



INFO 7374 Managing Operational Risk for Engineers

Summer 2025

Course Information

Course Title: Managing Operational Risk for Engineers

Course Number: INFO 7374

Term and Year: Full Summer 2025

Course Time: Friday's 3:00 PM – 6:20 PM ET

Credit Hour: 4 SH

CRN: 53309 (Boston)

Course Format: Livecast

Instructor Information

Full Name: Kaleigh Sieczkowski, MS

Email Address: k.sieczkowski@northeastern.edu

Office Hours: By appointment

Instructor Biography

Kaleigh Sieczkowski is an accomplished professional with a strong background in information systems, project management, and risk management. Currently serving as Assistant Director in the MGEN department, she leverages her expertise to support and guide graduate-level students. Kaleigh holds a Master of Science in Information Systems (MSIS) from Northeastern University and a Bachelor of Arts in International Relations from Michigan State University, which provide her with a well-rounded understanding of both technology and the global political forces that shape project management and risk management strategies. Her experience in these fields enables her to effectively teach risk management with a focus on security operations, preparing students to navigate the evolving challenges in software engineering.

In her previous role as a Litigation Paralegal at one of the world's largest law firms, Kaleigh honed her skills in compliance, risk mitigation, and strategic analysis, all of which are key components in managing operational risks. Now, she applies this expertise to help students understand how to integrate security operations into risk management frameworks. Her teaching emphasizes practical, real-world applications, focusing on aligning security operations with risk management strategies to protect systems and data in an increasingly complex digital landscape.

Teaching Assistant and Instructional Assistant Information

Full Name: TBD

Email Address: TBD

Office Hours : TBD

Course Prerequisites

N/A

Course Description

This course offers a comprehensive exploration of risk management principles, focusing on identifying, assessing, and mitigating risks within engineering and technical environments. Students will learn strategies for risk monitoring and control, stakeholder engagement, and developing effective response plans. The course also examines how organizational factors, such as communication and company culture, influence risk management practices.

Real-world applications are central to this course. Students will analyze case studies, assess emerging risks, and apply these concepts in real-world settings. Through hands-on projects and interactive discussions, students will gain practical insights into implementing security controls, developing incident response plans, and ensuring compliance with industry standards, preparing them to effectively manage risks in dynamic environments.

By the end of the course, students will be equipped to apply risk management strategies in their work environments and take the lead on initiatives that enhance organizational performance and safeguard critical assets.

Course Learning Outcomes

Upon completing this course, students will have a strong foundation in risk management principles, encompassing essential strategies for identifying, assessing, and mitigating risks across diverse organizational contexts. They will develop practical skills in implementing effective risk management strategies and leading initiatives that enhance organizational performance. Additionally, students will examine the role of security operations in shaping risk management practices and gain the ability to navigate emerging risks and regulatory requirements. These competencies will enable students to effectively manage risks and enhance organizational operations in their respective fields.

Required Tools and Course Textbooks.

Title: Fundamentals of Risk Management: Understanding, Evaluating and Implementing Effective Enterprise Risk Management

- **Authors:** Paul Hopkin, Clive Thompson
- **Publisher:** Kogan Page; 6th edition (December 28, 2021)
- **ISBN-10:** 1398602868
- **ISBN-13:** 978-1398602861

Course Schedule/Topics Covered.

**Please note that the course schedule and assignment deadlines are subject to adjustment based on the actual pace of the course.*

Week	Date	In Class Topic	Assignment Due	Reading Due
1	5/9/2025	Course Introduction and Overview - Overview of risk management principles and concepts - Course objectives, expectations, and outcomes - Introduction to risk management frameworks and standards		
2	5/16/2025	Introduction to Risk Identification and Assessment - Strategies and techniques for identifying potential risks in projects and operations - Risk identification methods: brainstorming, SWOT analysis, checklists		Chs. 1 & 2 (pgs. 1 – 41)
3	5/23/2016	Risk Identification and Assessment Continued - Qualitative risk assessment: probability and impact assessment - Quantitative risk assessment: probabilistic modeling, decision trees - Risk matrix and risk scoring techniques	Team Assignment 1 & Peer Evaluation	Chs. 10 & 11 (pgs. 115-137)
4	5/30/2025	Risk Mitigation Strategies - Developing and implementing mitigation strategies for software and intelligent system risks - Risk transfer, avoidance, reduction, and acceptance within operational frameworks	Quiz 1	Ch. 15 (pgs. 171-181)
5	6/6/2025	Risk Mitigation Strategies Continued - Creation of comprehensive risk mitigation plans addressing automation and privacy concerns - Integration of these plans into operational practices	Individual Assignment 1	

