

Incident Response & Investigation

Syllabus

Course code: **CPRM 860**

Summer 2025 (Term 5): May 27 – July 18

Required course for M.S. in CPRM

Asynchronous online modality

Course Description from UNH Catalog

This course fosters incident response and investigative knowledge, from both the organizational and system perspective. Material includes laws, standards, codes of behavior and best practices for incident response, including the management of relationships (e.g., regulators, clients, vendors). Case studies are presented and discussed in light of organizational resource limitations, legal mandates, and jurisdictional boundaries.

Learning Outcomes

With successful completion of this course, students are able to:

- Situate cybersecurity incident response and investigation within an organization's overall incident response policies and processes.
- Identify rules and best practices for reporting or otherwise communicating information about cybersecurity events and incidents.
- Identify concepts and methods for effective containment and mitigation of cybersecurity incidents.
- Articulate the roles of common tools and techniques for investigating and analyzing cybersecurity incidents.
- Explain and give examples of the differing mandates and priorities in the communities of interest for incident response and investigation (e.g., CERTs and CSIRTs, law enforcement agencies, regulators, vendors, intelligence community, etc.).

Course Materials

Course materials will be provided (for free) in digital form in our course website on <https://myCourses.unh.edu> (called “**Canvas**”). These digital materials are not only more economical, they also allow more flexibility in keeping our materials up to date. Thus, **there is no textbook to purchase**. However, the materials for this course (videos and readings) should be considered with the same academic weight as a traditional textbook. These are **required materials**, necessary for your completion of the learning activities throughout this course.

In this online course, all assignments must be submitted through our course site on Canvas.

Student experience confirms that the **most stable tools** for accessing Canvas are **up-to-date versions of Chrome or Firefox** browsers (although some extensions such as Ghostery can cause

problems). While there are mobile device apps for Canvas, they can have limited functionalities and can be buggier than these browsers.

Course Structure & Philosophy

This course operates in an asynchronous online format. This means that there are no scheduled class meeting times. Rather, you proceed through the course at your own pace – although there are due dates for all assignments. It is very important to adhere to these due dates in order to stay on track for this eight-week course. (**Late assignments will not be accepted unless there are exigent circumstances.**)

The course is divided into topical modules, as shown in our Canvas website. Materials and assignments are based on **active learning methods and open pedagogy** – which basically means that you will start to apply your own understanding of the materials throughout the course, and you will also be engaged in helping to teach each other (e.g., by sharing your ideas and analyses).

Modules and assignments are designed to build on each other sequentially, so it is important to proceed through the course in the order presented. For those of you not familiar with our online learning system, the CPRM Resource Center and the “Essential Course Information” module contain walkthrough videos and information to help you out. **Don’t hesitate to ask questions via the Course Questions discussion board – your instructor and your fellow students can respond fastest that way!**

Instructor Availability and Communications

Office Hours

See Instructor office hours from a link on the Home page of our course website. Instructors are happy to talk with you one-on-one, for any reason. You may request to meet via a private Zoom session (a one-on-one video-conferenced discussion which the instructor will set up in response to your request) or via telephone.

Instructor Communications to You

It is our program’s policy to facilitate student collaboration in classroom activities and online discussion boards without too much “interference” from the instructor. That said, instructors may occasionally inject comments into activities to prompt deeper thinking or to redirect conversations that may have veered from the learning objectives. Instructors will not send supplemental email reminders of due dates for every activity and assignment – you can see these dates in the syllabus, on the course home page, and on your Canvas calendar. For graded assignments, you will receive constructive feedback along with the grade.

How to Reach Your Instructor

The instructor’s contact information (email and phone number) is on our course home page as well. Questions related to assignments or learning should first be asked, if possible, in the discussion board called “Course Questions” (this way all students can benefit from the questions and answers). The use of email is reserved for questions of a private nature, or if you would like to schedule time during office hours.

Rules of Engagement

Cybersecurity Policy & Risk Management (CPRM) is an interdisciplinary area of study: it draws on expertise, experiences, opinions, practices, and theories from numerous disciplines. In this field, success is dependent on the ability to think critically, listen actively, and to engage in discourse that is always courteous, respectful, disciplined, and professional. Understanding and tolerating alternate points of view and opinions is required at all times. This means that in our course, we may have disagreements and debates; and through such discourse, our understanding of cybersecurity requirements and strategies can deepen.

