



North Idaho College

Coeur d'Alene · Business · Computer Information Technology

Cyber Operations

CITE-258

Spring 2023 Section 100 3 Credits 01/09/2023 to 05/11/2023 Modified 01/15/2023

Contact Information

Professor: Robert "Bob" Quant
Office: Hedlund Building 224 F
Office Phone: (208) 929-4036
Email: robert.quant@nic.edu

Office Hours:
Monday through Thursday 1 PM to 4 PM

Additional office hours available by appointment

Meeting Times

Hedlund Building, Room 224 B, Monday and Wednesday

CITE 258 -100 9 to 9:50 AM

Credit Hours: 3 credits lecture Hybrid format- for 17 weeks

This is a face-to-face course.

Description

This course teaches knowledge and skills needed to successfully handle the tasks, duties, and responsibilities of an associate-level Cybersecurity Analyst working in a Security Operations Center (SOC). Students are exposed to all of the knowledge required to detect, analyze, and escalate basic cybersecurity threats. Numerous opportunities are offered to a student to practice the necessary skills using common open-source tools.

Materials

1. There are no required text books for this course.
2. This course is delivered through Cisco's Network Academy (NetAcad) and all material, assessments and grading will be done in NetAcad.

Outcomes

Upon successful completion of this course, students should be able to:

1. Install virtual machines to create a safe environment for implementing and analyzing cybersecurity threat events.
2. Explain the role of the Cybersecurity Operations Analyst in the enterprise.
3. Analyze the operation of network protocols and services.
4. Explain the operation of the network infrastructure.
5. Classify the various types of network attacks.
6. Use network monitoring tools to identify attacks against network protocols and services.
7. Explain how to prevent malicious access to computer networks, hosts, and data.
8. Explain the impacts of cryptography on network security monitoring.
9. Evaluate network security alerts.
10. Analyze network intrusion data to identify compromised hosts.

Assessment

1. Each module content and labs is 15% of total grade.
2. Module exams are 25% of total grade.
3. The Final Exam is 35% of total grade.
4. The Final Skills Exam is 20 % of total grade.
5. End of Course Feedback is 5% of total grade. And you must complete this to compete the course.

Criteria

A	92 - 100%
A-	90 - 91.99

B+	88-89.99
B	82 - 87.99
B-	80 - 81.99
C+	78 - 79.99
C	72 - 77.99
C-	70 - 71.99
D+	68 - 69.99
D	62 - 67.99
D-	60 - 61.99
F	0 - 59.99%

NOTE: You must pass all CITE program courses with a 70% (C-) or better to continue in the CITE/NSA program courses.

You also must complete the End of Course Feedback for NetAcad, so I can mark the course as "Completed" after you pass the course.

* Course Policies

Academic Integrity Information

"Violations of academic integrity may result in failure of an assignment, failure of the course, or more serious sanctions."

Incompletes

An incomplete is assigned only if the student has been in attendance and has done satisfactory work to within three weeks of the end of the semester (or proportional length of time for a course of less than a semester in length). Incompletes are issued only in cases of extenuating circumstances, such as

severe illness or injury. Incompletes are not issued in cases in which the student is simply unable to complete his/her work within the specified semester or session. If a final grade of "I" is recorded, the instructor will indicate in writing to the Registrar what the student must do to make up the deficiency. The instructor will indicate in the written statement what permanent grade should be entered if the Incomplete is not removed by the deadline.

All incomplete grades must be removed within six weeks after the first class day of the following term, excluding the summer session. If the Incomplete is not removed by that date, the grade reverts to the grade indicated by the instructor's written statement authorizing the incomplete.

Attendance

Students are expected to attend, in person, all classes as scheduled:

- * Students who are absent because of illness or emergency should personally contact their instructor as soon as practical.
- * Illness and emergency related absences do not relieve students from the responsibility of making up any missed work.
- * It is the responsibility of the student to obtain information concerning missed work and to see that it is completed and turned in.

A minimum of 80% course attendance is required in order to receive course credit. If attendance drops below 80% you will be "Dropped for Non-Attendance" from the course. Which will result in you being dropped from the CITE/NSA program and you will need to re-apply to re-enter the program the following Fall term.

