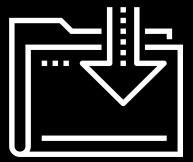
Syllabus

Cybersecurity Boot Camp



Cybersecurity Boot Camp Syllabus

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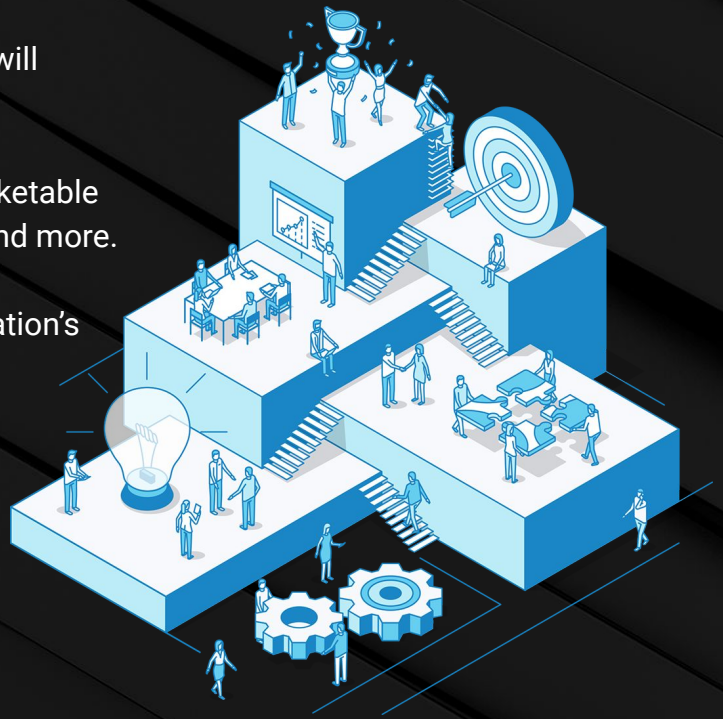
Section 1: Course Overview

Welcome to the Cybersecurity boot camp! This is a rigorous and fast-paced course that teaches the practical, technical skills that will enable you to build robust web applications.

Throughout the course, you will gain proficiency in numerous marketable technologies such as Wireshark, Kali Linux, Metasploit, Nessus, and more. You will also learn methods, techniques, and best practices for convincingly conveying the severity of the risks facing an organization's security posture.



Course Outcomes

By the time you graduate, you will be able to:

- Understand cybersecurity threats, actors, and methods; advise on cybersecurity best practices and risk management strategies; and develop best practices for implementing security strategy policies across an organization.
- Configure, administer, and secure Linux and Windows servers. Write Bash and Powershell scripts to automate security tasks.
- Understand and implement network theory. Analyze traffic flow over a network to troubleshoot issues and identify malicious activity and suspicious patterns of behavior.
- Encrypt and decrypt data using symmetric and asymmetric algorithms.
- Configure machines on a virtual network and deploy them to the cloud. Configure a server to serve a vulnerable web application.
- Use penetration testing to examine network, system, and web vulnerabilities. Identify and exploit web vulnerabilities and suggest mitigation strategies. Conduct vulnerability assessments using tools like Nmap and Metasploit, and then exploit those vulnerabilities.
- Configure a SIEMs and perform network security monitoring. Conduct a forensics investigation to recover and analyze data and prepare technical evidence.

Curriculum

Unit	Security Fundamentals (Modules 1–2)	Systems Administration Fundamentals (Modules 3–7)	Networking and Cloud (Modules 8–14)	Offensive Security (Modules 15–18)	Defensive Security (Modules 19–22)	Career Prep and Final Project (Modules 23–24)
Description	Learn to think like a cybersecurity professional by assessing threats and mitigating risks. Security from an organizational perspective, governance, risk, and compliance. Understand how security controls impact an organization and its employees.	An introduction to Linux and Windows systems administration. Practical experience working with the command line and commands that are prominent in IT roles. Configure and audit servers, and harden them against malicious attacks. Programming via Bash and PowerShell.	An introduction to network configuration, design, protocols, and data communication. Network security, cryptography, and cloud virtualization and security.	Web vulnerabilities and hardening. Windows and Linux penetration testing, using tools such as Nessus and Metasploit.	SIEM with Splunk. Setting up security monitoring, alerts, dashboards, and custom reports. Using forensic tools to recover deleted data. Project 3 involves attacking and monitoring vulnerable VMs as pen testers and SOC analysts.	Certification prep and review. Interviewing and career prep practice. You will present your final, independently researched project in a mock cyber conference event.
What You'll Learn	• CIA triad • Risk mitigation • Audits, business continuity, and disaster recovery plans • Governance frameworks	• Terminal and Bash • Linux SysAdmin fundamentals • Archiving and logging data • Bash scripting and programming • Windows administration and hardening	• Networking fundamentals • Cryptography • Network security • Web development • Cloud security • Project 1: Securing Cloud Apps	• Web vulnerabilities • Linux penetration testing • Windows and Active Directory penetration testing • Project 2: Offensive Security CTF	• SIEM I • SIEM II • Forensics • Project 3: Building a Security Monitoring Environment	• Certifications • CompTIA Security + • Research and technical demonstration

Section 2: Course Structure

Learning Experience

Each week of your course is structured around a specific topic and set of skills. You'll also complete a Challenge assignment to apply the skills and knowledge that you learned throughout the week.

