Course Syllabus

Secure Networking Technologies

COMP 835/COMP 780
Spring 2025

Course Information

Credits: 3 credits (835)/4 credits (780)
Term: Fall 2025
Time/Room: Thursday 9:10 am – 12:00 pm P128

Instructor Information

Name: Tim Finan
Department: Applied Engineering and Sciences Department, UNH Manchester
Office: P143
Email: Timothy.Finan@unh.edu
Phone: 603-641-4340

Office Hours

- As needed, by appointment
- Please call or email if you need to meet

Goals

At the conclusion of the course students will be able to:

- Describe modern TCP/IP networks.
- Explore, configure, and test TCP/IP networks.
- Understand and operate basic Linux operating systems
- Program basic network functionality using sockets API.
- Administer crucial services such as ARP, DNS, DHCP, and others.
- Explore and configure key security topics such as encryption, certificates and endpoint vulnerabilities such as open sockets, SQL Injection or route hijacking

Approach

The approach to Networking Technologies will be a combination of lecture, reading, homework and labs.

The focus will begin with the development of the modern TCP/IP network in order to understand principles. We will then take a hybrid approach which will combine study of network configuration and discovery with socket programming in order to present a balanced view on roles such as Network Administrator and Application Programmer.

Texts and Resources

- **Computer & Internet Security**: A Hands-on Approach, 3rd Edition by DR Wenliang Du

  - https://www.handsonsecurity.net/index.html
  - https://www.handsonsecurity.net/resources.html

- **Cisco Packet Tracer** - https://www.netacad.com/courses/packet-tracer
- **VirtualBox** - https://www.virtualbox.org/

Expectations

- Students will attend class and actively participate.
- Students will keep up with the reading and homework.
- Students will come prepared to work as if in a professional setting.
- Students will always be respectful and do their best and help each other.
- Students will represent their work honestly.

Grading

- 20% Participation/Attendance
- 30% Quizzes and Exams
- 50% Homework/Assessments* and Labs

  * Homework may include a short written assessment given in the class following the date an assignment is due

Late Assignments

Homework assignments that are submitted late will only be able to achieve grades as follows:

- up to 1 weeks late: Deduct 5%
- 1 - 3 weeks late: Deduct 10%
- 3+ weeks late: Deduct 20%

Submissions

Unless otherwise specified all submissions should be in the form of a rich text document which captures code, explanation, and relevant output. Word documents (docx), Rich Text Format documents (rtf) and PDFs are acceptable. Jupyter Notebooks exported to PDF are encouraged. Unless necessary (to capture GUI displays, etc.), please avoid submitting screenshots of your laptop.

The actual submitted file should be named such that it includes the UNH username of the student, the assignment name (shorthand is acceptable) and the semester and week in which it is assigned. Do not include spaces or symbols other than underscore"_" or dash "-" as delimiters. For example, since my UNH username is "johndoe", my submission for week 2 sockets homework would be "johndoe-sockets-Fall23_wk2.rtf".

University Disability Accommodations

The University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you think you have a disability requiring accommodation, you must register with Student Accessibility Services (SAS) http://www.unh.edu/studentaccessibility.

Contact SAS at (603) 862- 2607 or SAS, please provide me with that information privately so that we can review those accommodations.

Academic Integrity Policy

Academic integrity is a core value at the University of New Hampshire. The members of its academic community both require and expect one another to conduct themselves with integrity. This means that each member will adhere to the principles and rules of the University and pursue academic work in a straightforward and truthful manner, free from deception or fraud. The policy can be found in the annual publication of the Student Rights, Rules, and Responsibilities.

Completing your own work is essential to learning. Copying the work of others is not learning. You are expected to do your own work and not submit as yours something done by others.

Collaborative work has clear requirements regarding the nature of collaboration. Grading is based on your **individual contribution to the collaborative work**. If unclear, you must consult with the course instructor on what is allowed. It is your responsibility to get such clarification.

Whether done individually or in collaboration, **submitted coursework must ALWAYS give clear attribution to the source(s) of content** included or integrated in your work. The instructor will reduce your grade for work that does not include proper attribution. Giving attribution has many forms, depending on how content that is not yours is used in your work. Thus, you may need to:

- Annotate the content that originates or has been modified and integrated in your work.
- Reference the source(s) you used, whether articles, forum or blog posts, public GitHub repos, tutorial videos, or individual help.
- Give credit to individuals who have helped you, whether peers, tutors, lab/tech assistants, course instructor, or any other person (friend, relative, etc.)

Do not work on behalf of someone else and **do not provide your work products to others**. If you do, you commit an act of academic dishonesty. There is no way to know whether those who get your work products intend to submit them as theirs. Equally important, ***this is NOT how you help someone learn.***

There are consequences if you deviate from the course and university academic integrity policy. For academic integrity misconduct, you may receive no credit for the assignment in question. Persistent academic misconduct may result in you failing the course.

You will receive notice of the academic misconduct allegation from the course instructor. The course instructor will meet with you and give you the opportunity to respond. If the violation stands, the course instructor will report it to the Office of Community Standards.

Bottom line, **do not cheat, plagiarize, or facilitate academic integrity misconduct**. It is very important that you review the University's Academic Integrity policy. (https://catalog.unh.edu/srrr/student-policies-regulations/academic-integrity/).