University Disability Accommodations

The University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you have a disability requiring accommodations, **you must initially register and then renew and receive new accommodation letters every semester afterwards** with the Student Accessibility Services office. Your instructor cannot make accommodations, such as more time for taking an exam, without that office's involvement.

Please reach out to the SAS office for registration information and disability related questions:

- Email sas.office@unh.edu
- Phone (603) 862-2607
- 711 (Relay NH)
- <https://www.unh.edu/sas>

Please provide your instructor with any disability information **privately** (i.e., not on a class discussion board), so that you can discuss and arrange any accommodations ASAP.

Policy on Late Submissions

Late submissions will receive a zero unless there are exigent circumstances. If an unexpected life event or work event arises and has the potential to impact your timely completion of any assignment for this course, please be sure to **communicate this to your instructor as soon as possible**, so that you may work together to develop a plan that suits your situation. **It is the responsibility of each student to request an extension in advance, or in case of an emergency/exigency, to contact the instructor as soon as possible so you can work out a plan together.**

Curtailed operations on our physical campuses do not alter assignment deadlines in our online class. If you are impacted by inclement weather or other circumstances, be sure to reach out to your instructor ASAP to convey this exigency and discuss options for the assignment completion.

Student Support for Personal/Health Matters

Extended Absences for Non-Academic Reasons

If you are dealing with an unexpected, extenuating circumstance that will keep you unavailable or affect your performance for more than a day or two, reach out to **Lisa Enright**, Assistant Dean of Student Success, at lisa.enright@unh.edu to request a letter be sent to all your faculty.

Please do **not** send documentation of health matters to your teachers! This process of going through the Dean's office helps to keep confidentiality of your situation.

If you will miss significant class time (e.g., due to required isolation or quarantine), you will be provided temporary academic supports so that you can continue to make satisfactory progress in this course. After the letter is issued from the Dean's office to your faculty, please contact your course instructor(s) to discuss the specific types of support that will be implemented during your absence.

Other Support Available to Everyone

Basic needs support (food, housing, financial): Ongoing difficulties and unexpected events can happen to anyone. Personal challenges may relate to financial hurdles, food shortages, lack of safe housing, personal safety, etc. Online resources are available at: <https://www.unh.edu/dean-of-students/getting-help/housing-food-financial-basic-needs-support>. If you are facing any such challenges, please talk to your academic advisor or your instructor; there are resources that the university can help you access to get through these challenges. We have on-campus and community resources, and we can help you find resources in your community, too.

UNH offers a variety of services to support **mental health and well-being**. In partnership with The Mental Health Center of Greater Manchester, the UNH College of Professional Studies offers consultation visits on a walk-in basis and through telehealth appointments. Services include:

- Free confidential screening & consultation with a licensed mental health therapist.
- Referrals to mental health or substance misuse treatment. And assistance in understanding how to afford additional treatment (with or without insurance!) or find free services.

You can schedule an appointment to meet with a mental health therapist through an online booking link located on the UNH Manchester Student Wellness page: <https://manchester.unh.edu/academics/academic-services/student-wellness>. If you would like to connect to counseling services directly, you may do so by contacting The Greater Manchester Mental Health Center at (603) 668 – 4111.

The National Suicide Prevention Lifeline provides 24/7, free and confidential support via phone or chat for people in distress, resources for you or your loved ones, and best practices for professionals. Call (800) 273-TALK (8255).

If you or someone you know is experiencing a mental health or substance misuse crisis, please contact the Mobile Crisis Response Team (MCRT) at (800) 688 - 3544.

Additional online resources include self-help guides and apps:

- Self-help information from UNH PACS: <https://www.unh.edu/pacs/self-help>.
- Information from SHARPP (Sexual Harassment & Rape Prevention Program at UNH): <https://www.unh.edu/sharpp/>.
- UNH wellness guides: <https://www.unh.edu/health/wellness>.