6	6/13/2025	Risk Monitoring and Control - Techniques for continuous monitoring of risk, including in AI systems - Tracking and adapting responses to operational threats over time	Quiz 2	Ch. 17 (pgs. 193-197)
7	6/20/2025	Stakeholder Engagement - Effective communication strategies for conveying risk management information to diverse stakeholders - Strategies for engaging stakeholders actively and aligning their understanding with privacy and security practices in the age of AI	Individual Assignment 2	Ch. 30 (pgs. 348-356)
8	6/27/2025	Stakeholder Engagement Continued - Analyze human behavior and cognitive biases influencing risk-related decision-making - Understand the impact of organizational culture on risk management processes	Team Assignment 2 & Peer Evaluation	
9	7/4/2025	No class – USA: Independence Day		
10	7/11/2025	Organizational Factors in Risk Management - Explore a variety of tools and techniques for assessing operational and security risks - Apply modeling and simulation techniques to perform potential failure analyses that enhance organizational preparedness	Quiz 3	Ch. 20 & 21 (pgs. 223-244)
11	7/18/2025	Risk Response Planning, Methodology, and Practices - Develop effective risk response strategies and contingency plans focusing on privacy and security management - Integration of risk plans into engineering workflows	Individual Assignment 3	Ch. 23 & 24 (pgs. 259-285)
12	7/25/2025	Risk Response Planning, Methodology, and Practices Continued Manage risks throughout the		

		project lifecycle Security and privacy across project phases with AI considerations		
13	8/1/2025	Emerging Risks and Trends, Ethical Considerations - Apply risk management techniques to practical scenarios, - Investigate future challenges in operational risk management, focusing on evolving technologies - Discuss the implications of these technologies for risk management strategies - Navigating ethical risk in intelligent systems		Case Studies on pgs. 80-82, 220-222
14	8/8/2025	Final Exam/Presentations	Final Exam/Presentation	
15	8/15/2025	Final Exam Week Session (if needed)		

Assignment Grading

- **Individual Assignments** – 30%
- **Final Exam/Presentation** – 25%
- **Team Assignments** – 20%
- **Quizzes** – 10%
- **Peer Evaluations** – 10%
- **Attendance** – 5%

Total: 100%

This course includes both team-based and individual assignments. Your final grade will be determined by your performance across all required components, as outlined in the course syllabus.

Please note the following grading policies:

- Grades will not be curved. Your grade reflects your performance against the course expectations, not in comparison to your peers.
- The course includes three quizzes. Of these three, your lowest quiz score will be automatically dropped. Only the highest two quiz scores will count toward your final grade.
- Some individual assignments may be delivered through Canvas using the *quiz* format. These

are not considered quizzes for grading purposes. The quiz drop policy applies only to the three designated quizzes, not to other assignments even if they appear as “quizzes” in Canvas.

- No extra credit will be offered. This is to ensure fairness and consistency for all students.

If you have any questions about how a particular assignment is categorized, do not hesitate to reach out to the professor during the course.

Grading Scale

Percentage Range	Letter Grade	Grade Point Equivalent
95.0–100.0%	A	4.000
90.0–94.9%	A-	3.667
87.0–89.9%	B+	3.333
84.0–86.9%	B	3.000
80.0–83.9%	B-	2.667
77.0–79.9%	C+	2.333
74.0–76.9%	C	2.000
70.0–73.9%	C-	1.667
69.9% and Below	F	0.000

Incomplete Grades

An incomplete grade may be reported by the instructor when a student has failed to complete a major component of a required course, such as homework, a quiz or final examination, a term paper, or a laboratory project. Students may make up an incomplete grade by satisfying the requirements of the instructor. Be aware that instructors’ policies on the granting of incomplete grades may vary and that the final decision on an incomplete grade is up to the instructor. **Instructors may deny requests for an incomplete grade.** If the missing assignment(s) have not been submitted to the instructor within 30 days from the end of the term in which the course was offered, or the agreed upon due date, the grade entered will reflect the student’s grade in the course for the work completed and the missing assignments receiving no credit toward the final grade.

