1. ECE429- Computer Communications Laboratory
Fall 2024

2. Credits: 2
Time and room: Tuesday, 1:00 pm-05:20 pm, Room: FMH 101-C

3. Instructors:
Deepak Vungarala
Office: FMH402
Email: dv336@njit.edu

4. Textbook:
No textbook. Laboratory notes will be provided.

5. Prerequisites:
ECE422

6. Goals:
CLO: Students will have hand-on skills on networking design, TCP/IP protocols and troubleshooting experiences in Linux OS, network design, and administer a network.

ABET objectives: In addition, students will learn and develop:
(b) an **ability to design and conduct experiments**, as well as to analyze and interpret data
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

7. Team and Individual Laboratory Experiments
Each team will comprise up to two members. Report for experiments in Chapters 1 and 2 are individual, and reports for the following chapters are 1/team. Experiments are described in the laboratory manual. The description of the experiments is given in advance, except for the first set, which is given in the first day of class. Prelabs (for Chapters 2 and after) must be completed and submitted to instructor one week before experiments starts.

Prelabs & Reports

Prelabs: Prelabs are for you to get familiar with background information needed for the experiments. Please perform the tasks assigned for the lab and keep notes. The prelab will be a quiz on canvas that needs to be answered during class time. The prelab questions will be evaluated and part of final grade.

Reports: Reports will be questions also presented as a quiz in canvas. The quiz will be answered during class time and it will be evaluated and part of final grade. No handing of document is required. First report will not be counted towards grade and used as practice/familiarization with this reporting method. Reports are individual.

Office Hours:
Online office hours will be available. Meetings at any other times are also welcome but appointment is required. Face-to-face meetings are also possible, but appointment is required. We will follow safety procedures set by NJIT and CDC.

Grading Policy:
Lab execution (and attendance): 25%, Lab reports: 25%, Prelabs: 25%, and Final exam 25%
Attendance requirement: Each lab must be attended on time, tolerance time: 15 mins. Attendance for each experiment is required for grading. I encourage video camera during class time for a better sense of class, at least at start of class.
Late tolerance: Attendance late tolerance: 15 mins (after that, absence is marked). Report and Prelab and Report tolerance: They will be performed in class time. Therefore, no late prelabs/reports are accepted after an absence. Reports (quiz) will be performed a week after we have all finished the experiment. It will be announced. Yet, experiments can be performed in class time or off hours. Experiments from Chapter 4-6 will be demonstrated online, live or in recorded video.

Experiment Outline

Chapter 1. Introductions to the computing equipment and Linux (week 1)
Chapter 2. Tools for examination of computer communication (weeks 2)
Chapter 3. Data-Link Layer protocols (weeks 2-3)
Chapter 4. Network Layer protocols (weeks 4 to 6)
Chapter 5. Dynamic routing with Cisco routers (week 7-8)
Chapter 6. Transport Layer Protocols (weeks 9-10)
Chapter 7. Socket programming (weeks 11-12) -Tentative and subject to change.
Make up week (week 13)
Final exam (week 14)

Academic Integrity policy: The NJIT University Code on Academic Integrity will be followed in all courses. The code states “Each student shall demonstrate honesty and integrity in the completion of all assignments and in the participation of the learning process.”