Class 1 (Tuesday, February 1):
Course overview. Randomized consensus algorithms: Definitions, models, shared-coin algorithms. Basic use of martingales.

Class 2 (Thursday, February 3):
Randomized consensus algorithms continued. Max-registers and counters.
Homework 1a handed out

Class 3 (Tuesday, February 8):
Lower bounds for randomized consensus: definitions, FLP impossibility of deterministic asynchronous algorithms, lower bound for randomized consensus under a strong adversary. More martingales, isoperimetric inequality.

Class 4 (Thursday, February 10):
Lower bounds for randomized consensus continued. Lower bound under a weak adversary.
Homework 1b handed out

Class 5 (Tuesday, February 15):
Information spreading: Model and definitions. Graph conductance and use of martingales to analyze complexity.

Class 6 (Thursday, February 17):
Information spreading continued. Weak graph conductance, additional algorithms.
Homework 1 due
Homework 2a handed out

Class 7 (Thursday, February 24):
Introduction to mobile ad hoc networks. The physical layer. The MAC layer. Contention management.
Homework 2b handed out

Class 8 (Tuesday, March 1):
MAC layer protocol example: 802.11. Theory for single-hop wireless communication: backoff protocols, probabilistic transmission, network coding, and nonadaptive scheduling.

Class 9 (Thursday, March 3):
Homework 2 due
Homework 3a handed out

Class 10 (Tuesday, March 8):

Class 11 (Thursday, March 10):
Homework 3b handed out
Class 12 (Tuesday, March 15):
Distributed algorithms for constructing sparse spanners. Applications include calculating almost-shortest paths in graphs, routing schemes, and synchronizers.

Class 13 (Thursday, March 17):
Distributed algorithms for constructing sparse spanners continued.
Homework 3 due
Homework 4a handed out

Spring Break (March 21-25)

Class 14 (Tuesday, March 29):
Triangulations. Applications to estimating latencies in a network, while calculating only a small part of the actual matrix of average latencies.

Class 15 (Thursday, March 31):
Triangulations continued.
Homework 4b handed out

Class 16 (Tuesday, April 5):
Clock synchronization. Time-diffusion algorithms and lower bounds. Reference broadcasts. Gradient clock synchronization.

Class 17 (Thursday, April 7):
Gradient clock synchronization in static networks and dynamic networks.
Homework 4 due
Homework 5a handed out

Class 18 (Tuesday, April 12):

Class 19 (Thursday, April 14):
Point-to point message routing, with and without location information.
Homework 5b handed out

Class 20 (Thursday, April 21):
Routing. Link-reversal routing algorithms.
Homework 5 due
Homework 6a handed out

Class 21 (Tuesday, April 26):
Link-reversal routing algorithms.

Class 22 (Thursday, April 28):
Establishing network structures in graph models. Dominating sets. Connected dominating sets.
Homework 6b handed out

Class 23 (Tuesday, May 3):

Class 24 (Thursday, May 5):
Homework 6 due
Homework 7 handed out
Class 25 (Tuesday, May 10):

Class 26 (Thursday, May 12):
   Homework 7 due