Instructor-Led Classes	Office Hours	Weekly Challenge Assignments
All virtual classes will be hosted on Zoom. You can access these sessions through your class calendar. During the classes, your instructional team will lead demonstrations, as well as guide you through independent activities and interactive group work. You will also use Slack to communicate and collaborate with your instructor and peers. Class recordings are available in Canvas.	Open office hours are held before and/or after every class. During office hours, your instructional team will be available for general check in, to discuss class topics, and to provide industry and professional insights.	Cap off each week by demonstrating the skills that you learned in a Challenge (homework) assignment. Challenges are graded assignments on which you will receive feedback.

Learning Technology

The online boot camp learning experience is centered on the following three technologies:

Canvas LMS	Our learning environment is built on the leading cloud-based Canvas Learning Management System. This is your main hub for all course curriculum and assignments.
 **Slack**	Slack, the popular business collaboration tool, is our core learning community space. On Slack, you will communicate with peers and instructional staff to celebrate victories and troubleshoot challenges. You can access Slack through your web browser or install the app on your computer and/or mobile device.
 **Zoom**	Zoom is where we hold all virtual classes. This video conferencing software allows us to connect in real-time with video, audio, screen sharing, and chat. You will access Zoom directly through the course. Be sure to have your headset with mic and webcam ready. We also highly recommend using a second monitor during these sessions so that you can practice cybersecurity as you interact with your classmates.

Minimum Technology Requirements

To successfully use the tools and technologies required in this course, you need the right equipment.

Here's what you need to get started:	Here's what you'll need before your first virtual session:
Laptop with Mac or Windows operating system (Note that you cannot use Linux in this course.)	Webcam
8 GB RAM and 64-bit dual processor	Headphones with a microphone
High-speed internet connection (We recommend a download speed of at least 25 Mbps and an upload speed of at least 5 Mbps.)	An external monitor that is compatible with your laptop (highly recommended for Zoom sessions)

Course Feedback

We believe in continually improving our program, whether it's building in more targeted practice to support your learning, adding new content to address the evolving needs of a dynamic industry, or providing your instructor with innovative ideas to tailor the experience for your class. For this reason, we ask for your feedback at the end of each module, at the course midpoint, and at the end of the program. We appreciate your honest responses.

Section 3: Course Assessments and Requirements

Grading Policy

For each assignment, you will receive a numerical and letter grade as shown in the following table. You will receive an Incomplete for assignments that do not meet the baseline requirements. All assignments that do not receive Incompletes count toward graduation requirements. See your enrollment agreement for the minimum grade requirements.

A+	100	**B+**	88–91	**C+**	78–81	**D+**	70–71	**F**	< 61
A	95–99	**B**	85–87	**C**	75–78	**D**	65–69		
A–	92–94	**B–**	82–84	**C–**	72–74	**D–**	62–64		

Assessment Criteria

You will receive an overall grade for the course based on the following table. Note that your two lowest Challenge assignment grades (or skipped assignments) will be dropped.

Assessment	Description	Number	% of Final Grade
Projects	At key points in the curriculum, you will complete projects where you will apply key technologies learned in the previous units.	4	60%
Challenge Assignments	Weekly individual assignments where you'll apply key skills learned in a module. You will receive rubric-based feedback, and the lowest two grades will be discarded.	18	40%

Graduation Requirements

Graduates of the program will receive a certificate of completion from the university. In order to graduate from this course and receive your certificate, you must fulfill the following requirements:

01 Miss no more than eight virtual classes (via Zoom).

02 Complete all four projects.

03 Miss no more than two Challenge assignments.

Section 4: Support

Your Support Community

We believe that a robust support team is essential to helping you achieve success in the program. Here are the core members of your support team:

Instructor	Your instructor is the lead facilitator for your learning experience. Your instructor will manage all virtual classes and Office Hours, guide the TA team, and monitor your progress.
Teaching Assistants (TAs)	TAs provide support and guidance. TAs attend virtual classes, helping to troubleshoot issues and lead small breakout groups. TAs also provide additional Office Hour sessions on Zoom.
Student Success Manager (SSM)	Your SSM oversees your experience and assists you with any non-curriculum needs, including questions about course structure, delivery, and policies. If you don't know where to go, who to ask, or what to do, ask your SSM!
Learning Assistants	The Learning Assistant team is available to answer quick coding and concept questions via Slack outside of class hours. Simply use the #AskBCS tool in Slack to connect.
Tutor Network	If you need additional help to get back on track, your SSM can arrange 1:1 tutoring support.
Your Peers	You'll chat with other students, ask for help, and assist others in class and Slack. You'll also connect in group projects and study groups.
Career Services	Your Career Coach and Career Materials Advisors will support you in becoming employer competitive. Career services is an optional service available throughout the program.

