

**IT 341 – Data Communications and Networking Principles**  
**Syllabus**  
**Spring 2008**

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**Section 1**

Instructor: *Tawfiq Khan*  
Office: Room 122, Bull Run Hall  
Office Hours: Monday (7:15pm-8:15pm) or by appointment  
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**Section 2**

Instructor: *Khondkar R. Islam*  
Office: Room 101, Bull Run Hall (PW campus); Room 17, ST II (Fairfax campus)  
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**Section 3**

Instructor: *Louis D'Alessandro*  
Office: Room 102D, Bull Run Hall  
Office Hours: Thursday (10:00am-12:00pm) or by appointment  
Phone: 703-505-2790  
Email: ldalessa@gmu.edu

**Prerequisite:**

IT101, IT108, IT212, Math108 or permission of the instructor

**Lecture Textbooks:**

Odom, W. & Knott, T.; Networking Basics, CCNA 1 Companion Guide, Cisco Press, ISBN 1-58713-164-1  
Odom, W. & McDonald, R.; Routers & Routing Basics, CCNA 2 Companion Guide, Cisco Press, ISBN 1-58713-166-8

**Lab Textbooks:**

McReynolds, S; Networking Basics, CCNA 1 Labs and Study Guide, Cisco Press, ISBN 1-58713-165-X  
Johnson, A; Routers & Routing Basics, CCNA 2 Labs and Study Guide, Cisco Press, ISBN 1-58713-167-6

**Instruction for Purchasing at a Discount Rate:**

Can be obtained from [www.ciscopress.com](http://www.ciscopress.com)

Here are the instructions: Follow these 4 steps once then after that just login to ciscopress.com to get this discount from now onward.

To take advantage of the special offer, simply apply your school's Sales Rep membership code and follow the steps below:

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Then just log in as a Member each time you visit ciscopress.com to automatically receive your special pricing and save on every purchase.

### **Slides:**

Class and lab lectures

### **Course Materials at:**

<http://webct41.gmu.edu>

### **Description:**

This course focuses on the primary aspects of data communications networking, including a study of the Open Systems Interconnection (OSI) and Internet models. Students will start at Layer 1 with the study of various Layer 1 interface and cabling configurations. They will construct and test various cables with connectors. Moving up the OSI layers, students will focus on IP network addressing, network design, and enhanced hands-on router and port configurations. They will also learn security protocols and do static routing, EIGRP, RIPv2, and OSPF configurations. Students will also develop Access Control Lists (ACLs) used in modern day networks as a prime method of controlling network security and implement the ACLs on laboratory networks. Concentration on layers 4 through 7 include studying TCP, UDP, data reliability, and error correction methods, on the ladder to the FTP, HTTP, SMTP, DNS, and TFTP protocols of Layer 7. This course is 50 percent lab work of configuration of routers and network design, implementation, and testing.

### **Grading:**

Homework -	20%
Lab Work -	50%
Midterm Exam -	15%
Final Exam -	15%

**Grades will be awarded in accordance with the GMU Grading System for undergraduate students. For details, refer to <http://www.gmu.edu/catalog/apolicies/>**

**Grading scale:**

97 – 100%	→ A+
93 – 96%	→ A
90 – 92%	→ A-
87 – 89%	→ B+
83 – 86%	→ B
80 – 82%	→ B-
76 – 79%	→ C+
70 – 75%	→ C
60 – 69%	→ D
0 – 59%	→ F

Raw scores may be adjusted by the Instructor to calculate final grades.

**Honor Code:**

You may ask other students for help during lab (in fact, you are encouraged to do so), but each student is expected to do his/her own work. Lab exams are to be done without assistance. Anyone caught cheating on exams or copying assignments will be turned in to the Honor Committee. See your instructor or TA if you have any problems or concerns.

Following links contain useful information on GMU's Honor Code and Responsible Use of Computing Policy:

<http://www.gmu.edu/catalog/apolicies/honor.html>

and

<http://www.gmu.edu/facstaff/policy/administrative/60.html>

**Homework:**

Homework assignments are on WebCT. Each assignment will be released for viewing one week prior to the due date. Late homework may not be accepted – if accepted, a penalty may be applied. Acceptance of late homework will be at the sole discretion of the Instructor.

**Lab Make-ups:**

If you miss a lab session and wish to make-up during the lab make-up sessions at the end of the term, you will not receive full credit for the missed labs. Exceptions would be made to those with supporting documentation for extenuating circumstances.

**Midterm exam:**

The midterm exam will be conducted during class time in Week 7 and will cover material discussed in weeks 1-6. The mid-term exam will be “closed book”– no reference materials will be permitted.

## Final exam:

The final exam will be held the week after the final class in the classroom and will cover material discussed primarily in weeks 8-15. The final exam will be “closed book”– no reference materials will be permitted. Final exams are retained by the AIT Department and are not returned to students.

