

Syllabus

Course Information

Course Number: CS610
Section: EX81
Course Name: Networking and Security
Term: Fall, 2024
Meeting Time: N/A
Meeting Place: N/A

Instructor Information

Name: Brett Tjaden
Office: CS/ISAT 252
Office Hours: by appointment
Phone: (540) 568-6288
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Course Description and Goals

In this course we will study how data is typically transmitted across computer networks and how multiple networks can be connected to form an interconnected network or "internet". Our main focus will be the network **protocols** that enable heterogeneous machines to communicate with one another, and we will study the widely-used TCP/IP internet protocols in depth. We will also study the basics of network security including firewalls, network-based threats, and intrusion detection systems.

Upon successful completion of this course a student will:

- Be able to give a detailed description of internetworking including its motivation, history, current status, and possible future directions
- Understand the major internetworking protocols including: ARP, IP, ICMP, UDP, and TCP
- Be familiar with some common network security threats and techniques used to combat them
- Apply knowledge gained through reading and discussion in the class projects

Requirements and Policies

Required Texts

- Andrew S. Tanenbaum, Computer Networks, 6th Edition, Pearson, 2020.
- Other materials as provided.

Grading

Projects	80%
Class Participation	10%
Final Examination	10%

Projects: A semester-long project (in four parts) will be assigned during the semester. Each part of the project will account for twenty percent of your final grade. The due dates for these assignments are listed in the “Assignments and Due Dates” section at the end of this syllabus. Each project will be due by 11:59 pm on Sunday evening, and late assignments will be penalized ten points per day.

Class Participation: Ten percent of your final grade will be based on your participation in class discussions online. During each week that is devoted to class discussion you can earn up to three points. Satisfactory participation requires that you read all assigned readings and the discussions in all of the current discussion forums and make thoughtful postings. Quality, not quantity is what I am looking for, and unnecessarily long or numerous posts will not get you full credit for class participation. Please keep the following criteria in mind when you post so that we can have a useful discussion. Quality posts are ones that satisfy at least one of the following criteria:

- Are germane to the subject being discussed
- Stimulate interest or further discussion
- Poses an interesting question about the material or answer someone else's question
- Augments class material by relating personal experience

You will earn one point for satisfactory participation in class discussion on Monday-Thursday of each discussion week, and one point for satisfactory participation in class discussion on Friday-Sunday of each discussion week. You will earn an additional one point if your participation in weekly discussion is outstanding.

Final Examination: A comprehensive final examination will be given at the end of the semester. The final examination will be a two-hour, open book, take-home test. It will be posted on Blackboard on Saturday, December 7th. You may take the exam in any continuous two-hour period on Saturday (12/7), Sunday (12/8), Monday (12/9), Tuesday (12/10), or Wednesday (12/11). Once your two hours are up you must submit your exam on Canvas. The final examination will account for ten percent of your final grade.

Final Grades: There will be no extra credit or make-up work. Letter grades will be assigned based on your final average in the class as follows:

Average	Grade
93-100	A
90-92	A-

Average	Grade
87-89	B+
83-86	B
80-82	B-
70-79	C
0-69	F

Attendance

This is an online class. You are not required to attend any meetings or class sessions.

Academic Honesty

I require academic honesty from everyone who takes my classes. This means that you are not permitted to give or receive unauthorized aid on any graded work. For closed-book examinations you are not allowed the aid of any books, notes, or other information sources, nor are you permitted aid from any person except myself. For graded projects you may consult your textbook and your own notes from class, but you are not allowed the aid of any books, websites, or other information sources not expressly authorized by me. You are also not permitted the aid of any person but myself on project assignments. You are permitted to form study groups if you wish to prepare for the final exam, and reasonable discussion of the projects and final exam in the online classroom is permitted. If in doubt about whether your actions could be viewed as academically dishonest please consult with me in advance and I will advise you appropriately. **If I believe you have been academically dishonest you will fail the course.** For more information, please review the JMU Honor Code at: <http://www.jmu.edu/honor/code.shtml>.

Adding/Dropping Course Policy

Students are responsible for adding and dropping courses in consultation with Lucas Hopper. I do not give "I", "WP", or "WF" grades to students requesting a drop after the deadline except in extraordinary circumstances. The Office of the Registrar (<http://www.jmu.edu/registrar/>) lists all applicable dates and deadlines for the course.

Contacting the Instructor

I will strive to provide a prompt reply (within 24 hours on weekdays) to your questions and comments. I typically will not be available on weekends or days when the University is closed. I expect the bulk of our interaction to occur on the class discussion boards, but feel free to call me or send e-mail if you have an issue that you do not want to post.

Cancellation

JMU's cancellation policy (<http://www.jmu.edu/JMUpolicy/1309.shtml>) provides details of

information dissemination for inclement weather and other emergencies.

Religious Observation Accommodations

If you cannot satisfy a requirement of the course for religious reasons you must let me know at least 2 weeks in advance. In some cases you may be required to "make up" the requirement, in other cases the distribution of requirements may be changed.

Special Needs

If you need an accommodation based on the impact of a disability, you should contact the Office of Disability Services (Wilson Hall, Room 107, www.jmu.edu/ods, 540-568-6705) if you have not previously done so. Disability Services will provide you with an Access Plan Letter that will verify your need for services and make recommendations for accommodations to be used in the classroom. Once you have presented me with this letter, together we will review the course requirements, your disability characteristics, and your requested accommodations to develop an individualized plan, appropriate for the course.

Assignments and Due Dates

Week Beginning Monday	Reading	Online Activities	Project Due Dates [Due Sunday before midnight]
August 19	Syllabus, Chapter 1		
August 26	Chapter 2		
September 2		Discussion #1	
September 9			Project 1 Due
September 16	Chapter 3		
September 23	Chapter 4		
September 30		Discussion #2	
October 7			Project 2 Due
October 14	Fall Break		
October 21	Chapter 5	Discussion #3	
October 28			Project 3 Due
November 4	Chapter 6		
November 11	Chapter 7		
November 18	Chapter 8	Discussion #4	
November 25	Thanksgiving Break		
December 2			Project 4 Due