Course Expectations

1. Complete required preparation for class which includes reading course material before attending class and other assigned tasks.
2. Attend all class meetings.
3. Complete course assignments and submit by specified deadlines.
4. Take the final examination for the course.
5. Practice in the campus learning lab to develop ability to perform technical skills taught in the course.
6. Cell phones will not be used during class and must be put on vibrate or powered down during class time.

Course Requirements

1. **Each CITE course must be passed with a grade of C- or better for progression to the next CITE course.**
2. Last days to drop or withdraw:
 - January 25th last day to drop for a full tuition refund.
 - March 24th to post a "W" on transcript.

Acceptable Computer Use Policy

The computing hardware, software, and other technologies, utilized in our programs are intended solely to support learning and the course objectives. Please do not modify, install, or remove any hardware, software, or modify the computers configuration in any way, unless directed to do so by your instructor.

Do not use any learned technologies, procedures, "hacks" or applications against ANY computing system, not authorized to do so by your current CITE instructor, while in this program.

Playing computer games is not allowed at any time in the classroom or lab.

Acceptable Internet Use Policy

Internet access, when available, is provided solely to support classroom learning and course objectives.

Acceptable Food and Drink Use Policy

Food is not allowed at the computer work area at any time. Drinks are allowed in non-spill containers and provided you pick up after yourself and keep your work area clean.

Schedule

Module	Week of	Topics	Chapter Readings	Exams/Quizzes	Lab Assignments
1	Jan 9	Summative Assessments	None	Ch 1-2, Ch 3-4 & Ch 5-10	
2	Jan 16	Module 11 Network Communication Devices	11		LAB 10.2.7 LAB 10.4.3, and LAB 10.6.7
3	Jan 23	Module 12 Network Security Infrastructure	12	11 & 12 Group Exam	LAB 9.3.8 PT 12.1.9 PT 12.3.4

4	Jan 30	Module 13 Attackers and Their Tools	13		Wireshark 2 LAB 14.1.11
5	Feb 6	Module 14 Common Threats and Attacks	14		Wireshark 3
6	Feb 13	Module 15 Network Monitoring and Tolls	15		In Class 15.0.3 PT 15.2.7
7	Feb 20	Module 16 Attacking the Foundation	16		Install CyberOps Workstation OVA
8	Feb 27	Module 17 Attacking What We Do	17	13 to 17 Group Exam	LAB 17.1.7 LAB 17.2.6 LAB 17.2.7
9	Mar 6	Module 18 Understanding Defenses	18		LAB 21.2.12
10	Mar 13	Module 19 Access Control	19		LAB 21.4.7
11	Mar 20	Module 20 Threat Intelligence	20	18 to 20 Group Exam	LAB 21.1.6
		March 27 to April 3 SPRING BREAK			

12	Apr 3	Module 21 Cryptography	21		In Class 21.0.3 LAB 21.2.10 LAB 21.2.11
13	Apr 10	Module 22 Endpoint Protection Module 23 Endpoint Vulnerability Assessment	22 & 23	21 to 23 Group Exam	
14	Apr 17	Module 24 Technologies and Protocols Module 25 Network Security Data	24 & 25	24 & 25 Group Exam	Security Onion Lab TBD
15	Apr 24	Module 26 Evaluating Alerts Module 27 Working with Network Security Data	26 & 27		Security Onion Lab TBD
16	May 1	Module 28 Digital Forensics and Incident Analysis and Response	28	26 to 28 Group Exam Course Feedback	Security Onion Lab TBD
17	May 8	Finals		Skills Exam Final Exam	

All work is due by 11:59 pm each Sunday, unless otherwise stated by instructor.

Additional Items

Instructional Methodologies

This course teaches students through lectures, demonstrations, assignments and projects completed by students on both real and simulated networks. Students are expected to complete required reading assignments prior to each lecture. Students are expected to complete assigned homework during the week that follows that topic's lecture and to submit homework at the beginning of the following week's class.

The course curriculum is online in Netacad. The Netacad learning environment is an important part of the overall course experience. These online course materials include course text and related interactive media, Packet Tracer simulation activities, real equipment labs, remote access labs, and many different types of

quizzes. All of these materials provide important feedback to help you assess your progress throughout the course.