UNH is committed to assuring a safe and productive educational environment for all students and for the university as a whole. To this end, the university **requires faculty members to report** to the university's Title IX Coordinator any **incidents of sexual violence and harassment** shared by students. Certain confidential support service providers do not have this reporting responsibility because their discussions with clients are subject to legal privilege. These **confidential providers include** the SHARPP Center for Interpersonal Violence Awareness, Prevention, and Advocacy at (603) 862-7233 or TTY (800) 735-2964 or <https://www.unh.edu/sharpp/>.

For more information about what happens when you report, how the university considers your requests for confidentiality once a report is made to the Title IX Coordinator, your rights and report options at UNH (including anonymous report options) please visit the UNH page on student reporting options via: <https://www.unh.edu/diversity-inclusion/sexual-misconduct/reporting-students>. The uSafeUS app is also available for students to keep reporting options and resources easily accessible on your phones: <https://www.unh.edu/research/prevention-innovations-research-center/evidence-based-initiatives/usafeus-students>.

Help us improve our campus and community climate. If you have **observed or experienced an incident of bias, discrimination or harassment**, please report the incident (anonymous reports may be submitted) by contacting the Civil Rights & Equity Office at UNH.civilrights@unh.edu or TEL # (603) 862-2930 voice or (603) 862-1527 TTY / 7-1-1 Relay NH, or visit the CREO website: <https://www.unh.edu/diversity-inclusion/civil-rights-equity-office>.

For immediate, life-threatening emergencies, call 911 and also alert security at your campus.

Student Support for Academic Success

This course is offered through the M.S. CPRM program, housed within the Department of Security Studies, based in the College of Professional Studies on the Manchester Campus. CPRM majors receive support through a combination of online and Manchester-based service providers. If you are a non-major student (in a different program), you are encouraged to explore alternative supports offered through your home campus (e.g., Durham).

The CPS-Manchester librarians are available to assist you with the research process. Visit the library's website at <https://cps.unh.edu/library> to learn about library services and to search for reliable academic sources. Some commonly used resources include:

- Make one-on-one **Research Appointments** with librarians:
<https://libraryguides.unh.edu/remoteaccess/researchhelp>
- Use the **Library Search Box** to find information:
https://libraryguides.unh.edu/librarysearchbox_unhmanchester
- Discover resources for **Citing Sources**:
<https://libraryguides.unh.edu/unhmcittingsources>
- Learn **strategies for Evaluating Sources**:
<https://libraryguides.unh.edu/ENGL401UNHManchester/evaluatingsources>

As a UNH student, you also have:

- Online and in-person support services: <https://manchester.unh.edu/support-services>
- Research guides to help with writing, studying, and research (see the "Help & How-To" category here): <https://libraryguides.unh.edu/>

You can request **interlibrary loans for articles not available from UNH directly**. Follow the instructions here for the interlibrary loan process: <https://library.unh.edu/services/interlibrary-loan>. This process uses a platform called ILLiad, and when creating your account, use:

- Your UNH username and password
- Manchester/CPSO as your campus affiliation
- 'Other-Unlisted' as your department

If you need help with interlibrary loans, contact our Manchester library at unhm.library@unh.edu.

If you need **access to physical materials in our UNH libraries** (i.e., articles or book *chapters* with no online access), use the **UNH Document Delivery service** (note the limits; e.g., only one chapter per book request and only one article per issue, chapter page limitations, and daily request limits): <https://library.unh.edu/services/document-delivery>

The University Writing Programs have a lot of **resources to help you with your research, writing, and oral presentation skills**: <https://www.unh.edu/student-success/university-writing-programs/resources>.

The Online Writing Lab (OWL) is an excellent resource for students and may provide some peace of mind before submitting your next writing assignment. The web-based OWL provides **collaboration with qualified writing assistants**. Students in all fields of study can submit up to 20 double-spaced pages of any form of writing to the OWL, including course papers, resumes, creative essays, or personal statements. Within three business days, writing assistants provide typed feedback in an e-mail message and handwritten digital ink comments on documents that can be printed or viewed on screen. See more at <https://www.unh.edu/student-success/university-writing-programs/welcome-unh-online-writing-lab>.