Attendance/Late Work Policy

This course is delivered in a **livecast format**, meaning class sessions are conducted live and in real time, with in-person participation from students. Although live technology may be used to support instruction, this course is officially designated as an **on-ground** course modality. As such, it meets the requirements for visa and study permit compliance related to in-person instruction.

Students are therefore required to **attend class in person** each week, as they would for any other in-person, on-ground course. Zoom, Teams, or other remote participation links **will not be provided**. Attendance will be recorded during each session and will contribute to your overall course grade. Please refer to the full Attendance Policy below for detailed information regarding attendance requirements, expectations, and how absences are handled.

Attendance Policy

In each term, students enrolled in on-ground sections are expected to be on campus and attending class beginning with the first day of classes. Students in online sections are expected to log in and participate in class beginning with the first day of classes.

Students who join a class after the first day of class during the university add period, or who are approved for late registration by the instructor and the Graduate School of Engineering, are responsible for all coursework missed prior to enrolling. In the interest of students' success, the college does not support the arrival of students to class after the university add deadline. **Enrolled students who do not attend class during the first week of a semester risk being dropped from the course.**

In cases where an enrolled student cannot arrive to campus by the first day of class due to circumstances beyond their control, it is the student's responsibility to contact the instructor for approval and notify the Graduate School of Engineering.

Students registered in MGEN courses (INFO, CSYE, and DAMG) are allowed **a maximum of 2 absences per course**, with 3 or more absences resulting in an 'F' for that course. Course instructors are not expected to make accommodations and students are expected to inform their instructors of any absences in advance of the class. Should a student anticipate being unable to attend 3 or more classes, they should discuss their situation with their Academic Advisor to explore other types of leave and accommodations in accordance with the University's academic and global entry expectations. Students may be asked to share communications about class absences with their Academic Advisor. If a student is sick long-term or experiences a medical issue that prevents class attendance, it is strongly encouraged that they speak with their Academic Advisor (coe-gradadvising@northeastern.edu) to learn more about the Medical Leave of Absence. International students should review the Office of Global Services webpage to understand their visa compliance requirements.

Teaching Assistants (TAs) or Instructional Assistants (IAs) will be present at each class to collect student attendance.

Late Work Policy

Students must submit assignments by the deadline in the time zone noted in the syllabus/course Canvas page. Students must communicate with the faculty prior to the deadline if they anticipate work will be submitted late. If a student anticipates that an assignment will be submitted late, they **must communicate with the faculty at least 48 hours in advance of the deadline** to request consideration.

Late submissions without prior communication and approval will receive a grade of zero and will not be evaluated.

Extensions are granted at the discretion of the instructor and are not guaranteed. Planning ahead and maintaining open communication is essential.

Course Evaluations

Student feedback on their learning experience is valuable and helps improve future courses. We encourage all students to complete the course evaluation surveys when they become available.

Surveys are distributed at both the midterm mark and the end of the term via email and are completely anonymous and confidential. Any questions about the surveys can be directed to mgen-programs@coe.northeastern.edu

MGEN Student Feedback

Students who would like to provide the MGEN unit with anonymous feedback on this particular course, Teaching Assistants, Instructional Assistants, professors, or to provide general feedback regarding their program, may do so using this survey: https://neu.co1.qualtrics.com/jfe/form/SV_cTIAbH7ZRaaW0Ki

Academic Integrity

A commitment to the principles of academic integrity is essential to the mission of Northeastern University. The promotion of independent and original scholarship ensures that students derive the most from their educational experience and their pursuit of knowledge. Academic dishonesty violates the most fundamental values of an intellectual community and undermines the achievements of the entire University.

As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, examinations of whatever kind, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Students are responsible for learning the conventions of documentation and acknowledgment of sources in their fields. Northeastern University expects students to complete all examinations, tests, papers, creative projects, and assignments of any kind according to the highest ethical standards, as set forth either explicitly or implicitly in this Code or by the direction of instructors.

The following is a broad overview, but not an all-encompassing definition, of what constitutes a violation of academic integrity:

Cheating: The University defines cheating as using or attempting to use unauthorized materials, information, or study aids in any academic exercise. When completing any academic assignment, a student shall rely on their own mastery of the subject.

Fabrication: The University defines fabrication as falsification, misrepresentation, or invention of any information, data, or citation in an academic exercise.

Plagiarism: The University defines plagiarism as using as one's own the words, ideas, data, code, or other original academic material of another without providing proper citation or attribution. Plagiarism can apply to any assignment, either final or drafted copies, and it can occur either accidentally or

deliberately. Claiming that one has “forgotten” to document ideas or material taken from another source does not exempt one from plagiarizing.