## Schedule (Subject to Change):

Week	Content	Reading, Assignments & Labs
1	Chapter 1 (CCNA 1) <ul style="list-style-type: none"><li>• Introduction to Networking</li></ul> Chapter 1 (CCNA 2) <ul style="list-style-type: none"><li>• WANs &amp; Routers</li></ul>	<ul style="list-style-type: none"><li>• Home Assignment 1 (Refer to Assignments Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li><li>• Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li></ul>
2	Chapter 2 (CCNA 1) <ul style="list-style-type: none"><li>• Networking Fundamentals</li></ul> Chapter 2 (CCNA 2) <ul style="list-style-type: none"><li>• Introductions to Routers</li></ul>	<ul style="list-style-type: none"><li>• Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li></ul>
3	Chapter 3 (CCNA 1) <ul style="list-style-type: none"><li>• Networking Media</li></ul> Chapter 3 (CCNA 2) <ul style="list-style-type: none"><li>• Configuring a Router</li></ul>	<ul style="list-style-type: none"><li>• <b>Home Assignment 1 Due</b></li><li>• Home Assignment 2 (Refer to Assignments Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li><li>• Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li></ul>
4	Chapter 10 (CCNA 1) <ul style="list-style-type: none"><li>• Routing Fundamentals &amp; Subnets</li></ul> Chapter 4 (CCNA 2) <ul style="list-style-type: none"><li>• Learning About other Devices</li></ul>	<ul style="list-style-type: none"><li>• Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li></ul>
5	Chapter 10 (CCNA 1) - continued <ul style="list-style-type: none"><li>• Routing Fundamentals &amp; Subnets</li></ul> Chapter 5 (CCNA 1) <ul style="list-style-type: none"><li>• Cabling LANs &amp; WANs</li></ul>	<ul style="list-style-type: none"><li>• <b>Home Assignment 2 Due</b></li><li>• Home Assignment 3 (Refer to Assignments Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li><li>• Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li></ul>
6	Chapter 5 (CCNA 2) <ul style="list-style-type: none"><li>• Managing Cisco IOS Software</li></ul> Chapter 6 (CCNA 1) <ul style="list-style-type: none"><li>• Ethernet Fundamentals</li></ul> <a href="#">Review for Midterm Exam</a>	<ul style="list-style-type: none"><li>• Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li></ul>
7	<b>Midterm Exam</b> Chapter 7 (CCNA 1) <ul style="list-style-type: none"><li>• Ethernet Technologies</li></ul> Chapter 6 (CCNA 2) <ul style="list-style-type: none"><li>• Routing &amp; Routing Protocols</li></ul>	<ul style="list-style-type: none"><li>• <b>Home Assignment 3 Due</b></li><li>• Home Assignment 4 (Refer to Assignments Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li><li>• <b>No Lab Session</b></li></ul>
March 10-15	Spring Recess	<ul style="list-style-type: none"><li>• No Class</li></ul>
8	Chapter 7 (CCNA 2) <ul style="list-style-type: none"><li>• Distance Vector Routing Protocols</li></ul>	<ul style="list-style-type: none"><li>• <b>Home Assignment 4 Due</b></li><li>• Home Assignment 5 (Refer to Assignments Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li><li>• Lab Session (Refer to Lab</li></ul>

		Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a> )
9	Chapter 8 (CCNA 1) <ul style="list-style-type: none"> <li>Ethernet Switching</li> </ul> Chapter 8 (CCNA 2) <ul style="list-style-type: none"> <li>TCP/IP Suite Error &amp; Control Messages</li> </ul>	<ul style="list-style-type: none"> <li>Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li> </ul>
10	Chapter 9 (CCNA 1) <ul style="list-style-type: none"> <li>TCP/IP Protocol Suite &amp; IP Addressing</li> </ul> Chapter 9 (CCNA 2) <ul style="list-style-type: none"> <li>Basic Router Troubleshooting</li> </ul>	<ul style="list-style-type: none"> <li><b>Home Assignment 5 Due</b></li> <li>Home Assignment 6 (Refer to Assignments Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li> <li>Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li> </ul>
11	Chapter 10 (CCNA 2) <ul style="list-style-type: none"> <li>Intermediate TCP/IP</li> </ul> Chapter 11 (CCNA 2) <ul style="list-style-type: none"> <li>Access Control Lists</li> </ul>	<ul style="list-style-type: none"> <li>Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li> </ul>
12	Chapter 10 (CCNA 2) - continued <ul style="list-style-type: none"> <li>Intermediate TCP/IP</li> </ul> Chapter 11 (CCNA 2) - continued <ul style="list-style-type: none"> <li>Access Control Lists</li> </ul>	<ul style="list-style-type: none"> <li><b>Home Assignment 6 Due</b></li> <li>Home Assignment 7 (Refer to Assignments Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li> <li>Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li> </ul>
13	Chapter 11 (CCNA 1) <ul style="list-style-type: none"> <li>TCP Transport and Application Layers</li> </ul> Chapter 11 (CCNA 2) - continued <ul style="list-style-type: none"> <li>Access Control Lists</li> </ul>	<ul style="list-style-type: none"> <li>Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li> </ul>
14	Chapter 11 (CCNA 1) - continued <ul style="list-style-type: none"> <li>TCP Transport and Application Layers</li> </ul> <a href="#">Review for Final Exam</a>	<ul style="list-style-type: none"> <li><b>Home Assignment 7 Due</b></li> <li>Lab Session (Refer to Lab Folder in <a href="http://webct41.gmu.edu">webct41.gmu.edu</a>)</li> </ul>
15	<b>Final Exam</b>	

### Dates to Remember:

Last day to drop with no tuition liability	February 05
Last day to add classes	February 05
Last day to drop	February 22

### Note:

- No make-ups for missed exam/s unless due to extreme circumstances
- We would like this course to be interactive and motivating, so class participation is encouraged
- Recommend review of lecture slides as they focus on the textbook for detail reading