University Policies & Administration

For support with registration, financial aid, graduation requirements, etc., please contact our Student Success Coaches at unh.online@unh.edu. You can also make an appointment to talk with your advisor or the CPRM Program Coordinator. More information is found at:

- **Registration:** <https://manchester.unh.edu/academics/registration-office>
- **Financial aid:** <https://gradschool.unh.edu/admissions/financial>
- **Graduation requirements:** <https://gradschool.unh.edu/graduate-student-resources/graduation-commencement>
- **Commencement celebrations:** <https://manchester.unh.edu/academics/registration-office/graduation/commencement>

The UNH Graduate School catalog is the primary resource for **Graduate School policies**:
<https://catalog.unh.edu/graduate/>.

Forms can be found on the Graduate School's website:
<https://gradschool.unh.edu/academics/forms-policies>.

Academic Standards (3 credit hours)

This is a 3-credit course conducted in an intensive 8-week format. The University of New Hampshire conforms to the U.S. federal definition of a credit hour. A three credit course is expected to involve a minimum of 135 hours of student work effort (reading/viewing materials, making notes, doing research, fulfilling assignments, etc.), estimated pedagogically for an “average student” in this course. Depending on your prior experience and education, these numbers may be different for you and may be different from week to week (e.g., where material may be familiar to you or may be brand new). In each module, our CPRM teachers provide an estimate of work effort for that module; while there may be some variation in individual student experience, this estimation may still provide useful information regarding the balance of time for different tasks (e.g., reading materials versus working on an applied assignment).

Pursuant to MS CPRM program policy:

- Students must earn a grade of “B-” or higher to pass this course and to have this course qualify as a prerequisite for later courses.

Pursuant to UNH Graduate School policy:

- Graduate credit is only granted for courses completed with a grade of “B-” or higher.
- When enrolled under the accelerated master's (AM) option, students receiving any grade below “B-” in a graduate course while in dual status may be dismissed and have their admission to the Graduate School withdrawn. AM students must also maintain a minimum 3.2 undergraduate GPA.
- Graduate students receiving grades below “B-” in 9 or more credits will be dismissed from the Graduate School.
- Graduate students must have a minimum cumulative 3.0 GPA (at the graduate level) to graduate.

See the policies for further details:

- <https://catalog.unh.edu/graduate/academic-regulations-degree-requirements/academic-standards/>
- <https://catalog.unh.edu/graduate/academic-regulations-degree-requirements/grading/>
- <https://gradschool.unh.edu/academics/accelerated-masters-program>

Academic Integrity

Students are required to abide by the UNH Academic Honesty policy located in the **Student Rights, Rules, and Responsibilities Handbook**, found here: <https://catalog.unh.edu/srrr/>

You are expected to prepare and present your own work to satisfy academic requirements. UNH considers academic dishonesty a very serious offense. The Academic Integrity violations process is followed in all cases of suspected academic dishonesty. Sanctions may include failure of a test or assignment, failure of a course, suspension, or dismissal from the University. Academic Integrity violations include the following items:

- **Cheating:** Students may not use unauthorized assistance in preparing assignments or completing exams. This includes any oral or written presentations.
- **Fraud:** Students may not gain unfair advantage through deceit or trickery, including falsification of records. In addition, unless a student has been granted prior permission from each professor, double/multiple submission (submitting identical or substantially similar written assignments to fulfill a requirement in more than one course, regardless of term) constitutes one form of academic fraud.
- **Plagiarism:** Plagiarism is recognized by the University as an act of academic dishonesty. It is defined as taking the ideas, writings, and/or words of another and representing them as one's own. Two common forms of plagiarism involve the use of written or oral work of another person without giving proper acknowledgment and the use of the work of another person as one's own. Additionally, ghosting, buying, selling, trading papers, projects, computer programs or other academic assignments; or fraud, including the intent to commit one of these acts constitutes plagiarism. If you have questions about proper citation, please contact a librarian; additional resources are found at <https://libraryguides.unh.edu/unhmcitingsources>.

