

Cybersecurity 1B

COURSE DESCRIPTION

Cybersecurity 1B

Unmask the cybersecurity threats around you by understanding hackers and identifying weaknesses in your online behavior. Learn to avoid the various types of cyberattacks, including those to your social media accounts, and to predict the potential legal consequences of sharing or accessing information that you do not have rights to. Dig into these crimes in depth by taking a look at cyber forensics and other cybersecurity careers. Cybersecurity will play an increasingly larger role in our personal and professional lives in the years to come.

COURSE METHODOLOGY

- This is an inquiry-based course. Students will generate knowledge through online readings, asynchronous discussions with students and their instructor, interactions with online tutorials, and online and hands-on simulations.
- The instructor will act as a guide, a facilitator, an events planner, and a resource advisor. He/she will always be available through course message.
- The student must actively construct and acquire knowledge by being intrinsically motivated to succeed. To succeed, students must participate and complete all readings and activities. This course requires the student's active participation.
- Both formal and informal assessment methods will be used in the course. Informal assessment will include an evaluation of the quality and timeliness of participation in class activities. Formal assessment may include multiple-choice quizzes, tests, discussion board participation, and written assignments. A final exam will be given at the end of the course.

COURSE PARTICIPATION OBJECTIVES

This course for which you are registered is a college preparatory, academically rigorous course that covers an entire semester's worth of material. As such, it is important that you adhere to the following guidelines as you manage your time and commit to successfully completing all required coursework:

1. The requirements for this course are equivalent to completion of minimum of 90+ hours of class instruction at a traditional on-site high school
2. Assignments must be submitted for each unit as they are completed so that the teacher may review and assess your performance. Do not hold your work, you must submit each unit's homework as it is completed, demonstrating weekly assignment completions



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3. You must log in regularly to your course to demonstrate continued participation, and completion of all course requirements, including assignments, assessments and discussion forums
4. You must complete your individual work and any incident of suspected cheating, plagiarism or collaboration on assignments violates the academic integrity expectations outlined at the time of your enrollment and can result in failure of the course or further action as deemed appropriate

Citizenship

Students are expected to conduct themselves in a responsible manner that reflects sound ethics, honor, and good citizenship. It is the student's responsibility to maintain academic honesty and integrity and to manifest their commitment to the goals of NUVHS through their conduct and behavior. Students are expected to abide by all NUVHS policies and regulations. Any form of academic dishonesty, or inappropriate conduct by students or applicants may result in penalties ranging from warning to dismissal, as deemed appropriate by NUVHS.

Communication

Throughout this course students will need to be in close contact with their instructor and fellow students. Students are expected to communicate via course message and electronic discussion boards. Therefore, students should plan on checking their course messages at least three times a week and participate in the discussion boards during the weeks they are live.

Instructors strongly encourage and welcome open communication. Clear, consistent, and proactive communication will ensure a successful experience in this course. It is the student's responsibility to notify the instructor immediately if and when a personal situation occurs that affects his/her performance in this class. Being proactive with communication will result in a quick solution to any problems that may occur.

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COURSE OUTLINE

Unit 1 – Cybersecurity Threats

Even though it's a major part of modern life, the internet is still a pretty new invention. And, like any emerging innovation, it has drawbacks. Recognizing these vulnerabilities is important because they give us, as users, the power to see danger and predict problems in cyberspace. There must be a way to protect ourselves from online threats while still enjoying the endless benefits of the web, right? Yes—the answer is most definitely, yes. In fact, it is the main objective of any good cybersecurity effort. Once we are able to identify and respond to the shortcomings of the internet and step up our own defensive behavior as a result, we bring ourselves that much closer to improving, maintaining, and enjoying one of the most valuable technological resources in the world.

