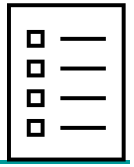
Project Course Introduction

16 March 2025
Lecture 1

A Project Course



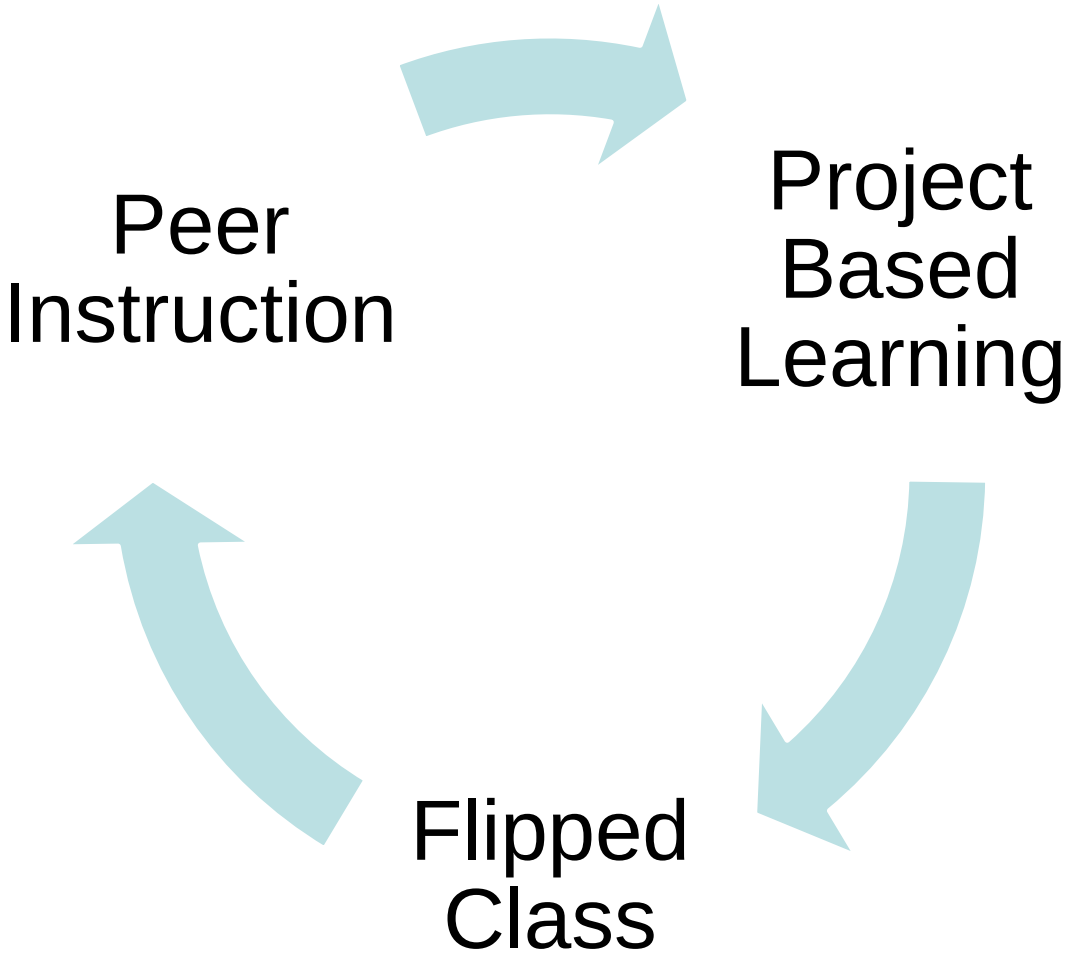
What's Going to Happen

- You're going to do 3 cyber security related tasks
- You will figure out how to do most of the work on your own
- You will present your results to the whole class
- You will test the class to ensure they understood
- You will have lots of class time to work on the tasks