Support: Tips for Success

We're excited that you've committed to this boot camp. It may be difficult at times, but with your dedication and our support, you will have the tools you need to thrive!

- Establish your weekly schedule upfront. Identify a safe, quiet place to work and discuss your plans with family and friends to ensure you get the support and space you need.
- Sync your class calendar to your phone or web calendars so that your assignment and virtual class dates are always handy. Your learning environment contains an easy iCal link.
- Attend as many Office Hour sessions throughout the week as you can.
- Remember that you are not alone, especially early on in the course. If you are struggling, it means that others are too. Make connections. Help your peers and ask for their help as needed. Set up a study group.
- Connect with your Student Success Manager (SSM) for any non-curriculum support. Your SSM is entirely dedicated to your success and can guide you with any support you need.
- Focus on the big picture—beyond the specific skills of the week. A key element of this boot camp is "learning how to learn." Skills will change as technology changes, but the critical thinking techniques you learn in this course will help you evolve with the field.
- Celebrate your wins and those of your peers. If you're feeling proud of a creation or a hurdle that you've overcome, share it in Slack!

Section 5: Expectations and Policies

Time Expectations

You should expect to spend about 20–30 hours a week working on your course. The actual amount of time you spend will depend on a number of factors, including your pace, difficulty of the week, and attendance at optional sessions. It's a good idea to track yourself early in the course to identify how long you spend on each section and adjust expectations accordingly.

Late Assignment Policy

Please remember to check your challenge assignment due dates. It's important that you follow these dates to stay on target and receive timely feedback. The program moves fast, so you will find it very difficult to catch up if you fall behind. You may skip two Challenge assignments if you wish. You must submit all work by the last day of the course.

Prerequisites

There are no prerequisites for the course. However, you must have fundamental computer skills and be comfortable using the internet. This course covers the skills commonly used by developers and demanded by the industry. You are not required to have any coding experience, but you should be ready to learn how coding languages work.

Communication Guidelines

At times, this boot camp can be stressful as you fight to crack the code of emerging skills. Therefore, it's important to be mindful of the needs of your peers and support teams and be courteous in how you communicate. This is especially true in online communication spaces such as email or Slack, where it's easy to misinterpret comments. Consider the following communication guidelines:

- Use encouraging, supportive tones when interacting with peers.
- Try to help peers who are stuck on a topic.
- Take opportunities to thank your support team for their help.
- Avoid yelling, sarcasm, and abusive language directed at peers or support team members.
- Be clear and specific in all of your help requests. Include screenshots and locations for content trouble spots so that your TAs and peers can assist efficiently.

Expectations and Policies

Code of Conduct / Academic Honesty	You are expected to work independently on all of your assignments and quizzes and submit your own work. Any violations of the university's academic honesty policy may result in your removal from the program. Please consult with your program success manager if you have any questions about the university's policy.
Drop Policy	In the event you are not able to take the course, you can drop within the timeframe outlined in your enrollment agreement and receive a refund of your balance paid. After the first full week, you are required to fulfill your tuition payments regardless of your status in the course. If you wish to drop, you must contact your SSM.
Tutoring Policy	We offer tutoring for students who need additional support through one-on-one, 50-minute remote online sessions. While this service is included with tuition, you must be in good standing with class attendance, payment, and assignment submissions to qualify for tutoring. Students are granted one session per week during the course. You cannot accrue additional sessions, nor can they be held after the graduation date. Failure to show up for a scheduled tutoring session will result in ineligibility for future tutoring. Cancellations for a tutoring session must be made at least six hours prior to the session.
Career Services Policy	Career services strives to help you become employer-competitive. They offer support via a Career Materials Advisor, Career Coach, in-person demo days, and online workshops and events. You will have access to 1:1 career coaching with your Career Coach from the first day of class until 90 days after graduation. The Career Materials Advisor will respond within 96 business hours and your Career Coach will respond within 24 business hours.

Accessibility and Privacy Policies

Our program is designed to make learning accessible to all students. We optimize content for screen readers and use captioning on videos, and our technology and course design meets WCAG 2.0 standards. If you require additional assistance, please reach out to your PSM.

The following links display the accessibility policies for technology used in the course:

- Canvas
- Slack
- Zoom
- Learnosity

The following links display privacy policies for technology used in the course:

- Canvas
- Slack
- Zoom
- Learnosity