E-doing is a design philosophy that applies the principle that people learn best by doing. The curriculum includes embedded, highly interactive e-doing activities to help stimulate learning, increase knowledge retention, and make the whole learning experience much richer – and that makes understanding the content much easier.

In a typical lesson, after learning about a topic for the first time, you will check your understanding with some interactive media items. If there are new commands to learn, you will practice them with the Syntax Checker before using the commands to configure or troubleshoot a network in Packet Tracer, the Networking Academy network simulation tool. You will also do practice activities on real equipment.

An important goal in education is to enrich you, the student, by expanding what you know and can do. It is important to realize, however, that the instructional materials and the instructor can only facilitate the process. **You must make the commitment yourself to learn new skills.**

Syllabus and Schedule Disclaimer

Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. The professor reserves the right to make changes to the syllabus as deemed necessary. Students will be notified in a timely manner of any syllabus changes via email or the course Announcements. Please remember to check your NIC email and the course Announcements often.

Gateway Course Information:

This course is a designated Gateway course. Gateway courses are good early indicators of student readiness for further study. Successful completion of this course will provide a solid foundation for next steps in your studies so be sure to take every advantage of the available support and resources provided to you.

Academic Tutoring

FREE Academic Tutoring: Free, unlimited academic tutoring is available to all current NIC students. Stop by The Cardinal Learning Commons in LKH 118 to create an account or visit the Academic Tutoring website www.nic.edu/clc/tutoring to sign up for tutoring, view tutor schedules, set appointments, or to learn more about the tutoring program.

Division Policies

Student Responsibility

As outlined in the Student Code of Conduct, all North Idaho College students have both rights and responsibilities: Please access www.nic.ferpa.StudentCode/index.htm for complete information that pertains to this subject. For a complete explanation of the North Idaho College Statement on [Academic](#)

[Honesty & Academic Integrity](#).

(<http://www.nic.edu/modules/images/websites/121/file/section5/5.06.01policy.pdf>), please refer to Policy 5.06 & Procedure 5.06.01:

Academic Integrity

Disruptive behavior in the class is not tolerated. To quote from the NIC “Student Code of Conduct,” Article II, (found in the Student Handbook):

In order to carry out North Idaho College’s Mission and to create a community of learners, the students, faculty, staff, and administrators must share common principles or values. These values – which include honesty, trust, fairness, respect, and responsibility – make up academic integrity.

Violations of academic integrity may result in failure of an assignment, failure of the course, or more serious sanctions.

Institutional Policies

Academic Dishonesty

Violations of academic integrity involve using or attempting to use any method that enables an individual to misrepresent the quality or integrity of his or her work at North Idaho College. These violations include the following:

- Cheating: using or attempting to use unauthorized materials, information, or study in any academic exercise.
- Fabrication: falsifying or inventing any information or citation in an academic exercise.
- Plagiarism: knowingly representing the words or ideas of another as one’s own in an academic exercise.
- Violation of Intellectual Property: stealing, altering, or destroying the academic work of other members of the community or the educational resources, materials, or official documents of the college.
- Facilitating Academic Dishonesty: knowingly helping another to attempt to violate any provisions of this policy.”

Violations of academic integrity may result in failure of an assignment, failure of the course, or more serious sanctions.

“For a complete explanation of the North Idaho College Statement on Academic Honesty & Academic Integrity please refer to Policy 5.06 & Procedure 5.06.01: <http://www.nic.edu/policy/>

Student Code of Conduct

The Student Code of Conduct applies to any student enrolled at North Idaho College. This includes, but is not limited to, face-to-face classes and Internet classes.

NIC shall maintain a Student Code of Conduct that specifically addresses prohibited behavior and assures due process for alleged violations. The Code of Conduct shall make clear possible sanctions for such actions. [Policy Manual \(http://www.nic.edu/websites/default.aspx?dpt=121&pageId=\)](http://www.nic.edu/websites/default.aspx?dpt=121&pageId=) (See 5.06)

Disability Support Services and the Americans with Disabilities Act (ADA)

In compliance with the Americans with Disabilities Act of 1990 and Section 504/508 of the Rehabilitation Act of 1973, North Idaho College provides accommodations to eligible students who experience barriers in the educational setting due to learning, emotional / mental, physical, visual, or hearing disabilities. Instructors will provide accommodations to students only after having received a Letter of Accommodation from Disability Support Services (DSS).

