

CS 548: Broadband Networks

Objectives

- Understand the evolution from PDH to SONET/SDH, the principles and elements of the SONET/SDH protocol(s), and the major components of an optical network.
- Understand the technologies, interfaces, and protocols used for broadband access.
- Understand the most successful protocols, implementations, and technologies for broadband LANs.
- Analyze and compare the competing architectures, protocols, and technologies used for building broadband Wide Area Networks.
- Identify the quality of service issues in broadband networks and present potential solutions.
- Show how different broadband technologies merge toward a multi-services, broadband network.
- Discuss special issues and trends in the implementation of broadband networks in the form of case studies.

Prerequisites

- CS 455

Syllabus

- Physical layer for broadband
- Broadband access
 - Cable Modems
 - Digital Subscriber Lines
 - High-speed wireless access
- Broadband Local Area Networks (LANs)
 - Ethernet switching
 - Gigabit Ethernet
 - IEEE 802.11b
 - Bluetooth
 - Virtual Local Area Networks (vLANs)
- Broadband Wide Area Networks
 - Optical networks
- Broadband Wide Area Networks
 - ATM technologies
 - Traffic management and congestion control in broadband networks.
- High speed cell switching systems and routers for broadband
- Internet Evolution to Broadband
 - QoS in Support of Multimedia Applications
 - Internet Evolution to Broadband
 - Wire-Speed Routers and IP Switching

Edited Jan 9, 2007 (**html**, **css** checks)