Generative artificial intelligence (AI) tools

In this class, the use of automated writing tools, including ChatGPT and similar artificial intelligence (AI) tools, is permitted but likely will be of only minimal help in our highly contextualized, applied-learning assignments. ChatGPT relies on a neural network that crunches data and predicts the next likely words; it does not rely on the meaning of what it is processing or conveying, and it is often incorrect (e.g., see <https://gizmodo.com/cnet-ai-chatgpt-news-robot-1849996151> and <https://www.theverge.com/2023/2/14/23599007/microsoft-bing-ai-mistakes-demo>).

Currently, these kinds of tools likely will mostly help those who are already deep subject matter experts (SMEs) who can more efficiently and effectively identify hallucinations and contextual logic gaps in the responses. Some preliminary research has shown that while SMEs may benefit from limited (and critical) use of these tools, newer scholars may be overconfident in the accuracy and sufficiency of the tools' responses (e.g., see <https://arxiv.org/abs/2211.03622>).

You are encouraged to take advantage of this class to exercise your own creativity, judgment, and analytical skills. Such efforts may be constrained if these kinds of tools are used as a crutch rather than as supplementary enhancements.

Therefore, use these tools at your own risk. The argument that “an AI tool provided this answer” will **not** be sufficient reasoning if you are arguing against deductions the teacher took from an assignment.

Similarly, in cases of **plagiarism**, the argument that “an AI tool provided this answer” will not be an acceptable excuse (these tools may plagiarize other works themselves; if you submit such work, then the plagiarism will attach to you).

You also may want to consider other ethical matters related to these tools, as *WIRED* has here: <https://www.wired.com/about/generative-ai-policy/>.

Rubric and Evaluation Methods

Grading rubrics have been established for assignments. The rubrics are available **on the course website page for submitting each assignment. Use these rubrics to guide your completion of assignments.** Rubrics show the relative weights of the components of each assignment – letting you know **what the instructor is looking for**. Final grades are determined according to UNH guidelines using this schema:

Letter	Range		
A	100 %	to	94 %
A-	< 94 %	to	90 %
B+	< 90 %	to	87 %
B	< 87 %	to	84 %
B-	< 84 %	to	80 %
C+	< 80 %	to	77 %
C	< 77 %	to	74 %
C-	< 74 %	to	70 %
D+	< 70 %	to	67 %
D	< 67 %	to	64 %
D-	< 64 %	to	60 %
F	< 60 %	to	0 %

Assignments

The course grade is based on 200 points and is developed from a variety of assignments and tests. **Assignments will be due weekly.** There are also some Extra Credit (EC) opportunities that are optional. (These EC opportunities help you with the subsequent assignments.) **You are always free to submit assignments early.** More information is found below and in each module, and assignments are accessible via the “Assignments” and “Syllabus” navigation buttons.

Item	Points	Timeframe
Introductions (video)	10	Week one
Certificate (from FEMA IS course)	10	Week two

Mini-writing assignment	20	
Discussion post	20	Week three
Knowledge check	15	
EC opportunity	(EC)	Week four
Exam (cumulative)	40	Week five
Knowledge check	15	Week six
Presentation (video)	30	
EC opportunity	(EC)	Week seven
Writing assignment	40	Week eight

Course Navigation

Canvas is the learning management system we use for this course. The overall course navigation is listed here, and you can find a brief walkthrough of the course in the “Essential Course Information” module.

Home	This is the landing page for the course. It includes the term dates, instructor contact info, and directions for how to start the course.
Announcements	Once your instructor posts the first welcome announcement, this navigation item will appear. This section is where you can access all announcements (recent and prior) from your instructor. (The most recent announcement is also accessible via your Home page.)
Syllabus	The syllabus and other key university policy documents are located here.
Modules	This area contains the learning Modules (majority of course content).
Assignments	Here is where you can find a list of all graded components in the course. You can sort the assignments by date to see what is coming up.
Discussions	Much of the active learning in this course is enhanced with the use of discussion boards (individual or group posts and comments). Links to specific discussion boards are included in the respective modules, and all discussion boards are listed here.
People	Here is the list of people involved in this course
Grades	This is where you can view your grades for particular assignments and also track your course progress.
Blue SEL Survey	Near the end of the course, online evaluations will be available for you to provide feedback to UNH about this course and the instructor. <i>Courses with low enrollments will NOT have the automatic online evaluations; in this case, the program will provide information on how to convey feedback.</i>

Storage

The instructor may keep any copies of assignments or exams until approximately 3-4 weeks into the next semester. At that time, they will be recycled and/or deleted.

