written reputable source. Reputable sources include published books or articles in industry magazines or academic journals or web articles recommended by the course materials or the Instructor.

**Extra Credit:**

Students may be given periodic opportunities to earn extra credit. These opportunities include:

- Assisting or correcting the Instructor
- Bonus questions in homework or examinations
- Extra effort in the assistance of classmates

Extra credit will count toward a grade of B+ only. A (including A-) grades are earned only by merit of excellent regular class performance.
Standards of Conduct:

- There is no eating or drinking in the lab.

- Disruptive or disrespectful behavior toward other students or the instructor will not be tolerated. Students will lose class participation points and may be asked to leave the lab.

- This is a lab, so experimentation is encouraged. However, please be courteous to others. Always communicate what you’re doing as it may impact other groups.

- If you have questions, by all means ask the instructor (after all, that’s why we’re here).