

SEC300 - Radio Frequency Security Syllabus

Class Day/Time

Tuesdays 4:00pm - 5:15pm

Location: Joyce 310

Your Instructor

Instructors: Cole Davis-Brand, Micah Kezar, Adam Goldstein

E-Mail: cole.davisbrand@mymail.champlain.edu, micah.kezar@mymail.champlain.edu, agoldstein@champlain.edu

Course Description

Radio Frequency Security is a five week one credit section of SEC300 that touches on radio frequencies and associated security protocols and principles. This course will dive into the ways radio frequencies affect our daily lives and how common protocols like Wi-Fi, Bluetooth, Cellular, Radio function on a detailed level. Additional emphasis will be put on the security methods that are implemented in different protocols. Students will be able to gain hands-on experience working with RF hardware as well as learning the legal and ethical implications related to RF security.

Learning Objectives

Upon completion of the course, students will be able to:

- Understand the basic properties of radio frequency
- Learn about how common radio frequencies are used in our daily lives
- Grasp the legal implications for improper use radio frequencies
- Discover governing bodies that are associated with the legality of radio frequencies
- Perform case studies on real life examples of times radio frequencies were used with malicious intent
- Relate radio frequency understanding to cybersecurity principles
- Gain hands on experience practicing safe radio transmission and reception
- Gather awareness of the legal responsibilities surrounding transmission and reception
- Build RFID/NFC tags and understand the potential dangers associated with contactless communication

Office Hours

If you'd like to meet with an instructor for this course, don't hesitate to contact us. Schedule office hours with Adam Goldstein [here](#). For appointments with Cole or Micah, email us or speak with us in class to arrange a meeting time.

Teaching Methodology

Lectures

Lectures will play a brief yet crucial role in each class, introducing new topics to provide a foundational understanding of key concepts and facts. These sessions are essential for grasping the details necessary for success in labs and discussion posts, helping students integrate theoretical knowledge with practical applications. Additionally, lectures will serve as a bridge, relating the content to upcoming lab and project activities.

Labs

Hands-on learning is integral to this course, with labs serving as a crucial component. These labs play a dual role—reinforcing challenging concepts and offering real-life applications of the material. A strong emphasis is placed on self-teaching and problem-solving, encouraging students to independently navigate through challenges and troubleshoot issues. This approach not only deepens understanding but also cultivates valuable skills in tackling real-world problems.

Readings

It is important to note that readings should not be anticipated on a weekly basis. Instead, they will be assigned as necessary and relevant throughout the course. When readings are assigned, students are expected to thoroughly engage with the material. It is emphasized that readings will not be given as busy work; they will only be assigned when the content is directly pertinent to the course.

Discussion Posts

Discussion posts serve as an excellent platform for students to articulate their thoughts and share their research findings. These posts not only provide an opportunity for individual expression but also offer a collective insight into the diverse perspectives within the class.

Quizzes

Quizzes in this course serve as focused assessments, designed to highlight essential details presented in lectures and class discussions. Their primary purpose is to reinforce key concepts

and ensure a comprehensive understanding of the material. It's important to note that the intention behind quizzes is not to be tricky or present challenges through complex wording.

Grading

Grades will be awarded in accordance with the Champlain College Grading System for undergraduate students. Final Grade Breakdown can be viewed in Canvas and is subject to change with notification.

This course is pass/fail.

Grading Structure

Attendance: 15%

Quizzes: 20%

Discussion Posts: 30%

Labs: 35%

Class Policies

Assignments/Homework & Late Work

In this course, assignments are expected to be submitted by the specified due dates. However, late submissions will still be accepted and graded without a point deduction. It is highly recommended to adhere to the original deadlines to make the most out of the learning experience. The course operates on a pass/fail grading system, emphasizing completion and participation over penalizing for tardiness.

Attendance Policy

Attendance in this course constitutes 15% of your overall grade, and it will be recorded at each class session. Given the condensed nature of this 5-week course, it is imperative not to miss any class, as each week's attendance contributes significantly to your total class time.

Respectful Environment

This class is committed to maintaining a respectful and inclusive learning environment. All students are expected to engage in discussions, activities, and interactions with courtesy and consideration for diverse perspectives. Disagreements and debates are welcome, but they should be conducted in a constructive and respectful manner. Discrimination, harassment, or any form of disrespectful behavior will not be tolerated.

Confidentiality and Mandatory Reporting

As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. I also have a mandatory reporting responsibility related to my role as a faculty member. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. If you come to me with non-course-related concerns, I will seek to keep the information you share private to the greatest extent possible. However, please understand that I am legally required to share with designated Champlain College offices information regarding sexual misconduct such as sexual assault, sexual exploitation, and partner or relationship violence.