If a student would like to request accommodations, he or she must contact DSS so that a Letter of Accommodation may be sent to the instructor. Students requesting accommodations should contact DSS as early in the semester as possible to avoid delay of accommodation due to student load. Accommodations are not retroactive. DSS provides academic accommodations, access, assistance and services at NIC and at the North Idaho Consortium of Higher Education campus.

Contact:

[Disability Support Services Website](#)

(208) 769-5947

Withdrawal

Please check the [NIC Calendar \(https://www.nic.edu/calendar/\)](https://www.nic.edu/calendar/) for the last day students can withdraw from courses.

Instructor-Initiated Withdrawal: An instructor has the right to withdraw a student for academic reasons. For more information, see the [Instructor-Initiated Withdrawal Procedure \(https://www.nic.edu/modules/images/websites/121/file/section5/5.04.02procedure.pdf\)](https://www.nic.edu/modules/images/websites/121/file/section5/5.04.02procedure.pdf).

Financial Aid Satisfactory Progress (SAP): Federal Regulations require North Idaho College to establish Satisfactory Academic Progress standards (SAP) for all financial aid recipients. The purpose of SAP standards are meant to ensure that students and academic institutions are held accountable to the taxpayer-funded federal student aid programs while students complete their academic goals in a timely manner. This process monitors student performance in all terms of enrollment, including terms in which the student did not receive financial aid. For more information, see the [Financial Aid Satisfactory Progress \(http://www.nic.edu/websites/default.aspx?dpt=29&pageId=3025\)](http://www.nic.edu/websites/default.aspx?dpt=29&pageId=3025) website.

For more information on withdrawals, see the [NIC Student Accounts \(http://www.nic.edu/websites/default.aspx?dpt=12&pageId=177\)](http://www.nic.edu/websites/default.aspx?dpt=12&pageId=177) website.

Title IX

North Idaho College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this. If you report this to any college employee, (except for a licensed counselor or health care professional) she

or he must notify our college's Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at NIC, please go to: www.nic.edu/titleIX (<http://www.nic.edu/titleIX>) or call (208) 676-7156

Removal From Class For Non-Attendance

Attendance is based on your participation in this class. Failure to attend will result in your being removed from this class and may result in your financial aid award being reduced. You are responsible for confirming the accuracy of your attendance record.

SPECIAL STATEMENT ON COVID-19

Your safety, health, well-being, and that of our faculty and staff are our primary concerns. Everyone is expected to abide by college measures to mitigate the risk of spreading COVID. Circumstances can change rapidly, which may require a change in the delivery method of courses, for example a move from face-to-face to hybrid or online. Continue to visit the North Idaho College [COVID-19 webpage](#) for the latest information.

Students experiencing symptoms related to COVID-19 or that have tested positive for COVID-19 should not attend class and should call Rapid-Trace to self-report: (813) 699-3551. If you were in close contact with a COVID-19 positive case, please call Rapid-Trace to self-report. Rapid-Trace will confidentially notify NIC on your behalf and assist with information and resources for effective self-quarantine, if applicable.

Students in healthcare programs experiencing symptoms related to Covid-19 should not attend class and contact the Healthcare Programs Student COVID Response Team HPNstudentcovidreporting@nic.edu for further guidance.

Students enrolled in programs associated with healthcare may have different requirements for masking in the lab and clinical settings.

COVID-19 Absences

As with any absence from class, students will need to communicate with professors directly to establish a plan for keeping pace with course material and submission of assignments during a quarantine period.

COVID-19 Student Resources

This is a challenging time to meet your academic goals. Please use the [Student Resources](#) for information and resources on basic needs such as housing, food, financial aid, and medical and mental health.

Please also visit the [Access to Computers, Internet & E-Learning Support](#) webpage for information on the technology and resources you will need to be successful.

For general questions about technology, [contact the IT Help Desk](#) at helpdesk@nic.edu or 208.769.3280.

NIC leadership will continue to monitor CDC recommendations, engage in weekly discussions with Panhandle Health District, and track local indicators for changes in conditions that may lead to greater risk.