

Syllabus

Course Information

- **Course Number and Title:** CIS 3636C - Cyber Security Design Lab2
- **Credit Hours:** 4 credits: Lectures 3 Hours, Lab: 2 Hours
- **Academic Term:** Spring 2026

Instructor Information

- **Instructor:** Dr. Wesam Al Amiri
- **Office Location:** BARC- 1103
- **Office Hours:** M (2PM-3PM) and TR (12:30PM-1:30PM)
- **Email address:** walamiri@floridapoly.edu

Course Description

Course Delivery and Course Description

- **Delivery Mode:** In-person (IST 1030, M: 3:00PM-4:50PM and TR: 9:30-10:45 am)
- **Course Website:** Canvas
- **Official Catalog Course Description:** THIS COURSE IS CONTINUATION OF CYBERSECURITY ENGINEERING LAB DESIGN 1. STUDENTS WILL BE REASSEMBLED INTO TEAMS AND TASKED TO REFINE PREVIOUSLY CREATED PROTOTYPE DEVICES OR SYSTEMS. AFTER REFINEMENT, STUDENT TEAMS WILL PERFORM TESTING ALONG WITH SIMULATION, VERIFICATION, AND VALIDATION OF THEIR PROJECTS. TEAMS WILL THEN ENGAGE IN PEER-TO-PEER LEARNING WITH OTHER LABORATORY GROUPS AND EVENTUAL CYCLE THROUGH ALL THE STUDENT GENERATED LABORATORY EXERCISES EXPANDING THEIR PROTOTYPE WORK WITH THE FOCUS ON HUMAN, HARDWARE, AND SOFTWARE INTERFACES. TOPICS, INCLUDING NETWORK, SOFTWARE AND HARDWARE SECURITY, DIGITAL ELECTRONICS, COMPUTER ARCHITECTURE AND ORGANIZATION, DATA STRUCTURES AND ALGORITHMS, WILL SUPPORT THE PROJECT-BASED-LEARNING ACTIVITIES AS CONNECTED IN REAL WORLD CYBERSECURITY ENGINEERING AND CYBER PHYSICAL SECURITY APPLICATIONS AND SYSTEMS.
 - **Course Pre and/or Co-Requisites:** CIS 3635C - Cybersecurity Design Lab 1, CEN 4033 - Secure Software Engineering and EEL 4768 - Computer Architecture and Organization.
 - **Communication/Computation Skills Requirement (6A-10.030):** N
- **Required Texts and Materials:**
- Required textbooks: Mark M. Tehranipoor and Swarup Bhunia, *Hardware Security: A Hands-on Learning Approach*, 1st Edition, @ Morgan Kaufmann, ISBN#: 9780128124772

Course Learning Outcomes (CLOs)

- CLO-1 Refine and enhance previously developed cybersecurity prototypes using advanced techniques.
CLO-2: Design and implement testing, simulation, and verification strategies for prototypes.
CLO-3: Evaluate the human, hardware, and software interface of cybersecurity systems.
CLO-4: Develop and execute security measures using hardware and network-based solutions.
CLO-5: Demonstrate effective collaboration and communication in multidisciplinary teams.
CLO-6: Analyze the effectiveness of security measures against various cyber threats.

Alignment with Program Outcomes (ABET)

The Computer Engineering program at Florida Polytechnic University has aligned its Student Outcomes (SO) with ABET-EAC Criterion 3 Student Outcomes (1-7).

These outcomes are:

1. **Identify/Formulate:** An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. **Apply Engineering Design:** An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. **Communicate Effectively:** An ability to communicate effectively with a range of audiences.
4. **Ethical/professional responsibilities:** An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. **Collaborate in a Team:** An ability to function effectively on a team whose members together provide leadership, create a collaborative environment, establish goals, plan tasks, and meet objectives.
6. **Conduct Experimentation:** An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. **Apply New Knowledge:** An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Program Outcome (ABET)	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5	CLO-6
Identify / Formulate Problems	X		X			X
Apply Engineering Design	X	X		X		
Communicate Effectively					X	
Ethical & Professional Responsibilities	X		X	X		X
Collaborate in a Team					X	
Conduct Experimentation		X				X
Apply New Knowledge	X	X		X		X

Course Policies

Attendance

- Students in courses are expected “to attend all of their scheduled University classes and to satisfy all academic objectives as defined by the instructor” (University Policy, FPU-5.0010AP).
- Exceptions to any attendance requirements may be made on a case-by-case basis.