Learning Objectives

- Explain the motivations behind cyberattacks
- Understand the strategies of ethical and malicious hackers
- Identify the tools and strategies hackers use to gain access to computer systems
- Describe the impact of cyber breaches on individuals, society, and the world

Activities

Unit 1 Text Questions	Homework	10 points
Unit 1 Online Lab Questions	Homework	10 points
Unit 1 Discussion 1	Discussion	5 points
Unit 1 Discussion 2	Discussion	5 points
Unit 1 Quiz	Quiz	15 points

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Unit 2: Laws, Ethics, and Digital Boundaries

Would you ever walk into a store and start breaking things just to see what happens? What about stealing something just to see if you get caught? The reasons you give for why you would or would not do such things are a part of your ethics, or sense of right and wrong. Similarly, whenever you log on to a computer, pick up your smartphone, or access a website, you must also use good judgment. When you're on the internet, it's supremely important to behave the same way you would in real life—with integrity, honesty, and a serious regard for the law. Because our online presence can feel anonymous on some level and less “observable” by others, it becomes easier to believe your digital boundaries don't impose any real limits—but they do. You may be surprised to learn just how many of your clicks, keystrokes, and online movements are tracked by outside entities looking to either enforce or breach security. As a result, it's important to fully understand how you can navigate and enjoy the internet while still keeping yourself—and your precious data—safe in every way.

Learning Objectives

- Identify key legislative acts that impact cybersecurity
- Define “netiquette” and how it applies to the field of information technology
- Understand consequences associated with unethical online practices, both personally and professionally
- Explain digital rights management and the importance of intellectual property

Activities

Unit 2 Text Questions	Homework	10 points
Unit 2 Online Lab Questions	Homework	10 points
Unit 2 Discussion 1	Discussion	5 points
Unit 2 Discussion 2	Discussion	5 points
Unit 2 Quiz	Quiz	15 points

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Unit 3: Black Hats

While it may seem like just about everything can be found on the internet these days, the truth is Google itself has only indexed about 200 terabytes of data, which translates into a mere 0.004 percent of the total internet. This begs the question, *what else is out there?* The answer to this question would surprise most people, as it reveals there's a lot more happening on the internet than most of us can see or access. And understanding a bit more about this complicated online realm can also provide insight about the natural habitat of hackers and how they use it to cultivate their cyber threats. Once we grasp the many ways this larger environment can affect our own online security, it also becomes easier to protect all aspects of privacy.

Learning Objectives

- Understand the significance of the darknet
- Identify key issues related to online privacy
- Describe the various methodologies used by hackers
- Explain how malicious actors camouflage their communications

Activities

Unit 3 Text Questions	Homework	10 points
Unit 3 Online Lab Questions	Homework	10 points
Unit 3 Discussion 1	Discussion	5 points
Unit 3 Discussion 2	Discussion	5 points
Unit 3 Quiz	Quiz	15 points

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Unit 4: Cyber Safety

As we know, the internet can be viewed as one giant analogy for our lives in the real world. The terminology, the construct, the vulnerabilities, the philosophies—they all relate back to what we, as humans, already know and understand about our surroundings. Since the dawn of humankind, we have been required to protect ourselves from predators, from enemies, from starvation, and cold weather. And, in the real world today, we still take endless precautions to protect ourselves from a host of new threats, including those found online. If we don't, we may likely suffer the digital equivalent of a tiger attack, otherwise known as an exploit. So, no matter what you read and learn throughout this cybersecurity course, the most important takeaway is remembering how to keep your data (and your physical self) safe in the digital world. Just as the hunters and gatherers of long ago knew how to read their landscape for danger, we too must observe our online surroundings with the same degree of caution and good judgment.

Learning Objectives

- Identify and understand different types of social engineering attacks
- Explain how social media affects cybersecurity and personal privacy
- Discover ways to prevent and stop cyberbullying
- Recognize the importance of security for email and web browsing

Activities

Unit 4 Text Questions	Homework	10 points
Unit 4 Online Lab Questions	Homework	10 points
Unit 4 Discussion 1	Discussion	5 points
Unit 4 Discussion 2	Discussion	5 points
Unit 4 Quiz	Quiz	15 points

Midterm Exam Objectives

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from the first four units in this course (Note: You will be able to open this exam only one time.)

