

UNIVERSITY OF SOUTHERN CALIFORNIA

COMPUTER ENGINEERING

SCREENING EXAMINATION

EE 597

WIRELESS NETWORKS

BASIC READING

1. "Andrea Goldsmith, Wireless Communications", Cambridge University Press, 2005.

Chapter 1: Overview of Wireless Communications

Chapter 2: 2.1-2.3, 2.6-2.9 (radio propagation models)

Chapter 3: 3.1, 3.2.2, 3.3.1, 3.3.2, 3.3.3 (fading)

Chapter 4: 4.2.4 (waterfilling)

Chapter 5: 5.1, 5.3.1 (basics of digital modulation)

Chapter 6: 6.1.1, 6.1.2, 6.3.1, 6.3.2 (performance of digital modulation) Chapter 7: 7.2.1, 7.2.4, 7.3.1, 7.3.2 (diversity)

Chapter 8: 8.1, 8.3 (coding)

Chapter 14: 14.3 (random access) and 14.4

Chapter 15.4.3 (power control)

Chapter 15.1, 15.2 (basics of Cellular, reuse)

Chapter 16: 16.1-16.6 (ad hoc wireless networks)

Papers:

G. Bianchi, Performance Analysis of the IEEE 802.11 Distributed Coordination Function, IEEE JSAC 18(3), March 2000.

D. S. J. De Couto et al., A high-throughput path metric for multi-hop wireless routing, ACM Mobicom 2003.

<http://pdos.csail.mit.edu/papers/grid:mobicom03/paper.pdf>

Charles E. Perkins and Elizabeth M. Royer. "Ad hoc On-Demand Distance Vector Routing." Proceedings of the 2nd IEEE Workshop on Mobile Computing Systems and Applications, New Orleans, LA, February 1999, pp. 90-100.

<http://www.cs.ucsb.edu/~ebelding/txt/aodv.ps>

T.H. Clausen, G. Hansen, L. Christensen and G. Behrmann, The Optimized Link State Routing Protocol, Evaluation Through Experiments and Simulation, Proc of IEEE Symposium on Wireless Personal Mobile Communications (2001).
<http://bit.ly/cN9UpD>

R. Laufer et al., "Multirate Anypath Routing in Wireless Mesh Networks", IEEE Infocom 2009.
<http://www.cs.ucla.edu/~rlaufer/publications/infocom09.pdf>

T. Spyropoulos et al., "Spray and Wait: An Efficient Routing Scheme for Intermittently Connected Mobile Networks", ACM Sigcomm 2005.
<http://conferences.sigcomm.org/sigcomm/2005/paper-SpyPso.pdf>

L. Tassiulas and A. Ephremides, "Stability Properties of Constrained Queueing Systems and Scheduling Policies for Maximum Throughput in Multihop Radio Networks, IEEE Transactions on Automatic Control, vol. 37, no. 12, pp. 1936-1948, Dec. 1992.
<http://www.ece.umd.edu/~leandros/papers/stability-properties.pdf>

S. Moeller, A. Sridharan, B. Krishnamachari, and O. Gnawali, "Routing Without Routes: The Backpressure Collection Protocol," Proc. 9th ACM/IEEE Intl. Conf. on Information Processing in Sensor Networks (IPSN), April 2010.
<http://anrg.usc.edu/~scott/papers/ipsn10.pdf>

Understanding Congestion Control in Multi-hop Wireless Mesh Networks, Sumit Rangwala, Apoorva Jindal, Ki-Young Jang, Konstantinos Psounis, and Ramesh Govindan, in Proceedings of ACM MOBICOM, pp. 291-302, San Fransisco, California, September 2008.
<http://www-bcf.usc.edu/~kpsounis/Papers/wcp.pdf>

Please be aware that these references are for guidance in BASIC knowledge. Ph.D. candidates are screened on the basis of talent, course knowledge, independent reading and experience.