Unauthorized Collaboration: The University defines unauthorized collaboration as instances when students submit individual academic works that are substantially similar to one another. While several students may have the same source material, any analysis, interpretation, or reporting of data required by an assignment must be each individual's independent work unless the instructor has explicitly granted permission for group work.

Participation in Academically Dishonest Activities: The University defines participation in academically dishonest activities as any action taken by a student with the intention of gaining an unfair advantage over other students.

Facilitating Academic Dishonesty: The University defines facilitating academic dishonesty as intentionally or knowingly helping or contributing to the violation of any provision of this policy.

Please visit <https://osccr.sites.northeastern.edu/academic-integrity-policy/> to access the full academic integrity policy.

University Health and Counseling Services

As a student enrolled in this course, you are fully responsible for assignments, work, and course materials as outlined in this syllabus and in the classroom. Over the course of the semester if you experience any health issues, please contact UHCS.

For more information, visit <https://www.northeastern.edu/uhrs>.

Student Accommodations/Disability Access Services (DAS)

Northeastern University and the Disability Access Services (DAS) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations, students must provide appropriate documentation as provided by the DAS office.

If the course is conducted in an on-ground (in-person) format, students are expected to attend class physically as scheduled. Professors are **not required to provide virtual attendance links** unless a student has documented accommodation approved by the **Disability Access Services (DAS) office** and their **Academic Advisor**. If a student requires accommodation for remote participation, they must submit a formal request through the **Disability Office** and coordinate with their **Academic Advisor** prior to the course start date.

For more information, visit <https://disabilityaccessservices.sites.northeastern.edu/>

Office of Global Services

As an F-1, J-1, or Study Permit student, you must meet certain obligations in order to maintain lawful nonimmigrant status. Maintaining status is necessary in order to retain eligibility for the benefits of F-1

or J-1 status, such as employment authorization and program extension, and can be crucial to a successful application for a change or adjustment of nonimmigrant status in the future. Failure to maintain your nonimmigrant status can result in serious problems with immigration and *could lead to deportation from the U.S. or Canada.*

Students must maintain on-ground presence throughout the academic term. At Northeastern, there are four different defined instructional methods: Traditional, Hybrid, Live Cast, and Online. Traditional, Hybrid, and Live Cast courses meet the Visas' on-ground presence requirements. **Online courses do not meet the Visas' on-ground presence requirements.**

Students enrolled in Summer courses should adhere to OGS guidelines on maintaining status during the Summer term.

For more information please visit, <https://international.northeastern.edu/ogs/current-students/understanding-visa-requirements/guidelines-on-maintaining-status/>

Library Services

The Northeastern University Library is at the hub of campus intellectual life. Resources include over 900,000 print volumes, 206,500 e-books, and 70,225 electronic journals.

For more information and for education specific resources, visit <https://library.northeastern.edu>
Network Campus Library Services: [Northeastern University Library Global Campus Portals](#)

24/7 Canvas Technical Help

For immediate technical support for Canvas, call 617-373-4357 or email help@northeastern.edu

Canvas Student Resources: <https://canvas.northeastern.edu/student-resources/>

For assistance with my Northeastern e-mail, and basic technical support:

Visit ITS at <https://its.northeastern.edu>

Email: help@northeastern.edu

ITS Customer Service Desk: 617-373-4357

Belonging at Northeastern

Fostering a community of belonging is essential to the advancement of Northeastern University's mission of teaching and research. Our university is stronger as a result of the varied backgrounds, experiences, and perspectives that all members of our global community bring to the pursuit of knowledge. Embracing this pluralism is not the work of one office, department, or academic unit. It is a shared responsibility that spans disciplines and boundaries. By harnessing the power of our differences, we will continue to light the path to bold new ideas and life-changing discoveries. For more information, please visit <https://belonging.northeastern.edu/>

Title IX

Northeastern University complies with federal, state, and provincial civil rights laws and prohibits discrimination within any of its programs, activities, and services in accordance with *Title VI of the Civil*

Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title IX of the Education Amendments Act of 1972, Age Discrimination Act of 1975, U.S. Department of Homeland Security Regulation 6 C.F.F. Part 19, and other applicable civil rights laws and regulations.

In case of an emergency, please call 911.

Please visit <https://ouec.northeastern.edu/services/> for a complete list of reporting options and resources both on- and off-campus.