Midterm Exam Activities

Midterm Discussion	Discussion	5 points
Midterm Exam	Exam	50 points

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Unit 5: Personal Cybersecurity Inventory

Take it from the experts: there are a lot of threats out there in the digital world! And to truly protect your virtual self from malicious actors, you will need to learn more about the art of anticipating, detecting, and mitigating risk through your own best practices. This means listening to the advice of various authorities in the cybersecurity field and learning how to use their knowledge to forge a stronger and more effective personal protocol for the internet and beyond. Once you understand how to turn your security knowledge into practical protection efforts, the internet becomes a more welcoming and enjoyable place for everyone.

Learning Objectives

- Describe ways to safeguard yourself and your digital assets
- Identify national organizations that post bulletins and warnings about cyber risks
- Create a plan for how you will improve your cybersecurity
- Explain the importance of online identity management and monitoring

Activities

Unit 5 Text Questions	Homework	10 points
Unit 5 Online Lab Questions	Homework	10 points
Unit 5 Discussion 1	Discussion	5 points
Unit 5 Discussion 2	Discussion	5 points
Unit 5 Quiz	Quiz	15 points

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Unit 6: White Hat Hackers

Considering recent cyberattacks, it's easy to assume the world has reached the absolute apex of digital chaos. After all, outside hacking forces have been accused of tampering with national elections, swaying popular sentiment through fake online news, and stealing big data from giant corporations and governments—how could it possibly get any crazier? At times, it can feel a bit like the black hats have taken over the virtual realm and robbed us all of our freedom to move about the internet with safety and confidence. Some hackers claim they can weaponize a commercial airliner by overwriting the flight controls, while others say shutting down the power grid of a whole city is entirely feasible. While some of this may be true, the digital war is far from lost. With the help of ethical hackers and cyber do-gooders, it is possible to actively assess the risks we face and successfully stamp out threats at every turn. Yes, it's a big job. And yes, it is only going to get bigger. So, the question is, are you ready to join the forces of good?

Learning Objectives

- List the four levels of risk assessment
- Explain the principles and practices behind ethical hacking
- Identify assessment tools and techniques to identify security risks
- Debate the appropriateness of both ethical and malicious hacking

Activities

Unit 6 Text Questions	Homework	10 points
Unit 6 Online Lab Questions	Homework	10 points
Unit 6 Discussion 1	Discussion	5 points
Unit 6 Discussion 2	Discussion	5 points
Unit 6 Quiz	Quiz	15 points

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Unit 7: Incident Response, Investigations, and Digital Forensics

No one really thinks about a crisis until it happens. When our personal devices, privacy, and information are attacked, finding the best way to recover and move on is the only thing that matters. How we respond, investigate, and use science to accomplish these goals becomes valuable to our livelihood. By learning how to best handle a breach in security, we can begin to see more about our general vulnerabilities and how we—and the world of law enforcement—can continually work to improve our systems and our security.

Learning Objectives

- Identify common risks, alerts, and warning signs of a compromised system
- Explain the five steps in the digital forensics process
- Give examples of how computer forensics affects law enforcement and private citizens
- Recognize the types of information recovered through computer forensics

Activities

Unit 7 Text Questions	Homework	10 points
Unit 7 Online Lab Questions	Homework	10 points
Unit 7 Discussion 1	Discussion	5 points
Unit 7 Discussion 2	Discussion	5 points
Unit 7 Quiz	Quiz	15 points

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Unit 8: Cybersecurity Careers

In the world of cybersecurity, the demand for talented and dedicated people never stops. Most experts agree this emerging field is not only an exciting and robust one, but it may just be the single most important industry to arise in our nation since the Industrial Revolution. Now that's a big deal! And with this assertion comes all sorts of new ideas about how to launch a cyber career. Not only are the positions plentiful, but they offer a large degree of financial security and the chance to make a real difference in the safety of the nation, its technology, and its people.

