

# EL 6383: High Speed Networks

2020 Spring

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# Course Content

Lecture	Date	Contents	Lab
1	1/30	Introduction	
2	2/6	Backbone Networks and SONET + Lab1 lecture	Lab 1
3	2/13	Multi-Protocol Label Switching (MPLS) + Lab2 lecture	
4	2/20	IP Routing	
5	2/27	Active Queue Management	
6	3/5	Packet Scheduling I	
7	3/12	Packet Scheduling II + Lab3 lecture	
8	3/26	Midterm Exam	
9	4/2	Software Defined Networks	
10	4/9	Network Function Virtualization I	
11	4/16	Network Function Virtualization II + Lab4 lecture	
12	4/23	Resilient Networks	
13	4/30	Advanced Flow and Congestion Control	
14	5/7	Load Balancing in Core and Mobile Edge Computing	
15	5/14	Final Exam	

# Instructor

- H. Jonathan Chao
  - Office: 370 Jay St, Room: 955
  - Tel: 646-997-3302
  - Email: chao@nyu.edu
- Office hour: Tuesday. 2:00pm - 3:00pm  
or email me for an appointment
- When sending me an email, please
  - Include the course # (or it could be falsely classified as trash),

# Pre-Requisites

- EE136, EL5373, or equivalent
- Familiar with at least one programming language (C, C++, Java, Python, PHP, ...)

# Books & Materials

- No recommended Textbook
- Slides, lab materials and reading materials will be uploaded to NYU Classes
- Reference book:
  - Quality of Service Control in High-Speed Networks  
Authors: H. Jonathan Chao and Xiaolei Guo  
ISBN: 0-471-00397-2  
Publisher: John Wiley & Sons, November 2001

# Exam

- Two exams
- Close book
- A letter-size, double-sided reference sheet is allowed
- T/F, short answers, calculations, designs

# Labs

- Lab 1: Tutorial of Python
- Lab 2: Mininet and Bufferbloat
- Lab 3: Network Function Virtualization with DPDK
- Lab 4: OSPF with Fast Re-Routing and Docker
  
- Lab Lectures:
  - Lab 1: 15 mins
  - Lab 2- Lab 4: 20 mins each.
- Lab Hours
  - Two Sessions, each with 2 hours per week (You have to choose one session to attend)
  - TBD
- Lab Location
  - LC 001

TA

TBD

# Grading

- Lab: 25%
  - Lab 1: 3%
  - Lab 2: 6%
  - Lab 3: 8%
  - Lab 4: 8%
- Homework: 5%
- Quiz: 10%
- Midterm Exam: 30%
- Final Exam: 30%
  
- Important: For fairness, no late turn-in will be accepted, no make-up exams, no misconduct

# POLICIES AND PROCEDURES ON ACADEMIC MISCONDUCT

- Please refer to the content in the following link:

<http://engineering.nyu.edu/academics/code-of-conduct/>

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