# SPECIAL TOPICS IN BUSINESS:
## Computer Networks and Internets
*Course Syllabus*

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| **Course No:** | BA 298 | **Instructor:** | Prof. Leonid Romanyuk |
| **Semester:** | Fall 2012 | **Phone:** | (510) 628-8024 |
| **Units:** | 3 units (= 45 lecture hours) | **E-mail:** | lromanyuk@lincolnuca.edu |
| **Class hours:** | Monday<br>3:30 pm – 6:15 pm | **Office Hours:** | Monday, Wednesday<br>11:50 am -12:25 pm |
| **Class Room:** | TBA | **Office Room:** | 402 |

**COURSE DESCRIPTION:**

This course offers topics of specialized interest in the major fields of study. Case studies and independent research may be included. Topics vary each semester so students should not include this in a concentration unless they know it will be available. This course may be substituted in a concentration once with the permission of the Dean. (1-4 Units)

**REQUIRED MATERIALS:**

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| **TEXTBOOK:** | **Computer Networks and Internets, 5th Edition, by Douglas E. Comer,** Prentice Hall, 2008, ISBN: 0136061273 |
| **TOOLS:** | A scientific or graphing calculator and Microsoft Excel software.<br>Open source networking software tools. |
| **OPTIONAL:** | Publisher's Web resources at http://www.pearsonhighered.com/student,<br>Author Website at http://www.netbook.cs.purdue.edu |

**LEARNING OBJECTIVES:**

This course is designed to familiarize students with the terminology and concepts related to data communication, computer networks, and internets. The course will be focusing on principles and concepts rather than covering specific technology or software -- technology and software may become obsolete in one to two years, but the principles will remain. As such, the coverage of this course is on breadth, not depth. At the end of the course, students will be expected to master the terminology and basic concepts, but they will not be expected to know the engineering details of any technology.

**INSTRUCTIONAL METHODS:**

Lecture method is used in combination with the practical use of a LAN and the Internet tools to solve problems. The emphasis will be on learning by doing. Every student must participate in an intensive classroom activity. Reading, writing, computer lab, and project assignments will be made throughout the course.

**OTHER REQUIREMENTS:**

All students are required to attend the class. Continuous assessment is emphasized. Written or oral quizzes will be given every week. Students must complete all assignments and take all quizzes, mid-term exam and final exam ON THE DATES DUE. Talking in class, using cell phones, coming late, leaving the room at times other than at break time is not allowed. Plagiarism/cheating will result in the grade "F" and a report to the administration.

**TESTING:**

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| Classroom activities | every week | 10% |
| Quizzes | every week | 10% |
| Assignments | every week | 10% |
| Mid-term exam | as scheduled | 30% |
| Final exam | as scheduled | 40% |

There will be no make-up for a missed quiz or participation in a classroom activity. No make-up exams will be given unless you have the instructor's prior approval obtained in person before the exam date, with the exception of an extreme emergency. Late assignments will get no credit or reduced credit. ***Students will not be allowed to use computers or cellular phones during tests.***

**GRADING:**

Less than 50% total is an "F"; 75% total is "C+". Other grades will be calculated "on the curve" from the scores above.

**COURSE SCHEDULE:**

Daily schedule of topics is attached. Students should read every chapter of the textbook on the topic to be discussed in class before they come to class. Be ready to answer in writing all review questions and to solve problems at the end of the chapter.

**ASSIGNMENTS**:

Each assignment is due on the Monday of the next week after it is assigned. Additional assignments based on the Internet and library resources can be given during the semester. Take a folder or a notebook and create an Assignment Notebook. You will put in it the solutions and other results of all your assignments. The instructor can ask you to turn in this folder / notebook and grade your work at any time during the semester.

**MODIFICATION OF THE SYLLABUS:**

**This syllabus was updated on July 25, 2012.** The instructor reserves the right to modify this syllabus at any time during the semester. An announcement of any changes will be made in the classroom.

**FALL 2012 SCHEDULE OF TOPICS**

***PLEASE READ EVERY CHAPTER BEFORE YOU COME TO CLASS***

| Date | Topics | Chapters |
|---|---|---|
| 8/20/12 | Introduction and Overview. Internet Trends. | 1 – 2 |
| 8/27/12 | Internet Applications and Network Programming. Traditional Internet Applications. | 3 - 4 |
| 9/03/12 | Labor Day (Holiday) | |
| 9/10/12 | Overview of Data Communications. Information Sources and Signals. Transmission Media. | 5 - 7 |
| 9/17/12 | Reliability and Channel Coding. Transmission Modes. | 8 - 9 |
| 9/24/12 | Modulation and Modems. Multiplexing and Demultiplexing. Access and Interconnection Technologies. | 10 - 12 |
| 10/01/12 | Local Area Networks: Packets, Frames, and Topologies. The IEEE MAC Sub-Layer. | 13 - 14 |
| 10/08/12 | Review. | 1 - 14 |
| | **MIDTERM EXAM** | |
| 10/15/12 | Wired LAN Technology (Ethernet and 802.3). Wireless Networking Technologies. | 15 - 16 |
| 10/22/12 | LAN Extensions: Fiber Modems, Repeaters, Bridges, and Switches. WAN Technologies and Dynamic Routing. Networking Technologies Past and present. | 17 - 19 |
| 10/29/12 | Internetworking: Concepts, Architecture, and Protocols. IP: Internet Addressing. | 20 - 21 |
| 11/05/12 | Datagram Forwarding. Support Protocols and Technologies. The Future IP (IPv6). | 22 - 24 |
| 11/12/12 | Veterans Day (Holiday) | |
| 11/19/12 | UDP: Datagram Transport Service. TCP: Reliable Transport Service. Internet Routing and Routing Protocols. | 25 - 27 |
| 11/26/12 | Review | 1 - 27 |
| 12/03/12 | **COMPREHENSIVE FINAL EXAM** | |