Intro: History and context and packet switching.

Part 1: Internetworking
  Internetworking: Architectural principles, names, addresses
  Interdomain Routing

Part 2: Resource Management
  End-to-End Congestion Control
  Fair Queuing
  Router congestion control
  Quality of Service
  Router Design

Part 3: Wireless
  Wireless Networks overview and architectures
  Wireless Networks in the real world
  Routing in ad-hoc networks
  Routing in ad-hoc networks
  Sensor Networks

Part 4: Applications, Naming, and Overlays
  Topology
  Overlay Networks 1
  Distributed Hash Tables
  DNS and the Web
  What’s in a name? Names, identifiers, and network architecture

Part 5: Measurement (and Multicast...)
  Measurement
  Data-oriented networking and DTNs
  Multicast

Acknowledgments
This course is primarily based on the graduate level Computer Networks course thought by Srinivasan Seshan at CMU: http://www.cs.cmu.edu/~srini/15-744/508/index.html

References
There is no specific textbook for the course. Instead, there are about 40 papers used as reference for this course. These papers could be seen at the class website here: http://sharif.edu/~kharrazi/courses/40693-881/