Learning Objectives

- Pinpoint the information technology skills required for career development
- Explain the important functions resumes and portfolios play in the workplace
- Identify various employment requirements and opportunities in the cybersecurity field
- Describe the value of positive work behaviors and how they affect professional success

Activities

Unit 8 Text Questions	Homework	10 points
Unit 8 Online Lab Questions	Homework	10 points
Unit 8 Discussion 1	Discussion	5 points
Unit 8 Discussion 2	Discussion	5 points
Unit 8 Quiz	Quiz	15 points

Final Exam Objectives

- Review information acquired and mastered from this course up to this point.
- Take a course exam based on material from units five to eight in this course – the last four units. (Note: You will be able to open this exam only one time.)

Final Exam Activities

Class Reflection Discussion	Discussion	10 points
Final Exam	Exam	50 points

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HOW YOU WILL BE GRADED

For critical thinking questions, there are no right or wrong answers. For example, a question on your thoughts on why you think people are shy is a pretty open-ended type of question. Grades will be based on the depth of personal insight you present. **Do not simply agree or disagree** with an insight question. We are looking for critical thinking and possibly a related personal experience with the question.

It is important to provide detailed answers for insight/opinion questions.

For review questions, you should produce a more academic answer. For example, "What two categories are norms divided into?" This type of direct question requires a specific answer. Please use full sentences and proper grammar.

When submitting paragraphs, use these guidelines.

1. The first, second or last sentence contains the main idea and key words from the question or assigned topic.
2. Paragraph contains one to three explanatory sentences.
3. Paragraph contains two to four sentences about specific details related to question.
4. Details are colorful, interesting and appropriate.
5. Paragraph ends with a good closing sentence that refers to the main idea without repeating it.
6. Free of spelling and grammatical errors.

GRADE SCALE

The following grading scale will be used to determine your final letter grade.

Letter Grade	Percentage Earned
A	95%+
A-	90% - 94.9%
B+	87% - 89.9%
B	84% - 86.9%
B-	80% - 83.9%
C+	77% - 79.9%
C	74% - 76.9%
C-	70% - 73.9%
D+	67% - 69.9%
D	64% - 66.9%
D -	60% - 63.9%
F	59% and lower

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SUPPORT

At NUVHS you will have access to multiple support teams. Who you contact will depend on the questions you have. Always start by contacting your teacher through the Message Center in the course. Your teacher should be able to answer your question, but if they can't, then they will direct you to another support team. If you have questions about any of the course content, your grades, or course policies, you should contact your instructor.

For questions about your enrollment, transcripts, or general school-wide policies, you can contact **NUVHS Student Services** at info@nuvhs.org or by phone at 866.366.8847. For example, if you would like to withdraw from your course, you should contact Student Services. Please note that a refund for your course can only be obtained if you drop within the first seven days of enrolling in the course.

For help with login/password issues, or other technical issues specific to the Blackboard website, you can contact the team at [National University Blackboard Learn](#). They can also be reached by phone at (888) 892-9095.

EXPECTED SCHOOL-WIDE LEARNING RESULTS (ESLRs)

Engaged Learners

- Demonstrate self-directed learning skills such as time management, and personal responsibility through the completion of course requirements
- Develop an understanding of their own preferred learning styles to enhance their overall academic potential
- Incorporate effective and relevant internet and multimedia resources in their learning process to broaden their knowledge base

Critical Thinkers

- Effectively analyze and articulate sound opinions on a variety of complex concepts
- Illustrate a variety of problem-solving strategies that strengthen college preparation and workforce readiness
- Formulate a framework for applying a variety of technology and internet-based research to enhance information literacy and collaborative thinking

Effective Communicators

- Demonstrate awareness and sensitivity to tone and voice in multiple forms of communication
- Express concepts and ideas in a variety of forms
- Enhance communication skills through the use of media rich or other technology resources



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Global Citizens

- Appreciate the value of diversity
- Understand the range of local and international issues facing today's global community
- Demonstrate awareness of the importance of cultural sensitivity and social responsibility in the 21st century