Technical Requirements and Technical Support

Browser and computer requirements for using Canvas may be found here: <https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Instructure/ta-p/66>. The most stable tools for accessing Canvas are up-to-date versions of **Chrome** or **Firefox** (although some extensions such as Ghostery can cause problems). While there are mobile device apps for Canvas, they can have limited functionalities and can be buggier than these internet browsers.

For this course (and others in the CPRM program), you will need to **create digital video recordings** of yourself (e.g., giving an oral presentation). Please be sure to have a computer with webcam or another tool to record video (e.g., smartphone or video-capable camera). Please also review the university's minimum technical requirements to ensure that your computers and devices will support our UNH online learning environment:

<https://td.unh.edu/TDClient/KB/ArticleDet?ID=1118>

While we use Canvas for our online course, we may use the teleconferencing tool Zoom for participation in remote office hours. Once a student makes an appointment, the instructor will set up and schedule the Zoom session and will email the student the link to access the session.

For **tech help (24 hours a day, seven days a week)**:

- Use the blue “Help” button in the left-hand column of your Canvas course page to access all communication options.
- Find tech support, walkthroughs, and tutorials in the “Essential Course Information” section of our course website.
- Phone (603) 862-4242.

Course Schedule & Topics

The “Modules” area of our Canvas course website shows the course schedule; there is also an overview of the schedule within the “Essential Course Information” module. This gives you an idea of the course themes and timing of activities and assignments. (You can access the “Essential Course Information” before the start of the term, once the course is published.) Generally, the topic sequence is:

- **Week 1: Context.** For this module, rather than the instructor setting the context, the students are going to be developing the initial context for this course. Students will first study an incident management system for a different context, and then we will pull out the main ideas and apply them to cybersecurity (CS). This module helps build a foundation for approaching the subsequent modules in this course. At the end of this course, we return to the context to help us tie the course together.

- **Weeks 2 – 4: Measures for Incident Response.** In this module, we keep our concepts of an "incident management system" in mind as we explore a variety of security measures for incident response. This material is broken into topical sections: (A) plans, policies, and responsibilities; (B) procedures, practices, and activities during incident response; and (C) relationships, collaboration, and information sharing. Students share their knowledge with each other in discussion boards and review the materials with a knowledge check. The module finishes with a cumulative exam (modules one and two).
- **Weeks 5 & 6: Legal & Operational Considerations for Incident Response.** This module takes the incident response (IR) measures from module two and analyzes what all of this means for an organization. We look at the legal and operational considerations of cybersecurity IR, and we identify important ways that security, operational, and legal matters all interact with each other. Students complete a knowledge check in the first half of the module, and create an oral presentation at the end of the module.
- **Weeks 7 & 8: Incident Response in Cybersecurity Context.** Similar to other CPRM courses, the final module here will help us synthesize the concepts and materials from this course. We begin by surveying various templates for IR plans particular to cybersecurity. With this survey, students compare and contrast these plans to what was learned from our initial study of NIMS. We then have an additional short reading and video that further help us analyze systems for incident management, to help us extrapolate such a systematic approach to the cybersecurity context. In the final assignment for the course, students write an essay that captures their findings and presents their recommendations for future work in this area.

The “Syllabus” section gives you a one-page listing of all assignments and due dates (the content of assignments may not become available until the term begins). All assignments are also listed in the “Assignments” area and are sortable by due dates. Your “Calendar” in Canvas will display a calendar view of due dates for all assignments in this course.

Once the term begins, the substantive modules for all eight weeks typically become available. Details are provided in each module, including the recommended timeframe for completing each module, the required materials for reading & viewing, and the assignments. Any revisions and updates to the course schedule will be announced and made available via our course website.

Note: This syllabus is subject to change. Students will be promptly notified of any changes.