

## Final exam

---

- In-class examination
- Tuesday April 22, 6:00-8:00pm IS411
  - CS prelim will follow
- Closed book and notes
- Review topics covered by slide sets 8 to 13
  - see following slides
- Come and see me during office hours if you still have doubts or need further explanations on some topics

1

## Lecture 8

---

- Passive vs. active queue management
- Drawbacks of drop-tail
- RED
  - average queue size
  - drop probability
  - RIO

2

## Lecture 9

---

- Internet transport layer
- UDP
- TCP
  - connection setup and teardown
  - flow and error control
  - RTO computation
  - congestion control
    - slow start
    - congestion avoidance
    - fast retransmit
    - fast recovery
    - AIMD fairness

3

## Lecture 10

---

- TCP throughput periodic model
- TCP connection latency model

*You should focus on the model assumptions and rationale. If needed, formulas will be suggested.*

4

## Lecture 11

---

- IntServ architecture
  - principles
  - components
  - IntServ router architecture
  - service models
  - RSVP
  - limitations

5

## Lecture 12

---

- DiffServ architecture
  - principles
  - components
  - DiffServ Code Point
  - DiffServ ingress router architecture
  - Per-Hop Behaviors
  - examples of EF and AF traffic conditioning
  - examples queuing and scheduling at the core routers
  - admission control
  - limitations

6

## Lecture 13

---

- MPLS
  - main concepts
  - label format and position
  - operation
  - label stacking
  - label allocation and distribution
  - virtual private networks
  - traffic engineering
  - GMPLS