

# Syllabus: COSC 4300 - 5300 Networks and Internets

## Fall Semester 2021

**Instructor:** Thomas Schwarz, sj

**Website:** <https://tschwarz.mscs.mu.edu/Classes/Networking/index.html>

### Literature

- Tanenbaum & Wetheral: Computer Networks, Prentice Hall
- Forouzan: Data Communications and Networking, McGraw Hill

### Contents

- I. Introduction
- II. Physical Layer
  - a. Description of waves, Frequency Domain, Bandwidth Limits
  - b. Digital and Analog Transmission: Digital to Digital Conversion, Analog to Digital Conversion, Transmission Modes, Digital to Analog Conversion
  - c. Bandwidth Utilization, Transmission Media
- III. Data Link Layer
  - a. Error Correction and Detection
  - b. Data link protocols
  - c. Medium Access Controls
- IV. Network Layer
  - a. Network types
  - b. Routing algorithms
  - c. Congestion control
  - d. Quality of Service
  - e. Internetworking
  - f. IP, OSPF BGP
- V. Transport Layer
  - a. Transport services
  - b. Congestion control
  - c. UDP and TCP
- VI. Application Layer
  - a. DNS
  - b. Email
  - c. WWW
  - d. Streaming
  - e. Content Delivery

### Grading:

Grading is based on the following components.

Quizzes

20%

Homeworks	30%
Midterm	25%
Final	25%

Quizzes and homeworks are administered via D2L. Only submissions in PDF are accepted. Midterm and Final Examination will be conducted only online.

## Synchronous Long Distance Classes

Because I will be using a pencil on occasion, I have to use my own system, which has had difficulties in the past with zoom.

Join Zoom Meeting  
<https://us02web.zoom.us/j/81258461828?pwd=WE1TYlJxRU8ybkhONyt6ZXlFOEZhUT09>

Meeting ID: 812 5846 1828  
 Passcode: 834069  
 One tap mobile  
 +13126266799,,81258461828#,,,,\*834069# US (Chicago)  
 +16465588656,,81258461828#,,,,\*834069# US (New York)

Dial by your location  
 +1 312 626 6799 US (Chicago)  
 +1 646 558 8656 US (New York)  
 +1 301 715 8592 US (Washington DC)  
 +1 346 248 7799 US (Houston)  
 +1 669 900 9128 US (San Jose)  
 +1 253 215 8782 US (Tacoma)

## Class Policies:

You are expected to take part in every class. As according the federal guidelines "merely logging in" is not considered to count as a class attended, you will have to participate in the quizzes in order to have "attended class". According to Marquette policies, I will have to dis-enroll you if you are missing more than two weeks worth of classes.

Because the class is already given in a synchronized manner, you are encouraged to attend via zoom if you feel sick. Please participate in the "know your neighbor" policy of Marquette.