Today’s organizations are increasingly relying on telecommunications and the Internet to communicate with their suppliers/customers/partners, to integrate their functions, and to operate their businesses. As such, telecommunications networks are becoming mission-critical to many organizations. Examining enterprise networks and the Internet and surveying network security, this course is designed to give you not only the background in this growing area, but also the understanding of how they can be applied to help satisfy business requirements.

Course Description

This course covers basic to advanced topics in data communications and networking. We will first examine the protocol layer structure and general network architectures. With those backgrounds, we then investigate popular real-world technologies used by local-area networks (LANs) and wide-area networks (WANs). Topics in security and control and communication services will also be covered.

Upon completion of the course, students should be able to:

1. Know the Internet model framework and for a given system, trace the flow of data within Layers 1-4 of the OSI model.
2. Have a working knowledge of Transmission Control Protocol/Internet Protocol (TCP/IP) and how they are used in networks.
3. Specify how flow control and error control are used at the data link layer.
4. Understand how data are carried in the physical medium using analog and digital signals.
5. Comprehend the operations of major local-area networks in use today.
7. Conceptualize the architecture and functions of wide-area networks widely used by businesses.
8. Know the important techniques to ensure network security.

1 Dr. Samuel Yang (Instructor) has published books and in various academic journals. You can contact Dr Yang at syang@fullerton.edu for more information about the course.