

# Course Syllabus

## Communications 681: Telecommunications Systems and Networks

**Telecommunications and Information Resource Management**  
**Graduate Certificate Program**  
Department of Communication  
University of Hawai'i at Manoa

**Instructors:** Norman H. Okamura, Ph.D.  
Kaina Lingaton (BBA, Senior Network Engineer, TIPG)

**Course Meeting Locations:** Saunders Hall 713; Depends on where students are located.

**Course Meeting Times:** Tuesday and Thursday; 6-9 PM Hawaii Standard Time

**Course Format:** This course is conducted both synchronous video teleconferencing and through asynchronous Web formats.

For synchronous classes, the sessions will be conducted through video teleconferencing. Participants in the course will participate via H.323 compliant video teleconferencing systems on their own PCs or at locations designated by the Instructor.

For asynchronous Web classes, course assignments, lectures and other didactic delivery will be accessed by students through Tegrity and other Windows Media/Real Media course objects. Participants will participate through the activities.

**Requirements, Expectations and Course Grades:** Students are expected to prepare for each class session by completing assigned readings, assignments, web-searches and/or recommended readings.

The course grade will be based on class assessments, class participation, and two papers.

Assessments: There will be 4 assessments that are intended to ensure that the participants are keeping up with the readings. Three of the assessments are open-book. Once a student has achieved a score of 90% or better, 10 points will be awarded. The final assessment will be an in-class on-line assessment worth 20 points. The final assessment is not open book.

Class Participation: Class participation is worth 10 points.

Papers: There are two paper assignments. Please see the assignments below. The first assignment is worth 15 points. The final paper is worth 25 points.

**Course Grades:** Course grades will be based on a series of memoranda that you will prepare, two assessments (examinations), and your participation in the class.

Assessments	10	10	10	20	50%	A = 100% - 90%
Class Participation	-	-	-	10	10%	B= 89% - 77%
Papers	15	-	25	-	40%	C = 76 - 64%
					100%	D = 63% - 50%
						F = 49% - 0%

**Attendance & Participation:**

All participants are required to both participate and attend the class sessions. Everyone has something to contribute! If you might not be able to contribute in a particular session, you could ask good questions. At the same time, please remember that we are hoping for quality discussions and “rambling” is unacceptable as well.

1	11/16/2004	Tue	Course Introduction - Telecommunications development in the United States; technology and regulation; History, Evolution (Computers – Data Communications – Television Broadcast – Digital Communications – Convergence); Separation of carrier services (a’la Divestiture of AT&T); Tariff services; Open Systems Integration (OSI) model	Reading - Ch 1
2	11/18/2004	Thu	Voice Telephony I – History, Evolution, Central Office Systems; Monopoly; Separation of carrier services (a’la Divestiture of AT&T); PBX and Key Systems; Digital systems; Convergence	
3	11/23/2004	Tue	Voice Telephony II – Voice telecommunication services; station and system features; automated attendant; voice mail; compression, network services; selection of telecommunication services; telecommunications audits.	Assessment 1
	11/25/2004	Thu	Thanksgiving - No Class	
4	11/30/2004	Tue	Data Communications I – Bits and Bytes; File Types; Modulation; Analog and Digital; Multiplexing techniques (TDM, FDM, STDM); Public and private data networks; Data Communication Protocols.	
5	12/2/2004	Thu	Data Communications II - Local Area Networks and Wide Area Networks; Firewalls	Assessment 2
6	12/7/2004	Tue	Internet and Systems Servers	
7	12/9/2004	Thu	Television and video teleconferencing	
8	12/14/2004	Tue	<b>Class Presentations – Memorandum and/or White Paper on Current Systems and Networks</b>	Paper on current systems and networks presentations
9	12/16/2004	Thu	Transmission Systems – Copper, Coaxial Cable, Microwave, Satellite, Wireless, Fiber Optics	
10	12/21/2004	Tue	Network and application security; viruses; firewalls; network monitoring	Assessment 3
11	12/23/2004	Thu	Network Architecture and Design	
12	12/28/2004	Tue	Standards Organizations	Assessment 4
13	12/30/2004	Thu	<b>Class Presentations – Final memorandum/white paper on feasibility of new technology proposal.</b>	

### **Paper Assignments:**

1. **Memorandum on Current Systems, Networks and Applications** – Assignment – The Chief Executive Officer of your organization is requesting an overview of information and communications technology for your organization. Please prepare a memorandum or white paper that provides a detailed summary of the technologies in your organization. The review should include voice, data, video, and computer application systems, and networks. Remember, this is your first briefing memorandum for the CEO. So, do a good job.
2. **Memorandum and White Paper** – Assignment – Based on your review of your current systems and networks, the Chief Executive Officer requests that you prepare a more detailed assessment of the problem and recommend some technical solutions and a feasibility assessment. The CEO has suggested that you conduct a preliminary assessment of the alternative technology solutions; estimated costs to implement the project; the HR requirements to implement the project; and a description of the potential project management.

Note on above assignments – There is flexibility in the way in which the above assignments have been constructed to fit your particular background and interests. Think about how you would like to approach the above assignments since they are cumulative. Please complete the assignments in a professional manner. Although footnotes are not normally included in business memoranda, please use footnotes as appropriate to provide further detail. If you do not have an organizational setting to work with, please develop a plan to focus on an organizational setting that meets your needs and discuss the plan with your Instructor.

### **Exams:**

There will be two assessments that are intended to ensure that you have developed the level of understanding and knowledge required in the course. The assessments are cumulative. The assessments will be 50% based on your understanding of the technologies. The other parts of the assessment will be based on your understanding of current issues. The assessments are not open book and will be time-bound.

### **Required Textbook:**

Green, James. The Irwin Handbook of Telecommunications, Fourth Edition, McGraw-Hill, Fourth Edition.

### **Recommended Textbook:**

Dodd, Annabel Z. (2000). The Essential Guide to Telecommunications (2nd Ed.). Upper Saddle River, NJ: Prentice-Hall, Inc.

The detailed course activities, readings, and assignments may be accessed via <http://ecourse.tipg.net/>