Participation

Students are expected to participate in the classroom experience. The use of earbuds/headphones during class is specifically not allowed and students who engage in this behavior may be asked to leave the class for the day (noting exceptions for authorized accommodations). In addition, students who routinely do not bring materials to class that are required for participation, will not be given credit for class attendance, and if this becomes a pattern of behavior, may be asked to leave the class for the day. Persistent problems with participation may result in a [code of conduct](#) referral.

Late Work/Make-up work

- No makeup tests or quizzes, except in case of emergency, e.g. illness and accident. For makeup tests, a medical certificate is required and the instructor must be notified in advance of the test.
- Exceptions to any attendance requirements may be made on a case-by-case basis.

Grading Scale

The grading scale that will be used in the course is: (See also [University Grading Policy](#)).

Grade	Percentage
A	100 – 90
A-	89 – 87
B+	86 – 84
B	83 – 80
B-	79 – 77
C+	76 – 74
C	73 – 70
C-	69 – 67
D+	66 – 64
D	63 – 62
D-	61-60
F	59 – 0

Percentages that fall between grades will be rounded up. Grades will be posted to Canvas for reference only, and students should make sure they are recorded correctly.

Grades for each assignment will be posted to Canvas and students should make sure they are recorded correctly.

However, there is no guarantee that the percentages or projected grades provided there are correct.

The instructor will calculate final percentages and will determine final grades regardless of Canvas calculations.

Assignment/Evaluation Methods

Grade items: Quizzes, assignments, and Final Exam throughout the semester after the completion of a specific topic area – see the schedule for more details.	Points
Attendance/Participation	10
Weekly Lab Assignments	20
Midterm Exams	20
Final Project	30
Final Exam / Report on new knowledge and presentation	20
Total	100
Departmental Requirements: Minimum 30% or higher must be in the individual in-class assessments and evaluations.	

TENTATIVE COURSE SCHEDULE

weeks	Date	Topics	Classes	Quiz	Assignments/Projects
1.	Jan 12 – 16	Course Introduction; Intro to Hardware Security and Network Security.	2		Lab Assignment 1: Review Lab 1 Outcomes
2.	Jan 19 – 23	Physical Attacks and Countermeasures (PUFs, TRNGs).	2		Lab: Simulating PUFs/Attack Scenarios
3.	Jan 26 – 30	Network Security Basics; ARP Poisoning and IDS/IPS Setup.	2		Lab: ARP Poisoning and NIDS Setup
4.	Feb 2 – 6	FPGA Security and Hardware Trojan Detection Techniques.	2		Lab: FPGA Security Implementatio n
5.	Feb 9 – 13	Cryptography Concepts and Applications.	2		Lab: Data Encryption & Digital Signatures
6.	Feb 16 – 20	Incident Response and Forensic Tools (e.g., Autopsy).	2		Lab: Incident Response Simulation
7.	Feb 23 – 27	Testing and Validation of Cybersecurity Prototypes.	2		Midterm Review
8.	Mar 2 – 6	Midterm Exam and Peer-to-Peer Lab Exchange.	2		
10.	Mar 9 – 13	IoT Device Security and Management.	2	Midterm Exam	

11.	Mar 23 – 27	Side Channel Attacks and Countermeasures.	2		Lab: IoT Security Practices
12.	Mar 29 - Apr 3	Network Forensics and Packet Analysis.	2		Lab: Power/Timing Analysis
13.	Apr 6 – 10	Vulnerability Management with OpenVAS.	2		Lab: Packet Capture and Analysis
14.	Apr 13 – 17	Advanced Malware and Application Security Techniques.	2		Lab: Vulnerability Assessment
15.	Apr 20 – 24	Human, Hardware, and Software Interface Integration.	2		Lab: Malware Analysis Techniques
16.	Apr 28	Course Review and Final Project Presentations.	1		Final Project
17.	Apr 29 – May 1 2026	Reading Days – No classes	0		
18.	May 4 – 8, 2026	Final Exam Days	2	Final Exam	
		Total	30		

Note: The famous quote “Tell me and I forget; teach me and I may remember; involve me, and I learn.”

