UT Telecommunications and Signal Processing Tech. Option

**Professors**
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- Harold W. Smith
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- Bill Bard
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Wireless Communications

- Time-frequency approaches (Fourier analysis)
- Digital communications increases SNR and capacity
- Antenna array adds further increase in SNR & capacity by using spatial diversity
- Third-generation systems: transmit voice & data (wideband CDMA)

Picture by Mr. Murat Torlak, UT Austin
**DSL Technologies**

- **HDSL** High bitrate 1.544 Mbps in both directions
- **ADSL** Asymmetric 1-9 Mbps downstream, 0.5-1 Mbps up
- **VDSL** Very high bitrate, 51.84 Mbps down, 6.48 Mbps up
Telecommunication Networks

- Internet
- Video-on-demand
- Sonet
- ATM
- Broadband ISDN
- Gigabit Ethernet

Picture by Prof. Jean Walrand, UC Berkeley
**Telecommunications Block**

- **Wireless Communications**
  - EE351M Digital Signal Processing
  - EE379K-17 (EE345S) Real-Time Digital Signal Processing Laboratory
  - EE360K Communication Electronics (Intro. to Digital Communications)
  - EE371M Communication Systems

- **Wireline Communications**
  - EE351M Digital Signal Processing
  - EE379K-17 (EE345S) Real-Time Digital Signal Processing Laboratory
  - EE371M Communication Systems

- **Networking**
  - EE379K-14 Telecommunication Networks
  - EE379K-18 Distributed Information Security
  - EE379K Networking Engineering Laboratory
  - EE379K Cryptography

- **Imaging**
  - EE371R Digital Image and Video Processing

*Taking EE345L and EE379K-17 (EE345S) satisfies the EE321K requirement*