

Digital Communication Systems

ECS 452

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Course Organization

- **Course Website:**

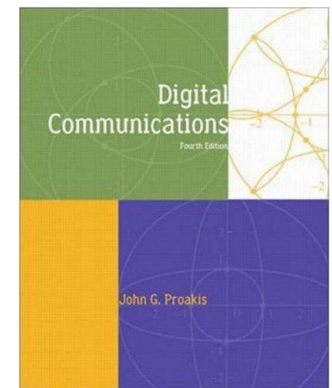
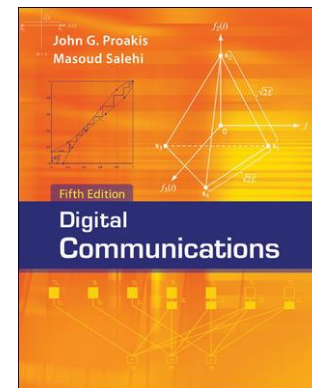
<http://www2.siit.tu.ac.th/prapun/ecs452/>

- **Lectures:**

- **Tuesday 14:20-16:00 RS401**
- **Wednesday 09:00-10:20 RS3204**

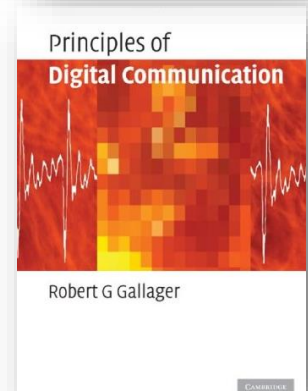
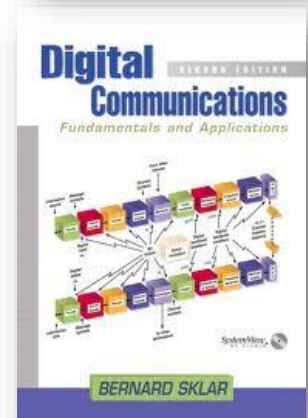
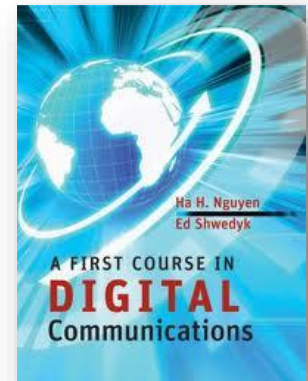
- **Textbook: Digital Communications**

- **By John Proakis and Masoud Salehi**
 - Northeastern University
- **5th (International) Edition**
- **Call No. TK5103.7 P76 2008**



More References

- A first course in digital communications
 - By Ha H. Nguyen and Ed Shwedyk
 - Call No: TK5103.7 N49 2009
 - Cambridge University Press
- Digital communications: fundamentals and applications
 - By Bernard Sklar.
 - Call No: TK5103.7 S55 2001
 - Prentice Hall
- Principles of Digital Communication
 - By Robert G. Gallager
 - 2008
 - Cambridge University Press



General Ideas

- Extension of Principles of Communications (ECS332) and Probability and Random Processes (ECS315)
- Focus more on
 - Performance analysis (bit error rates),
 - Optimal receivers, and
 - Limits (information theoretic capacity).

ECS 452 Topics

1. Elements of a Digital Communication System
2. Digital Modulation Schemes
3. Optimum Receivers for AWGN Channels
4. Random processes and Power spectral density
5. Channel Coding methods for error detection and correction.
6. Source coding and Entropy
7. An Introduction to Information Theory
8. An Introduction to Multiple-antenna system
9. An Introduction to Multiuser Communications