**WITHDRAWAL DATE WITHOUT ACADEMIC PENALTY DEADLINE (W ASSIGNED):
APRIL 11, 2026**

Academic Support Resources

- **Library:** Students can access the Florida Polytechnic University Library through the University website and [Canvas](#), on and off campus. Students may direct questions to library@floridapoly.edu.
- **Peer Learning Strategists (PLS):** Are specially trained student leaders who help their peers strategize approaches to course content and work through solution methods. PLS work in collaboration with the courses they support so the content and methods are aligned with your instructors’ expectations. Students can meet with a PLS in The Learning Center, which is located on the first floor of the Innovation, Science and Technology (IST) building in room 1019.
- **Academic Success Coaches:** All students at Florida Poly are assigned an Academic Success Coach. Your Academic Success Coach can assist you with academic success strategies. Please visit the Student Success Center on the second floor of the IST building to meet with an Academic Success Coach.
- **Writing Center:** Located on the second floor of the IST (2059/2061), the Writing Center helps students to develop their writing and presentation skills. Consultations are available in person and virtually. For more detail, visit <https://floridapoly.edu/writingcenter>.

University Policies

Reasonable Accommodations

The University is committed to ensuring equal access to all educational opportunities. The University, through the Office of Disability Services (ODS), facilitates reasonable accommodations for students with

disabilities and documented eligibility. It is the student's responsibility to self-identify as a student with disabilities and register with ODS to request accommodations.

If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course through the [ODS student portal](#) and communicate with your instructor about your approved accommodations as soon as possible. Arrangements for testing accommodations must be made in advance. Accommodation is not retroactive.

If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring accommodation, please contact ODS as soon as possible.

The Office of Disability Services (ODS):
DisabilityServices@floridapoly.edu
(863) 874-8770
The Access Point
[ODS website: www.floridapoly.edu/disability](http://www.floridapoly.edu/disability)

Accommodations for Religious Observances, Practices and Beliefs

The University will reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. (See [University Policy](#).)

Title IX

Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment, sexual assault, dating violence, domestic violence and stalking. Resources are available if you or someone you know needs assistance. You may speak to your professor, but your professors have an obligation to report the incident to the Title IX Coordinator. Please know, however, that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University [Ombuds Office](#), BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at [Peace River Center](#), 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment. The [Title IX Coordinator](#) is available for any questions to discussion [resources and options](#) available.

Academic Integrity

The faculty and administration take academic integrity very seriously. Violations of [academic integrity regulation](#) include actions such as cheating, plagiarism, use of unauthorized resources (including but not limited to use of Artificial Intelligence tools), illegal use of intellectual property, and inappropriately aiding other students. Such actions undermine the central mission of the university and negatively impact the value of your Florida Poly degree. Suspected violations will be fully investigated, possibly resulting in an academic integrity hearing and sanctions against the accused student if found in violation. Sanctions range from receiving a zero on the exam or assignment, to expulsion from the university. Repeat offenders are subject to more severe sanctions and penalties.

Any "special" instructions that are appropriate for academic integrity and the course should go here. *(It is essential that a heading and a statement on what constitutes, includes, academic integrity be included in the syllabus, and that the students be made aware of academic integrity at the beginning of a course.)*

Recording Lectures

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. Recordings may not be used as a substitute for class participation or class attendance. Recordings may not be published or shared in any way, either

intentionally or accidentally, without the written consent of the faculty member. Failure to adhere to these requirements is a violation of state law (subject to civil penalty) and the student code of conduct (subject to disciplinary action). Recording class activities including, but not limited to, lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), and invited guest speakers is prohibited.

*Recording class activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), and invited guest speakers is **prohibited**.*

Disclaimer: Changes in syllabus and assignment sheets may be modified as deemed appropriate. All changes will be announced in class and in Canvas Announcements.

Naming Files: Name the file as the Assignment or Exam, e.g. Assignment # 1, Midterm #1, etc. DO NOT Put any other extensions of your name, assignment description, course name, etc. The canvas recognizes your name, the course name and course number.

Civility and Collegiality

Faculty and students come to the university for the same reason, which is to participate in a highly professional educational environment. To that end, both students and faculty are expected to treat each other with mutual regard and civility. Communication, written, oral and behavioral, between faculty and students must remain respectful. Within and outside of the classroom, students must refrain from derogatory comments toward the faculty member and their fellow students, and faculty as well must refrain from derogatory comments toward their students. Faculty and students should address each other with respect, in accordance with the wishes of the faculty and the students: for example, no one should be addressed by their last name alone.

Faculty from the outset of a course can and should specify what constitutes activities and behavior that take away from, that diminish, the educational environment. An individual student's distracting behavior impedes the education of fellow students, which itself is a form of disrespect. Civility and collegiality also include respecting each other's time: for example, neither students nor faculty should arrive late to class (unless unforeseen, pressing circumstances prevail); faculty should be present at the posted office hours; and students and faculty should be punctual when meeting times are scheduled. In more general terms, collegiality means respecting the right of both faculty and students to participate fully and fairly in the educational enterprise.

