

ECGR-3123 Data Communications and Networking
Spring 2014
Course syllabus

- INSTRUCTOR:** Amitangshu Pal
- OFFICE:** Room: EPIC-2331
Phone: 980-229-3383, E-mail: apal@uncc.edu
- OFFICE HOURS:** Mondays and Wednesdays, 5.00 pm – 6.30 pm
- LECTURE SCHEDULE:** Mondays and Wednesday, 3.30 pm – 4.45 pm, EPIC-2222.
- COURSE CONTENT:** An introduction to data communications, including transmission media, signal encoding, link control, and multiplexing. Concepts of networking including protocols, LAN, WAN, and wireless networks.
- PREREQUISITE:** ECGR 2111 (Network Theory I) and ECGR 2181 (Logic System Design I).
- TEXTS:**
- 1.) Data & Computer Communications, by William Stallings, 10th edition, Prentice Hall, 2013.
 - 2.) Data Communications and Networking, by B. A. Forouzan, 5th Edition, McGraw Hill.
 - 3.) Computer Networks, by A. S. Tanenbaum, 5th Edition, Prentice Hall.
- OUTCOMES:** Students should be able to demonstrate the following competencies and knowledge:
1. An understanding of the principles of data transmissions over different media, the operations of data link control, multiplexing, and switching, and how they are used in different kinds of data networks.
 2. The ability to design and analyze point-to-point data communication systems based on different requirements.
 3. The ability to design and evaluate different multiplexing switching systems.
- GRADING:** Homework assignments=20%,
Mid-term examinations=25%,
Quiz=25%,
Final examinations=30%.
Late assignments will not be accepted for grading.

ACADEMIC INTEGRITY:

Students have the responsibility to know and observe the requirements of the UNCC Code of Student Academic Integrity. This code forbids cheating, fabrication or falsification of information, multiple submissions of academic work, plagiarism, abuse of academic materials, and complicity in academic dishonesty.

ONLINE:

Course material and announcements will be available at <http://webpages.uncc.edu/~apal/>

TENTATIVE SCHEDULE OF CLASSES:

Lectures	Topics	Chapter
1-3	Overview of Data Communications and Networking. Protocol architecture, TCP/IP.	1-2
4-6	Analog and Digital data transmission, Transmission impairments, Channel capacity.	3
7-9	Transmission media.	4
10-12	Signal encoding techniques.	5
13	Midterm	
14-16	Synchronous and asynchronous transmission, error detection and correction.	6
17-19	Data link control protocol, Flow control and error control.	7
20-22	Multiplexing.	8
23-25	Spread spectrum techniques.	9
26-28	Circuit switching and Packet switching.	10