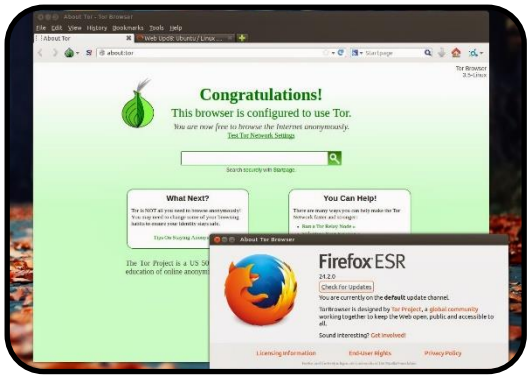
What's Not Going to Happen

- I'm not going to lecture much – Just today
- There's no exam
- You're not going to have the same assignment as everyone else

What kind of course is this?



The tasks in short



Research a Cyber Security Topic

Perform a Network Cyber Security Lab

- Infrastructure
- Attack

Perform Web Site Hacking Tasks

Schematic Course Schedule

	#	Subject
	1	Course introduction - Network cyber security basics
Part 1	2–3	Cyber security research work
	4–5	Cyber security research presentations
Part 2	6–7	Network protocol cyber security lab work
	8–9	Network protocol cyber security lab presentations
Part 3	10–11	Web cyber security lab work
	12–13	Web cyber security lab presentations

Part 1: Research (20%)

Select a network cyber security topic

Research background on your own

Select a recent high quality academic article on the topic

- Read
- Analyze

Prepare a 2-page summary on the paper

Present the topic and paper to everyone

Give a quiz to everyone on the presentation

Part 1: Details

Must register the topic before you do it – Moodle Assignment

- No duplicates

Must select a paper from a top-tier conference or journal

- Starter list in the assignment file

Report must be based on the report template

- On Moodle

Each presentation is 20 minutes

- Background material
- Paper details
- Reflection

3-5 Question multiple choice quiz

- Must give automatic grades
- Must include what each student answered

Part 2: Network Security Lab (35%)

Select a lab from SEED 2.0 labs

- Sign up list on Moodle

Follow the lab instructions

Record your progress and results

Present the lab results to everyone

Give a quiz to everyone on the lab and its results

Part 2: Details

Must register which lab

- Moodle assignment

Perform the lab work on your own

- Take screen shots
- Record code

Report must be based on the template

- On Moodle

Each presentation is 30 minutes

- Intro to goals and techniques
- How the lab works
- Live demo

3-5 Question multiple choice quiz

- Same as before

Part 3: Web Security (35%)

Download the OWASP Juice Shop web abb

Learn the code base and analyze behavior

Hack the web app with the help of the documentation and hacking tools

- Earn 12 stars on the app
- Do at least one ✶✶✶ challenge
- Do at least one ✶✶✶✶ challenge

Present the 2 highest ✶ hacks to the class

Give everyone a quiz on one of the hacks

Part 3: Details

There are many challenges on OWASP Juice Shop

- 1, 2, 3, 4, 5, 6 Stars
- Some have solution guides

Run the tool locally so you can try all of the challenges

Register to present the 2 highest star hacks

- No duplicates
- No attacks with walk-throughs in the manual or website

3-5 Question multiple choice quiz

- Same as above

Course Grade Details

- 20% Research presentation
- 35% Network cyber security lab
- 35% Web security hacking
- 10% grades on quizzes you take

Rules and Ethics

You are here to learn and gain knowledge

Your goal should be to gain from this course

Project based courses expect you to honestly perform work on your own and synthesize it

You can probably find solutions to the labs and OWASP Juice Shop hacking if you look hard enough

- I will not accept obviously copied solutions

Use:

- Learning aids
- AI tools
- books
- websites,

- But the final result and presentation must be your own

You will learn hacking techniques from the course. Do not use them to break the law or negatively affect Kinneret or its IT infrastructure.

For the rest of today

Sample research presentation

Border Gateway Protocol

What is it?

How can it be hacked?